



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE-560119

Mandatory Disclosures

The following information shall be given in the information Brochure besides being hosted on the **Institution's** official Website.

The onus of the authenticity of the information lies with the Institution ONLY and not on AICTE.

1.	Name of the Institution • Address including Telephone, Mobile, E-mail	BMS Institute of Technology & Management Post Box No. 6443, Doddaballapura Main Road, Avalahalli, Yelahanka, Bangalore-560119. Ph: 080-68730429 / 080-68730444 Email: <a href="mailto:principal@bmsit.in">principal@bmsit.in</a>
2.	Name and address of the Trust / <del>Society /</del> <del>Company</del> and the Trustees • Address including Telephone, Mobile, E-mail	BMS Educational Trust Post Box No.1908, Bull temple road, Basavanagudi, Bangalore - 560019. Ph: 080-26611636 E-mail: <a href="mailto:bmset@rediffmail.com">bmset@rediffmail.com</a>
	Trustees	Dr. B.S. Ragini Narayan Donor Trustee, Member Secretary and Chairperson, BMS Educational Trust, Bangalore - 560019
		Dr. P. Dayananda Pai Chairman, Century Group & Chairman, BOG, BMSCE, Life Trustee, BMSET Bangalore - 560019.
		Sri. Aviram Sharma, Trustee, BMS Educational Trust, Chairman, BOG, BMSIT&M, Bangalore - 560019.
		Dr. Thirumalachari Ramasami, (Awarded Padma Shri & Padma Bhushan by President of India), Trustee, BMSET, Bengaluru-560019.
		Smt. Sri. Prasanna H, I.A.S Member, State Govt. Nominee Director, Department of Technical Education Government of Karnataka

3.	Name and address of the <del>Vice Chancellor / Principal / Director</del> Address including Telephone, Mobile, E-mail	Dr. Sanjay H A DS-Max Flat No-208/B, Streak Nest Apartment, Opp. Shreeram Sahana, D.B Main Road, Nagenahalli, Yelahanka, Bangalore-560119 Ph: 080-68730402 M: 9342560303 Email: <a href="mailto:principal@bmsit.in">principal@bmsit.in</a>
4.	Name of the affiliating University	Visvesvaraya Technological University, Belagavi.
5.	Governance	
	i. Organizational chart	Enclosed Annexure - 1
	ii. Grievance Redressal mechanism for Faculty, staff and students	Enclosed Annexure - 2
	iii. Establishment of Anti Ragging Committee	Enclosed Annexure - 3
	iv. Establishment of Online Grievance Redressal Mechanism	Enclosed Annexure - 4
	v. Details of Grievance Redressal Committee in the Institution and OMBUDSMAN by the University	Enclosed Annexure - 5
	vi. Establishment of Internal Complaint Committee (IC)	Enclosed Annexure - 6
	vii. Establishment of Committee for SC/ST	Enclosed Annexure - 7
	viii. Internal Quality Assurance Cell	Enclosed Annexure - 8
	ix. Equal Opportunity facilities Cell	Enclosed Annexure - 9
6.	Programmes	
	i. Name of the Programmes approved by AICTE	i. Engineering and Technology ii. Master of Computer Applications iii. Master in Business Administration
	ii. Name of the Programmes Accredited by NBA	a. Electronics and Communication Engineering b. Computer Science and Engineering c. Information Science and Engineering d. Mechanical Engineering e. Electrical and Electronics Engineering f. Electronics and Telecommunication Engineering g. Civil Engineering h. Master of Computer Application i. M.Tech-Computer Science and Engineering
	iii. Status of Accreditation of the Courses	a. Electronics and Communication Engineering accredited till 30.06.2025 b. Computer Science and Engineering accredited till 30.06.2025 c. Information Science and Engineering accredited till 30.06.2027




		d. Mechanical Engineering accredited till 30.06.2025 e. Electrical and Electronics Engineering accredited till 30.06.2025 f. Electronics and Telecommunication Engineering accredited till 30.06.2025 g. Civil Engineering accredited till 30.06.2026 h. Master of Computer Application accredited till 30.06.2025
	iv. Total number of Course	9
	v. For each Programme the following details are to be given a. Name b. Number of seats c. Duration d. Cut off marks / rank of admission during the last years	Enclosed Annexure - 10
	vi. Fee (as approved by the state government)	
6	vii. Name and duration of programme(s) having Twinning and Collaboration with Foreign University(s) and being run in the same campus along with status of their AICTE approval. If there is Foreign Collaboration, give the following details: a. Details of the Foreign University, if any b. Name of the University c. Address d. Website e. Accreditation status of the University in its Home Country f. Ranking of the University in the Home country g. Whether the degree offered is equivalent to an Indian Degree? If yes, the name of the agency which has approved equivalence. If no, implications for students in terms of pursuit of higher studies in India and abroad and job both within and outside the country	Not applicable
	viii. Nature of Collaboration	Not applicable
	ix. Complete details of payment a student has to make to get the full benefit of Collaboration	Not applicable
	x. For each Programme Collaborated provide the following:	Not applicable
	xi. Programme Focus	Not applicable
	xii. Number of seats	Not applicable
	xiii. Admission Procedure	Not applicable
	xiv. Fee (as approved by the state government)	Not applicable

	xv. Whether the Collaboration Programme is approved by AICTE? If no whether the	Not applicable
7.	Faculty <ul style="list-style-type: none"> <li>i. Course/Branch wise list faculty members:</li> <li>ii. Permanent faculty</li> <li>iii. Adjunct faculty</li> <li>iv. Permanent faculty: Student ratio</li> </ul>	Enclosed Annexure - 11
8.	Profile of Vice Chancellor / Director / Principal / Faculty <ul style="list-style-type: none"> <li>i. Name</li> <li>ii. Date of Birth</li> <li>iii. Unique id</li> <li>iv. Education Qualifications</li> <li>v. Work Experience</li> <li>vi. Teaching/Research/Industry/Others</li> <li>vii. Area of Specialization</li> <li>viii. Courses taught at Diploma/ Post Diploma Undergraduate/ Post Graduate/ Post Graduate Diploma Level</li> <li>ix. Research guidance (No. of Student)</li> <li>x. No. of Papers published in National/ International Journals/ Conferences</li> <li>xi. Master (Completed / Ongoing)</li> <li>xii. Ph.D (Completed / Ongoing)</li> <li>xiii. Projects carried out</li> <li>xiv. Patents (Filed &amp; Granted)</li> <li>xv. Technology Transfer</li> <li>xvi. Research Publications (No. of papers published in National / International Journals/Conferences)</li> <li>xvii. No. of Books published with details (Name of the book, publisher with ISBN, year of publication, etc..)</li> </ul>	Enclosed Annexure - 12
9.	Fee <ul style="list-style-type: none"> <li>i. No. of fee waivers granted with amount and name of students.</li> <li>ii. Number of scholarships offered by the Institution, duration and amount</li> </ul>	Enclosed Annexure - 13
10.	Admission <ul style="list-style-type: none"> <li>i. Number of seats sanctioned with the year of approval.</li> <li>ii. Number of students admitted under various categories each year in the last three years.</li> <li>iii. Number of applications received during the last year for admission under Management quota and number admitted</li> </ul>	Enclosed Annexure - 14 Enclosed Annexure - 15 Enclosed Annexure - 16

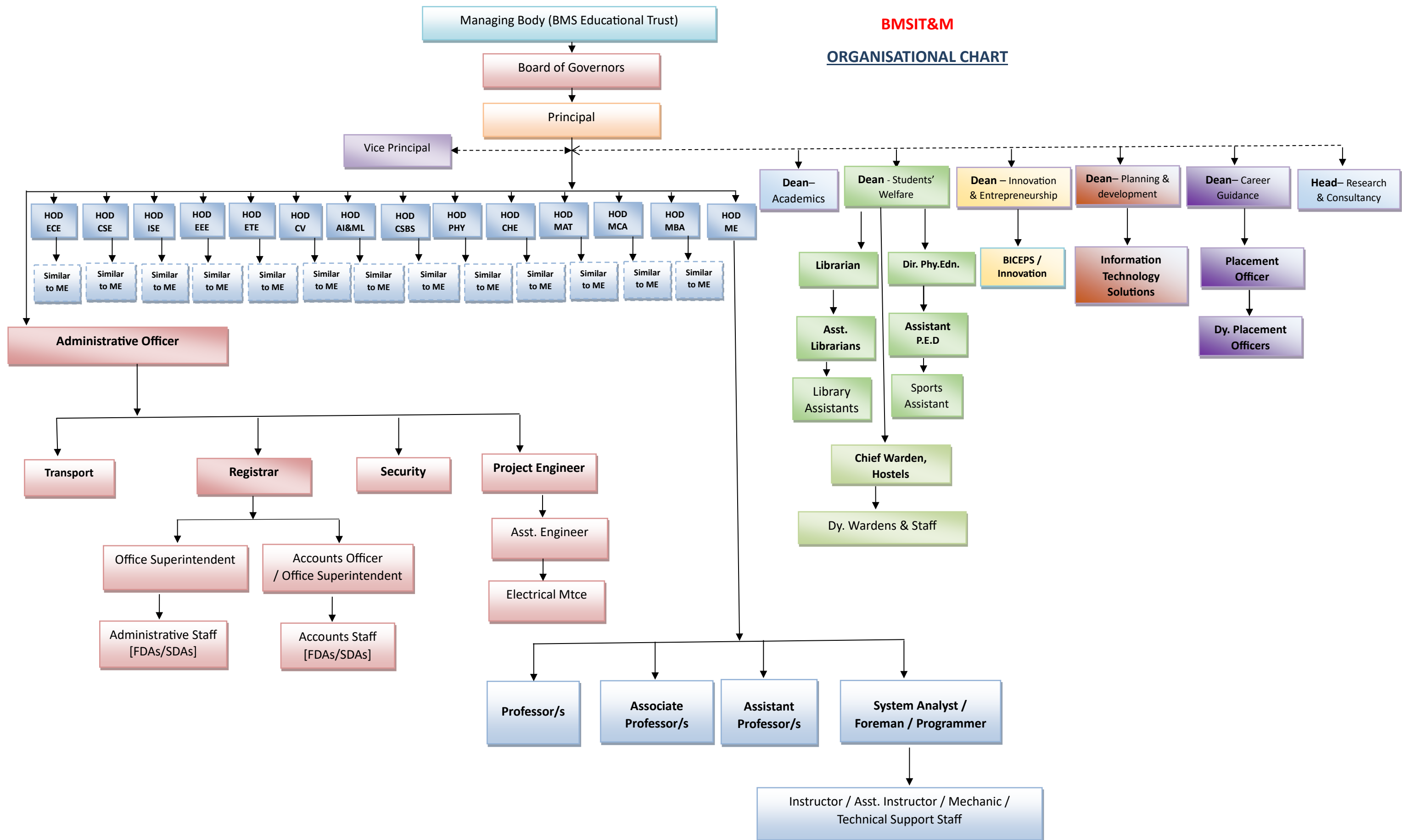
11.	<p>Admission procedure</p> <p>i. Mention the admission test being followed, name and address of the Test Agency and its URL (website)</p>	<p>Karnataka Examination Authority [K E A]: The Government of Karnataka established Common Entrance Test Cell in the year 1994 for conducting of entrance test and determining the eligibility / merit, for admission to the first year or first semester of full time professional courses for Government share [i.e., 45%] of seats in Medical, Dental, Homeopathy, Ayush &amp; Engineering etc. As per Go No.ED.212 TEC 2006 dated 20-12-2006, the Common Entrance Test Cell has been converted into an autonomous body registered under Societies Registration Act 1960 called "Karnataka Examinations <b>Authority (KEA)". The KEA will be conducting</b> Common Entrance Test for II PUC / 12th standard students every year. After the CET examination, it will announce rank list / merit list. KEA will publish seat matrix given by the Government in their WEBPORTAL. Students will be given choices to select their option [i.e., Branches and Colleges] in 03 rounds usually. On the basis of choice entry made by the students, the Karnataka Examination Authority will allot Medical / Dental / Ayush &amp; Engineering Courses Seats in 3 rounds usually. Sometimes, it will conduct one more round called casual vacancy round with the permission of Government of Karnataka. Accordingly, students will come to respective colleges with allotment letters issued by the KEA for admission to first year BE full time professional courses of 4 years duration. College authorities we verify the original documents of the students who approach the college with allotment letter issued by KEA. After verification of the documents, we will collect 2 sets of all the documents and make necessary entries in the admission register and issue the college ID Card.</p> <p>[COMED-K]: A consortium of Medical, Engineering and Dental College of Karnataka or just COMED-K is an autonomous institution that conducts state level under graduate entrance test for Comed-k Share [.i.e. 30%] of seats every year for the students to get admission in engineering colleges in Karnataka. After the test, Comed-K will announce the rank list / merit list. . Students will be given choices to select their option [i.e., Branches and Colleges] in 03 rounds usually. On the basis of choice entry made by the students, the Comed-K will allot Engineering Courses Seats in 3 rounds.</p>
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		Accordingly, students will come to respective colleges with allotment letters issued by the Comed-K for admission to first year BE full time professional courses of 4 years duration. College authorities verify the original documents of the students who approach the college with allotment letter issued by COMED-K. After verification of the documents, we will collect 2 sets of all the documents and make necessary entries in the admission register and issue the college ID Card.
	ii. Number of seats allotted to different Test Qualified candidate separately (AIEEE/ CET (state conducted test/ University tests/ CMAT)/ Association conducted test etc.)	2024-25 CET - 748 CET-SNQ - 84 COMED-K - 379 MGNT - 550 PIO - 86 AICTE J&K PMSSS - 04
	iii. Calendar for admission against Management quota seats:	
	iv. Last date of request for applications	
	v. Last date of submission of applications	
	vi. Dates for announcing final results	
	vii. Release of admission list (main list and waiting list shall be announced on the same day)	
	viii. Date of acceptance by the candidate (time given shall in no case be less than 15 days)	
	ix. Last date for closing of admission & Starting of the Academic session	As per VTU norms Enclosed Annexure - 17
	x. The waiting list shall be activated only on the expiry of date of main list	-
	xi. The policy of refund of the fee, in case of withdrawal, shall be clearly notified	As per VTU norms
12.	Criteria and weightages for admission i. Describe each criterion with its respective weightages i.e Admission Test, marks in qualifying examination etc. ii. Mention the minimum level of acceptance if any iii. Mention the cut-off levels of percentage and percentile score of the candidates in the admission test for the last three years. iv. Display marks scored in Test etc. and in aggregate for all candidates who were admitted	As per CET & Government Norms  Not less than 45% for GM and Not less than 40% for SC, ST, Cat-1, 2A, 2B, 3A & 3B (Karnataka State only) Mentioned Annexure - 10  Mentioned Annexure - 10
13.	List of Applicants List of candidates whose applications have been received along with percentile/percentage score for each of the qualifying examination in separate categories for open seats. List of candidate who have applied along with percentage and percentile score for Management quota seats (merit wise)	Mentioned Annexure - 16

14.	Results of admission under Management seats/ vacant seats i. Composition of selection team for admission under Management ii. List of candidate who have been offered admission iii. Waiting list of the candidate in order of merit to be operative from the last date of joining of the first list candidate	Mentioned Annexure - 16
15.	Information of infrastructure and other resources available i. Number of Class Rooms and size of each	 Enclosed Annexure - 18
	ii. Number of Tutorial rooms and size of each	
	iii. Number of Laboratories and size of each	
	iv. Number of Computer centres with capacity of each	
	v. Central Examination facility, Number of rooms and capacity of each	
	vi. Online examination facility (Number of Nodes, Internet band width etc.)	
	vii. Barrier Free Built Environment for disabled and elderly persons	Enclosed Annexure - 19
	viii. Fire and Safety Certificate	Enclosed Annexure - 20
	ix. Hostel facilities	<a href="https://bmsit.ac.in/hostel">https://bmsit.ac.in/hostel</a>
	x. Number of Library books/ebooks/Titles / Journals available (Programme wise)	Enclosed Annexure - 21
	xi. List of online National/International Journals subscribed.	Enclosed Annexure - 22
	xii. National Digital Library (NDL) subscription details	Enclosed Annexure - 23
	xiii. List of Major Equipment/Facilities in each Laboratory/Workshop	Enclosed Annexure - 24
	xiv. List of experimental setup in each laboratory / workshop	
	xv. Innovation Cell	Enclosed Annexure - 25
	xvi. Social media Cell	Enclosed Annexure - 26
	xvii. Compliance of the Academic Bank of Credit (ABC), applicable to PGCM/PGDM Institutions and University Departments	-
	xviii. To upload the respective short video (1-2 min) of Infrastructure and facilities available w.r.t the courses in the website	<a href="https://www.youtube.com/@bmsitmedia8115">https://www.youtube.com/@bmsitmedia8115</a>
	xix. Games and Sports Facilities	Enclosed Annexure - 27
	xx. Teaching Learning Process	Enclosed Annexure - 28

	xxi. For each Post Graduate Courses give the following	Enclosed Annexure - 29
	xxii. Title of the Course	
	xxiii. Laboratory facilities exclusive to the Post Graduate Course	
16.	Enrollment and placement details of students in the last 3 years	<a href="https://bmsit.ac.in/training-and-placement">https://bmsit.ac.in/training-and-placement</a>
17.	List of Research Projects / Consultancy Works	Enclosed Annexure - 30
18	MoUs with Industries	Enclosed Annexure - 31

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18	MoUs with Industries	Enclosed Annexure - 31





# BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

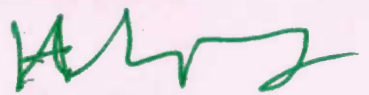
Avalahalli, Bangalore-560064

## STUDENT GRIEVANCE REDRESSAL COMMITTEE

Date: 20.9.2024

As per the Circular from VTU, (Ref: VTU/BGM/Aca/SA/Cirs/2023-24/822 Dated: 16.05.2023) the Student Grievance Redressal Committee (SGRC) has been constituted and the composition is as follows:

S.No.	Name of the Faculty Member	Role
1	Dr. Thippeswamy G, Professor and HoD, CSE	Chairperson
2	Dr. Jojoy Joseph Idicula, Professor, Mathematics	Member
3	Dr. Ambika, Professor, ECE and Dean Student Welfare	Member
4	Dr. Saneesh Cleatus, Associate Professor, ECE	Member
5	Dr. Lokesh, Associate Professor, Physics	Member
6	Dr. Bhanuprakash R, Assistant Professor, ETE	Member
7	Mrs. Shobha R, Assistant Professor, Civil Engineering	Member
8	Student Representative	Special Invitee

  
Dr. Saneesh Cleatus  
Principal  
BMS Inst. of Tech. & Mgmt.  
Doddaballapur Main Road  
Avalahalli, Yelahanka, B'lore-64



ವಿಶ್ವವಿದ್ಯಾರಣ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

"ವಿಜಯಲಕ್ಷ್ಮೀನಿರ್ಮಲಾ" ರಾಜ್ಯದಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ

**Visvesvaraya Technological University**

(State University of Government of Karnataka Established as per the VTU Act, 1994)

"Jnana Sangama" Belagavi-590018, Karnataka, India



**Prof. B. E. Rangaswamy, Ph.D.**  
**Registrar**

Phone No: (0831) – 2498100  
Fax No. : (0831) - 2405467

Ref. No.: VTU/Reg/PS/2024-25/ 6338

Date: 14 FEB 2024

Circular

Sub: UGC (Redressal of Grievances of Students) Regulations, 2023

Ref: Letter No F.01-13/2022 (CPP-II) (C-139991) dated 13-02-2024  
from UGC, New Delhi through email dated 13-02-2024

A letter under reference received from UGC, New Delhi regarding "UGC (Redressal of Grievances of Students) Regulations, 2023" is attached herewith for your kind perusal.

As per the UGC direction, you are requested to take necessary steps to make the students aware about the implementation of the UGC Student Grievances Regulations, 2023 in your Institution / College. This can include –

- 1) Placing banners / boards in prominent locations throughout the campus, as well as on the campuses of affiliated colleges.
- 2) Publishing information on the websites / Bulletin of Information.
- 3) Any other measures that your deem appropriate.

Further you are also requested to organize at least one meeting of the Ombudsperson (s) every six months at the beginning of the semester with the students.

Encl: as above

To

*R. Rangaswamy*  
Registrar

- 1) The Principals of all Engineering Colleges (Constituent, Affiliated and Autonomous) under VTU.
- 2) The Chairpersons/Programme Coordinators of all VTU PG Centres at Muddenhalli, Belagavi, Mysuru and Kalaburagi Regions.

Copy to:

- 1) The Regional Director (I/c), VTU Regional Offices at Bengaluru, Belagavi, Kalaburagi & Mysuru.
- 2) The Secretary to VC, VTU, Belagavi.

*Circulation to all colleges*

*Regional Director*  
VTU, RO, Bengaluru



**Fwd: UGC letter regarding : UGC (Redressal of Grievances of Students) Regulations, 2023**

"Website Division" <website-ugc@gov.in>

February 13, 2024 2:33 PM

To: registrar@nls.ac.in, registrar.nrupathungauniversity@gmail.com, "REGISTRAR, RGUHS, KARNATAKA" <registrar@rguhs.ac.in>, rcuregistrar@gmail.com, registrar.tul@gmail.com, "registrar BANGALORE" <registrar@uasbangalore.edu.in>, registrar@uasd.in, registrar@uhsbagalkot.edu.in, registrar@vtu.ac.in, registrarvtubelagavi@gmail.com, registrarps@vskub.ac.in, reg@uoc.ac.in, registrar@cusat.ac.in, registrar@kannuruniv.ac.in, registrar@kau.in, regrku@gmail.com, registrar@duk.ac.in, registrar@kufos.ac.in, registrar@kuhs.ac.in, registrar@kvasu.ac.in, registrar@nuals.ac.in, registrar@temu.ac.in, "Nawang Tundup" <ladakh-university@jk.gov.in>, Info@universityofladakh.org.in, abvhvbpl@gmail.com, regapsu@gmail.com, registrar.davv@dauniv.ac.in, "Anil Sharma" <registrar.davv@mp.gov.in>, reg@mpdnl.ac.in, brauss2020@gmail.com, registraroffice.mpbou@gmail.com, mchhatrasaluniversity@gmail.com, mgcgv@rediffmail.com, registrar.mcu@gmail.com, registrar.ndvsujbp@gmail.com, registrar@nliu.ac.in, binaykumarsingh@yahoo.com, registrar.music2008@gmail.com, "U.S. Salsekar" <registrar.cuc@mp.gov.in>, registrar.rgpv@gmail.com, ooregistrar@rgtu.net, egov@rgtu.net, registrar@subis.edu.in, registrar.vikram@gmail.com, registrar@bamu.net

Respected Madam/Sir

Please find attached herewith the UGC letter regarding the "**UGC (Redressal of Grievances of Students) Regulations, 2023**" for your kind perusal, please

With kind regards,  
UGC-New Delhi



आचार्य मनिष र. जोशी  
सचिव

**Prof. Manish R. Joshi**  
Secretary



सत्यमेव जयते



आज़ादी का  
अमृत महोत्सव

विश्वविद्यालय अनुदान आयोग  
**University Grants Commission**  
(शिक्षा मंत्रालय, भारत सरकार)  
(Ministry of Education, Govt. of India)

**By E-mail**

**No.F.1-13/2022 (CPP-II) (C-139991)**

**13 February 2024 / 24 माघ 1945**

**Subject: UGC (Redressal of Grievances of Students) Regulations, 2023**

Dear Madam/Sir,

The Hon'ble Chairman of UGC discussed the implementation of above Regulations with the Ombudspersons of the Universities in a virtual meeting on 5 February 2024. The meeting was live-streamed on UGC's social media platforms such as X, YouTube, etc.

During the discussion, it emerged that there is a need to increase the awareness among students about the provisions made by universities for the implementation of UGC Student Grievances Regulations, 2023. Additionally, it was suggested that there should be periodic meetings of the Vice-Chancellor and the Ombudsperson(s) to review the implementation of the Regulations, 2023.

In view of the above, you are requested to take necessary steps to make the students aware about the implementation of the UGC Student Grievances Regulations, 2023 in your university. This can include:

- placing banners/boards in prominent locations throughout the campus, as well as on the campuses of affiliated colleges;
- publishing information on the websites/Bulletin of Information;
- any other measures that you deem appropriate.

You are also requested to organize at least one meeting of the Ombudsperson(s) every six months at the beginning of the semester with the students.

Your continued cooperation is requested as it is vital to ensure the successful implementation of the UGC Regulations (Redressal of Grievances of Students) in 2023 to create a fair and responsive academic environment.

With regards,

Yours sincerely,

(Manish Joshi)

To

**The Vice-Chancellors of the Universities**





# ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

ವಿಶ್ವವಿದ್ಯಾಲಯ ೧೯೯೪ ರ ಅಡಿಯಲ್ಲಿ, ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

State University of Government of Karnataka Established as per the VTU Act, 1994 "JnanaSangama" Belagavi-590018, Karnataka, India

**Dr. B. E. Rangaswamy, Ph.D**

Phone: (0831) 2498100

REGISTRAR

Fax: (0831) 2405467

REF: VTU/BGM/Aca/SA/Cirs/2023-24/ 4837

DATE:

12 DEC 2023

### NOTIFICATION

**Sub: Appointment of OMBUDSPERSON of VTU, Belagavi – reg..**

**Ref: 1. UGC, New Delhi's Notification dt: 11-4-2023 [UGC  
(Redressal of Grievances of Students) Regulations , 2023]  
2. Hon'ble Vice Chancellor's approval dated 05-12-2023**

With reference to the above subject and reference and in compliance to the UGC (Redressal of Grievances of Students) Regulations, 2023 **Prof. C K Subbaraya** Registrar, Adhichunchanagiri University, B G Nagar, Nagamangala Pin : 571 448, **is appointed as VTU's Ombudsperson for redressal of grievances of students.**

This is for information.

BY ORDER,

*[Signature]*  
REGISTRAR

To:

- 1 The Principals of all Engineering Colleges(Affiliated, Autonomous, Constituent) under ambit of VTU, Belagavi
- 2 The Chairpersons and Programme Coordinators of VTU Departments

Copy to:

- 1 The Registrar (Evaluation), VTU Belgaum
- 2 The Regional Director(I/C) of VTU Regional Offices for information and needful.
- 3 All the Concerned Special Officers and Case-workers of Academic Section, VTU, Belagavi.
- 4 The Director(I/c), ITISMU, VTU, Belagavi- to upload on VTU website
- 5 The Secretary to VC, VTU Belgaum
- 6 The PS to Registrar, VTU, Belagavi



ಬಿ.ಎಂ.ಎಸ್. ತಾಂತ್ರಿಕ ಮತ್ತು ವ್ಯವಸ್ಥಾಪನಾ ಮಹಾವಿದ್ಯಾಲಯ  
( ವಿ.ಟಿ.ಯು. ಅಡಿಯಲ್ಲಿನ ಸ್ವಾಯತ್ತ ಸಂಸ್ಥೆ )  
**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
(Autonomous Under VTU)

**Anti-Ragging Committees**

BMSIT&M/DSW/2024-25/ 3811

Date: 05-12-2024

**Prohibition of Ragging in College**

With reference to UGC letter Ref. No. F- 1-15/2009(arc) pt-III dated 8-8-2016 and VTU letter Ref. No. VTU/PS/2017-18/1771 dated 09-07-2017, the following committees are constituted for the prohibition of ragging in the campus.

**Anti-Ragging Review Committee**

Sl. No.	Committee Members	Email id	Contact number
1)	Dr. Sanjay H A, Principal	principal@bmsit.in	9342560303
2)	Dr. Anil G N, Vice Principal	viceprincipal@bmsit.in	9449976253
3)	Dr. Raju Hajare, Chief Warden	rajuharjare@bmsit.in	9972700277
4)	Mr. Devendra Kumar, Administrative Officer	ao@bmsit.in	9845250847
5)	Dr. Jagannatha K B, Deputy Warden	jagan@bmsit.in	9591399663
6)	Dr. Daruka Prasad B, Deputy Warden	darukap@bmsit.in	9535100437
7)	Dr. Asha K, Deputy Warden Girls Hostel	ashak@bmsit.in	7259126108
8)	Mr. T N Praveen, I/C of Day Scholars	tnpmech@bmsit.in	8105551352
9)	Sub inspector of police		Rajanukunte Police station

**Anti-Ragging Monitoring Committee**

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| 1) Dr. Ambika R                   | - Dear Student Welfare,          |
| 2) Dr. Raju Hajare,               | - Chief Warden                   |
| 3) Dr. Jagannatha K B             | - Deputy Warden                  |
| 4) Dr. Daruka Prasad              | - Deputy Warden                  |
| 5) Dr. Asha K                     | - Deputy Warden (Ladies Hostel)  |
| 6) Mr. T.N. Praveen Kumar         | - Associate Professor, ME        |
| 7) Mr. Sriganesh                  | - Assistant Professor, ME        |
| 8) Dr. Swetha G A                 | - Assistant Professor, Chemistry |
| 9) Dr. Ashwini K R                | - Assistant Professor, Physics   |
| 10) Ms. Shilpa                    | - Assistant Professor, EEE       |
| 11) Students Representatives..... |                                  |

Anti-ragging nodal officer: Dr. Anil G N, Vice Principal (As per AICTE)

**Anti- Ragging Squad Committee:** Faculty members and technical staff members assigned by the principal. (List will be circulated)

**PRINCIPAL**





# ಬಿ.ಎಂ.ಎಸ್. ತಾಂತ್ರಿಕ ಮತ್ತು ವ್ಯವಸ್ಥಾಪನಾ ಮಹಾವಿದ್ಯಾಲಯ BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

(An Autonomous Institution Affiliated to Visvesvaraya Technological University, Karnataka)  
All Eligible UG & PG Programmes Accredited by NBA | NAAC Accredited with 'A' Grade  
Approved by UGC / AICTE / Govt. of Karnataka

## ONLINE GRIEVANCE REDRESSAL MECHANISM

Online Grievance Redressal System is implemented through the ERP Software. The students & staff members will have access to use the ERP software. The link of ERP Software is available under staff or student login of <https://bmsit.ac.in>



ಬಿ.ಎಂ.ಎಸ್. ತಾಂತ್ರಿಕ ಮತ್ತು ವ್ಯವಸ್ಥಾಪನಾ ಮಹಾವಿದ್ಯಾಲಯ  
BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
(Autonomous Institution Under VTU)

STAFF | STUDENT | CAREERS | CONTACT  
LOGIN LOGIN

QUICK LINKS ▼

ABOUT ADMISSIONS ACADEMICS DEPARTMENTS RESEARCH & CONSULTANCY FACILITIES CAMPUS LIFE PLACEMENT ACCREDITATION

Cyber Security Expert Talk | Hostel Fees | Circulars | S X



Upon login into the ERP software the web page will be displayed for the submission of any grievance under various categories. The screenshot of the same is shown below.

BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

HOME STUDENT GRIEVANCE COUNSELLING USER MANUAL LOGOUT

Saneesh Cleatus T

REPORT ISSUE TO CONTINEO HELPDESK

### Staff Grievance

Name of the staff

Saneesh Cleatus T

User name

saneesh@bmsit.in

Grievance Type

Select Grievance Type

Select Grievance Type

Academics

Non academics

General

SAVE





# ಬಿ.ಎಂ.ಎಸ್. ತಾಂತ್ರಿಕ ಮತ್ತು ವ್ಯವಸ್ಥಾಪನಾ ಮಹಾವಿದ್ಯಾಲಯ BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

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Different types of Grievances related to Academic matters, Non academic, general grievances can be submitted through this portal. Once the Grievance is submitted, notification will be sent to Principal, Vice Principal and Chairman of Grievance Redressal Cell. The same will also be available in their ERP login. Grievance Redressal Cell will follow the standard procedure to address the grievance.

## List of Grievance Redressal Committee Members:

Sl. No.	Name of the Faculty	Designation
1.	Dr. Thippeswamy G, Professor and HoD, CSE	Chairperson
2.	Dr. Jojy Joseph Idicula, Professor, Mathematics	Member
3.	Dr. Ambika, Professor, ECE and Dean Student Welfare	Member
4.	Dr. Saneesh Cleatus, Associate Professor, ECE	Member
5.	Dr. Lokesh, Associate Professor, Physics	Member
6.	Dr. Bhanuprakash R, Assistant Professor, ETE	Member
7.	Mrs. Shobha R, Assistant Professor, Civil Engineering	Member
8.	Mr. Mathew Paul, Student Representative	Special Invitee

PRINCIPAL

BMS Inst.of Tech.& Mgmt.  
Doddaballapur Main Road  
Avalahalli, Yelahanka, B'lore-64



# BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

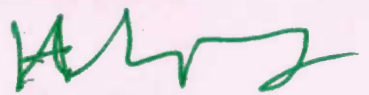
Avalahalli, Bangalore-560064

## STUDENT GRIEVANCE REDRESSAL COMMITTEE

Date: 20.9.2024

As per the Circular from VTU, (Ref: VTU/BGM/Aca/SA/Cirs/2023-24/822 Dated: 16.05.2023) the Student Grievance Redressal Committee (SGRC) has been constituted and the composition is as follows:

S.No.	Name of the Faculty Member	Role
1	Dr. Thippeswamy G, Professor and HoD, CSE	Chairperson
2	Dr. Jojoy Joseph Idicula, Professor, Mathematics	Member
3	Dr. Ambika, Professor, ECE and Dean Student Welfare	Member
4	Dr. Saneesh Cleatus, Associate Professor, ECE	Member
5	Dr. Lokesh, Associate Professor, Physics	Member
6	Dr. Bhanuprakash R, Assistant Professor, ETE	Member
7	Mrs. Shobha R, Assistant Professor, Civil Engineering	Member
8	Student Representative	Special Invitee

  
Dr. Saneesh Cleatus  
Principal  
BMS Inst. of Tech. & Mgmt.  
Doddaballapur Main Road  
Avalahalli, Yelahanka, B'lore-64



ವಿಶ್ವವಿದ್ಯಾರಣ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

"ವಿಜಯಲಕ್ಷ್ಮೀನಿರ್ಮಲಾ" ರಾಜ್ಯದಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ

**Visvesvaraya Technological University**

(State University of Government of Karnataka Established as per the VTU Act, 1994)

"Jnana Sangama" Belagavi-590018, Karnataka, India



**Prof. B. E. Rangaswamy, Ph.D.**  
**Registrar**

Phone No: (0831) – 2498100  
Fax No. : (0831) - 2405467

Ref. No.: VTU/Reg/PS/2024-25/ 6338

Date: 14 FEB 2024

Circular

Sub: UGC (Redressal of Grievances of Students) Regulations, 2023

Ref: Letter No F.01-13/2022 (CPP-II) (C-139991) dated 13-02-2024  
from UGC, New Delhi through email dated 13-02-2024

A letter under reference received from UGC, New Delhi regarding "UGC (Redressal of Grievances of Students) Regulations, 2023" is attached herewith for your kind perusal.

As per the UGC direction, you are requested to take necessary steps to make the students aware about the implementation of the UGC Student Grievances Regulations, 2023 in your Institution / College. This can include –

- 1) Placing banners / boards in prominent locations throughout the campus, as well as on the campuses of affiliated colleges.
- 2) Publishing information on the websites / Bulletin of Information.
- 3) Any other measures that your deem appropriate.

Further you are also requested to organize at least one meeting of the Ombudsperson (s) every six months at the beginning of the semester with the students.

Encl: as above

To

*R. Rangaswamy*  
Registrar

- 1) The Principals of all Engineering Colleges (Constituent, Affiliated and Autonomous) under VTU.
- 2) The Chairpersons/Programme Coordinators of all VTU PG Centres at Muddenhalli, Belagavi, Mysuru and Kalaburagi Regions.

Copy to:

- 1) The Regional Director (I/c), VTU Regional Offices at Bengaluru, Belagavi, Kalaburagi & Mysuru.
- 2) The Secretary to VC, VTU, Belagavi.

*Circulation to all colleges*  
*Regional Director*  
*VTU, RO, Bengaluru*



**Fwd: UGC letter regarding : UGC (Redressal of Grievances of Students) Regulations, 2023**

"Website Division" <website-ugc@gov.in>

February 13, 2024 2:33 PM

To: registrar@nls.ac.in, registrar.nrupathungauniversity@gmail.com, "REGISTRAR, RGUHS, KARNATAKA" <registrar@rguhs.ac.in>, rcuregistrar@gmail.com, registrar.tul@gmail.com, "registrar BANGALORE" <registrar@uasbangalore.edu.in>, registrar@uasd.in, registrar@uhsbagalkot.edu.in, registrar@vtu.ac.in, registrarvtubelagavi@gmail.com, registrarps@vskub.ac.in, reg@uoc.ac.in, registrar@cusat.ac.in, registrar@kannuruniv.ac.in, registrar@kau.in, regrku@gmail.com, registrar@duk.ac.in, registrar@kufos.ac.in, registrar@kuhs.ac.in, registrar@kvasu.ac.in, registrar@nuals.ac.in, registrar@temu.ac.in, "Nawang Tundup" <ladakh-university@jk.gov.in>, Info@universityofladakh.org.in, abvhvbpl@gmail.com, regapsu@gmail.com, registrar.davv@dauniv.ac.in, "Anil Sharma" <registrar.davv@mp.gov.in>, reg@mpdnl.ac.in, brauss2020@gmail.com, registraroffice.mpbou@gmail.com, mchhatrasaluniversity@gmail.com, mgcgv@rediffmail.com, registrar.mcu@gmail.com, registrar.ndvsujbp@gmail.com, registrar@nliu.ac.in, binaykumarsingh@yahoo.com, registrar.music2008@gmail.com, "U.S. Salsekar" <registrar.cuc@mp.gov.in>, registrar.rgpv@gmail.com, ooregistrar@rgtu.net, egov@rgtu.net, registrar@subis.edu.in, registrar.vikram@gmail.com, registrar@bamu.net

Respected Madam/Sir

Please find attached herewith the UGC letter regarding the "**UGC (Redressal of Grievances of Students) Regulations, 2023**" for your kind perusal, please

With kind regards,  
UGC-New Delhi



आचार्य मनिष र. जोशी  
सचिव

**Prof. Manish R. Joshi**  
Secretary



सत्यमेव जयते



आज़ादी का  
अमृत महोत्सव

विश्वविद्यालय अनुदान आयोग  
**University Grants Commission**  
(शिक्षा मंत्रालय, भारत सरकार)  
(Ministry of Education, Govt. of India)

**By E-mail**

**No.F.1-13/2022 (CPP-II) (C-139991)**

**13 February 2024 / 24 माघ 1945**

**Subject: UGC (Redressal of Grievances of Students) Regulations, 2023**

Dear Madam/Sir,

The Hon'ble Chairman of UGC discussed the implementation of above Regulations with the Ombudspersons of the Universities in a virtual meeting on 5 February 2024. The meeting was live-streamed on UGC's social media platforms such as X, YouTube, etc.

During the discussion, it emerged that there is a need to increase the awareness among students about the provisions made by universities for the implementation of UGC Student Grievances Regulations, 2023. Additionally, it was suggested that there should be periodic meetings of the Vice-Chancellor and the Ombudsperson(s) to review the implementation of the Regulations, 2023.

In view of the above, you are requested to take necessary steps to make the students aware about the implementation of the UGC Student Grievances Regulations, 2023 in your university. This can include:

- placing banners/boards in prominent locations throughout the campus, as well as on the campuses of affiliated colleges;
- publishing information on the websites/Bulletin of Information;
- any other measures that you deem appropriate.

You are also requested to organize at least one meeting of the Ombudsperson(s) every six months at the beginning of the semester with the students.

Your continued cooperation is requested as it is vital to ensure the successful implementation of the UGC Regulations (Redressal of Grievances of Students) in 2023 to create a fair and responsive academic environment.

With regards,

Yours sincerely,

(Manish Joshi)

To

**The Vice-Chancellors of the Universities**





# ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

ವಿಜಯ ಅಧಿನಿಯಮ ೧೯೯೪ ರ ಅಡಿಯಲ್ಲಿ, ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

State University of Government of Karnataka Established as per the VTU Act, 1994 "JnanaSangama" Belagavi-590018, Karnataka, India

**Dr. B. E. Rangaswamy, Ph.D**

Phone: (0831) 2498100

REGISTRAR

Fax: (0831) 2405467

REF: VTU/BGM/Aca/SA/Cirs/2023-24/ 4837

DATE:

12 DEC 2023

### NOTIFICATION

**Sub: Appointment of OMBUDSPERSON of VTU, Belagavi – reg..**

**Ref: 1. UGC, New Delhi's Notification dt: 11-4-2023 [UGC  
(Redressal of Grievances of Students) Regulations , 2023]  
2. Hon'ble Vice Chancellor's approval dated 05-12-2023**

With reference to the above subject and reference and in compliance to the UGC (Redressal of Grievances of Students) Regulations, 2023 **Prof. C K Subbaraya** Registrar, Adhichunchanagiri University, B G Nagar, Nagamangala Pin : 571 448, **is appointed as VTU's Ombudsperson for redressal of grievances of students.**

This is for information.

BY ORDER,

*[Signature]*  
REGISTRAR

To:

- 1 The Principals of all Engineering Colleges(Affiliated, Autonomous, Constituent) under ambit of VTU, Belagavi
- 2 The Chairpersons and Programme Coordinators of VTU Departments

Copy to:

- 1 The Registrar (Evaluation), VTU Belgaum
- 2 The Regional Director(I/C) of VTU Regional Offices for information and needful.
- 3 All the Concerned Special Officers and Case-workers of Academic Section, VTU, Belagavi.
- 4 The Director(I/c), ITISMU, VTU, Belagavi- to upload on VTU website
- 5 The Secretary to VC, VTU Belgaum
- 6 The PS to Registrar, VTU, Belagavi



# ಬಿ.ಎಂ.ಎಸ್. ತಾಂತ್ರಿಕ ಮತ್ತು ವ್ಯವಸ್ಥಾಪನಾ ಮಹಾವಿದ್ಯಾಲಯ BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

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Approved by UGC / AICTE / Govt. of Karnataka

Ref: BMSIT&M/2024-25/2673

Date: 14.11.2024

To,  
The Registrar,  
Visvesvaraya Technological University,  
"Jnana Sangama"  
Belagavi – 590018

Sir,


Sub: Constitution of College Internal Complaints Committee (CICC) w.r.t. Prevention, Prohibition, and redressal of Sexual Harassment – reg.

Ref: Your Circular No. VTU/BGM/WC/ICC/2021-22/6370/1 dated 17.03.2023

With reference to the above, I would like to inform you that the College Internal Complaint Committee (CICC) has been reconstituted at our Institute. The details of the CICC members is forwarded herewith for your kind information.

Sl No.	Name & Designation	Position in CICC	Gender	Mobile No. & Email ID
1	Dr Geeta Patil, Associate Professor, Dept. of ISE	Chairperson	Female	9764923424 <a href="mailto:geetapatil@bmsit.in">geetapatil@bmsit.in</a>
2	Sri G H Vasappa, Registrar, BMSIT&M	Member	Male	9972527844 <a href="mailto:registrar@bmsit.in">registrar@bmsit.in</a>
3	Mrs Shilpa G, Assistant Professor, HoD of EEE	Faculty Member	Female	9986299412 <a href="mailto:shilpag@bmsit.in">shilpag@bmsit.in</a>
4	Smt B J Tejaswini, Assistant Professor & HoD of HSS	Faculty Member	Female	9945545014 <a href="mailto:bitmech@bmsit.in">bitmech@bmsit.in</a>
5	Smt. Shakuntala J, SDA, Admin Office	Member (Non-teaching Employee)	Female	7760493881 <a href="mailto:shakuntalaj@bmsit.in">shakuntalaj@bmsit.in</a>
6	Ms Shailavathi R, Library Assistant	Member (Non-teaching Employee)	Female	8880956777 <a href="mailto:shailavishwanath@bmsit.in">shailavishwanath@bmsit.in</a>
7	Ms. Supriya Gouda	Student (1BY23IS227) 3 <sup>rd</sup> Sem-ISE	Female	8296076536, <a href="mailto:1by23is227@bmsit.in">1by23is227@bmsit.in</a>
8	Ms. A Vishaka	Student (1BY22EE002) 5 <sup>th</sup> Sem-EEE	Female	63643 11849 <a href="mailto:1by22ee002@bmsit.in">1by22ee002@bmsit.in</a>
9	Mr Amith Myshri R	Student (1BY23CV401) 5 <sup>th</sup> Sem-Civil	Male	8861436700 <a href="mailto:1by23cv401@bmsit.in">1by23cv401@bmsit.in</a>
10	Dr Brinda K Varma Advocate	Advocates & IPR Consultants, (POSH Expert)	Female	9480059559 <a href="mailto:brinda@aekamlegal.com">brinda@aekamlegal.com</a>

Thanking you,  
Yours faithfully,

  
Dr Sanjay H A  
Principal



## **College Internal Complaint Committee(CICC)**

The College Internal Complaint Committee (CICC) plays a crucial role in ensuring the well-being and safety of women on campus, in compliance with the Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013. The committee is committed to preventing discrimination and sexual harassment in the workplace, offering support, and providing a redressal mechanism for grievances. It aims to create a safe and inclusive environment by raising awareness through workshops, seminars, and notices. Additionally, it maintains strict confidentiality in handling complaints and recommends appropriate actions against perpetrators to the college management.

Through various awareness programs, the committee educates stakeholders, students, and staff on the policy framework and legal provisions that govern workplace behavior.

### **Key Events Conducted by the CICC:**

#### **1. Safe Campus Safe City (April 23, 2024):**

In collaboration with the NDLI Club and Red Dot, an NGO working towards gender and sexuality sensitization, the CICC organized an awareness session. Mr. Rajendra Prasad, a Red Dot volunteer, educated students on sexual harassment laws under the Indian Penal Code (IPC), the Prevention of Sexual Harassment (PoSH) Act, and the Protection of Children from Sexual Offences (POCSO) Act. He highlighted society's role in combating gender discrimination and sexual harassment. The session was attended by 120 students, providing them with valuable insights on how the CICC operates and offers redressal mechanisms for harassment cases.



#### **2. Personality Development and Menstrual Hygiene (January 12, 2024):**



This event focused on holistic well-being, addressing issues related to personality development and the importance of menstrual hygiene.



### 3. Sexual Harassment of Women at Workplace (December 15, 2023):

In association with the Women Empowerment Cell, the CICC conducted an awareness program on the PoSH Act, 2013. Led by Dr. Geeta Patil and Prof. Tejaswini B J, the program delved into legal frameworks such as the Vishaka Guidelines and the Me Too Movement, educating students on the procedures for handling harassment complaints in compliance with these laws.



### 4. Dealing with Sexual Harassment at the Workplace (October 26-27, 2023):

A Faculty Development Program (FDP) was attended by Dr. Geeta Patil, Prof. Tejaswini B. J., Prof. Madhu M C and Mrs. Shakuntala organized by BMS. , FDP was featuring presentations by experts like Dr. Brinda Adige and Dr. Anapoorna Ravichander, covering various topics related to sexual harassment, including the Vishaka Guidelines, PoSH Act, and organizational obligations. Other sessions focused on the submission of complaints, grievance redressal, and global best practices in workplace ethics. The FDP concluded with a session on relaxation



techniques through yoga, led by Mr. Subhash Hegde, which offered a holistic approach to managing workplace stress.



Through its multifaceted events, the CICC continues to foster a respectful and safe environment on campus, equipping individuals with the knowledge and tools necessary to prevent sexual harassment and ensure gender equality.

Dr. Geeta Amol Patil

Chairperson - CICC



**BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT**  
**YELAHANKA - BANGALORE - 560119**  
**SC/ST CELL**

**CIRCULAR**

**Ref: BMSIT&M/2024-25/2824**

**Date: 6/12/2024**

As per the directives from the principal, with the objective to bring awareness and opportunities available to SC/ST students by the state and central government, a meeting is scheduled on Thursday, 12<sup>th</sup> December, 2024. All the SC/ST Cell representatives / Coordinators from respective departments are hereby informed to attend the meeting.

**SC/ST Cell main Coordinator:**

**Dr. Laxmisagar H.S**  
Asst. Professor, Dept. of ECE, BMSIT&M,  
Bangalore 560064.

**Venue: A-227, Academic Block, BMSIT&M.**

**Date and Time: 12/12/2024, 10:30 am**

**The following are the SC/ST Coordinator of respective Department:**

Sl. No.	Faculty Name	Dept.
1	Dr. Mamatha K R	ECE
2	Dr. Ambika G N	CSE-1
3	Dr. Shanthi D L	CSE-2
4	Dr. Gurumurthy O	ME
5	Dr. Manjunath Babu	EEE
6	Dr. Saritha I G	TCE
7	Dr. Athiyamaan	CIV
8	Prof. Nirupama	MCA
9	Prof. Chidanand K	AIML
10	Prof. Manoj Kumar S	MBA

  
**SC/ST Cell In-charge**

  
**Dean Students Welfare**

  
**Principal**

**CC:**

1. HoD's -For circulation and announcement in respective departments.
2. SC/ST cell coordinators.

**PRINCIPAL**  
BMS Inst.of Tech.& Mgmt.  
Doddaballapur Main Road  
Avalahalli, Yelahanka, B'lore-560119



# ಬಿ.ಎಂ.ಎಸ್. ತಾಂತ್ರಿಕ ಮತ್ತು ವ್ಯವಸ್ಥಾಪನಾ ಮಹಾವಿದ್ಯಾಲಯ BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

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Approved by UGC / AICTE / Govt. of Karnataka

## INTERNAL QUALITY ASSURANCE CELL

Sl. No.	Name of the Person	Affiliation	Designation
1.	Dr. Sanjay H A	Principal, BMSIT&M	Chairperson
Senior Administrative officers			
2.	Dr. Anil G N	Vice Principal	Member
3.	Dr. Sathish Kumar K M	Dean (Academics)	Member
4.	Dr. Ganesh P	Dean (Planning and Development)	Member
5.	Dr. Nagabhushan S V	Associate Professor (CSE)	Member Convener
Management Representative			
6.	Wg Cdr R A Raghavan	Director (Admin), BMSET	Member
Senior Faculty Members from different Departments			
7.	Dr. Usha B A	Professor (CSE) & NAAC Coordinator	Member
8.	Dr. Raju Hajare	Associate Professor (ETE)	Member
9.	Mrs. Archana K	Assistant Professor (CV)	Member
10.	Dr. Vinay H V	Associate Professor (MBA)	Member
11.	Dr. Hanumantha Raju M C	Professor (ECE) & COE	Member
12.	Dr. Prashanth A	Assistant Professor (EEE)	Member
Representation from R&D Lab, Industry and IIT/NIT (To be nominated by VTU)			
13.	Dr. Raja Samikkannu	STD, CSIR, NAL, Bengaluru	Member
14.	Sri. Ramanujan VS	Sr. DGM, BEL, Bengaluru	Member
15.	Dr. C. Pandu Rangan	Dept. of CSE, IIT, Madras	Member
Three non-teaching staff of the college, one each from different categories			
16.	Mr. Pujari Kodanda Ramurthy	Mechanical Engineering	Member
17.	Mr. H N Harinath	Artificial Intelligence and Machine Learning	Member
18.	Mr. Anthony	Civil Engineering	Member

Chairperson - IQAC  
Dr. Sanjay H A

**PRINCIPAL**  
BMS Inst. of Tech. & Mgmt.  
Doddaballapur Main Road  
Avalahalli, Yelahanka, B'lore-56





**BMS INSTITUTE OF TECHNOLOGY AND  
MANAGEMENT**  
Avalahalli, Doddaballapur Main Road, Bengaluru -  
560064  
**Gender Champion Cell**



**Objectives :**

To make the young boys and girls gender sensitive and create positive social norms that value the girls and their rights.

**Roles & Responsibilities:**

The responsibilities of the Gender Champion Cell will include the following:

- Provide overall guidance to the peer group in integrating /mainstreaming gender in all activities of the Institution in the form of focused group discussions, debates, poster competitions etc.
- Organize awareness programmes on various gender issues including legislations to influence behaviour change. This could be facilitated through workshops, theme based plays, films, painting competition, etc.
- Organize exposure visits to various public service institutions at the village and city level to facilitate knowledge about gender issues as they affect diverse populations.

**Date of establishment:** 24 / 11 /2015

**The Cell comprises of :**

Nodal Teachers [Faculty Coordinators] and Gender Champions [students coordinators]

**For further details Contact**

Dr. Thejaswini S

Chair Person GCC

BMSIT&M

Ph. no: (-91)9008637144



# BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

Avalahalli, Doddaballapur Main Road, Bengaluru -  
560064

## Gender Champion Cell



The Gender Champions and Nominated Nodal Teachers are as follows:

Sl. No	Particulars	Name	USN	Mobile Number	E-mail Id	Community	Residential Address
1	Gender Champions	Swarnaranjani B A	1BY21ET 047	7975367850	N22@bmsit.in	General	#333, 4th D cross, Srinidhi Layout, M S Palya Road, Vidyaranyapura, Bengaluru. 97
2	Gender Champions	A Maneesh Reddy	1BY21ET 001	9972191395	N1@bmsit.in	General	NO.4, ASHIRWAD LAYOUT 4TH CROSS, VARANASI, MARGODANAHALI MAIN ROAD,, BANGALORE, KARNATAKA, 560036.
3	Gender Champions	Karthik V T	1BY21EC 067	7338172701	h24@bmsit.in	SC	Balaji P G , Near BMSIT, Bengaluru
4	Gender Champions	MANSI GUPTA	1BY21AI0 28	9878372096	g28@bmsit.in	General	BALAGI GIRLS PG, YELHANAKA NEW TOWN BENGALURU-64
5	Gender Champions	ARAVIND M	1BY21AI0 09	9483714711	g9@bmsit.in	General	#72, Gurureddy Lyt, B Narayanapura, Bangalore-16
6	Gender Champions	PEDADA MANJUSHA	1BY20IS1 09	7411603298	manjushapedada@gmail.com	General	QTR No. C-8/B, Ganga Marg, V C Colony,
7	Gender Champions	MONISH S	1BY20IS0 88	8951513504	monish2304@gmail.com	OBC	#1177, 10th Cross, BSK 1st Stage, Ashoknagar,





# BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

Avalahalli, Doddaballapur Main Road, Bengaluru -  
560064

## Gender Champion Cell



							Bengaluru-560050
8	Gender Champions	Sujit Sigamani	1BY21CS 189	8310141628	c38@bmsit.in	General	#1152, 2nd Main Rd, BEL Layout 2nd Block, BEL Layout, Vidyaranya, Bengaluru, Karnataka 560097
9	Gender Champions	Swasti Sadanand	1BY21CS 195	8277153150	c44@bmsit.in	General	#73, 4th cross , central excise layout , Bhoopasnadra , Bangalore -560094
10	Nodal Teachers	Dr. Thejaswini S	—	9008637144	thejaswini.s@ bmsit.in	OBC	#211, SLV Fedora, Avalahalli, Doddaballpaur Main Road, Yelahanka, Bengaluru. 560064
11	Nodal Teachers	Prof. Shimna Manoharan	—	8129680788	Shimnagm@b msit.in	OBC	B301, Vajram Tiara Avalahalli, Yelahanka
12	Nodal Teachers	Prof. Shilpa G	—	9986299412	shilpag@bmsi t.in	General	C-33, AIR SPT Quarters, Diary cross, Yelahanka New Town, Bangalore 560064
16	Nodal Teachers	Prof. Chandra Prabha	—	8867618157	chandra@bm sit.in	OBC	101,opp to Avalahalli, Doddaballpaur Main Road, Yelahanka, Bengaluru. 560064
17	Nodal Teachers	Prof. Durgha Bhavani	—	8951440755	durga842004 @bmsit.in	OBC	#66,3rd cross,1st main,near nagalingeswara temple,doddabomma sandra,vidyaranya pu ra,blore-97



# **BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT**

**Avalahalli, Doddaballapur Main Road, Bengaluru -  
560064**

## **Gender Champion Cell**



18	Nodal Teachers	Dr. Gireesh Babu C N	—	8660370728	gireeshbabu@bmsit.in	OBC	#52, Sai Jyothi Layout, Singanayakanahalli, Yelahanka, Bengaluru-560064
19	Nodal Teachers	Dr. Jagadeesh.Y.J	—	9845604585	jagadeeshayjmech@bmsit.in	General	#60,1st Floor,10th cross, Sai Jyothi Layout, Singanayakanahalli, Yelahanka, Bengaluru-560064
20	Nodal Teachers	Prof. Nirupama B K	—	9686773741	nirupamabk@bmsit.in	SC	#001A DS Max Streak Nest, Nagenhalli, Yelahanka Bengaluru-64
21	Nodal Teachers	Dr. Kantharaju V	—	9611366672	Kanth95@bmsit.in	OBC	#01, Managondanahalli Koira Post Devanahalli Taluk Bengaluru rural district Pin: 562110

# ANNEXURE - 10

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Name	Electronics and Communication Engineering					
Number of Seats	Regular Intake - 180 SNQ - 09 PIO - 27					
Duration	4 years					
Cut off mark / rank for admission during the last three years	2024-25					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	3934	17730	10886	24247	*	
	2023-24					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	7341	13946	6088	9898	*	
	2022-23					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	6007	13068	12169	27437	*	
Fee	2024-25					
	CET		76135			
	Comedk		261477			
	Management		350000			
	2023-24					
	CET		69214			
	Comedk		237706			
	Management		300000			
	2022-23					
	CET		60686			
	Comedk		222156			
	Management		300000			
Placement facilities	ANNEXURE ENCLOSED					
Campus placement in last three years with minimum salary, maximum salary and average salary	ANNEXURE ENCLOSED					

\* As per the academic eligibility criteria of the university norms



# ANNEXURE

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Name	Computer Science and Engineering						
Number of Seats	Regular Intake - 900 SNQ - 45 PIO - 135						
Duration	4 years						
Cut off mark / rank for admission during the last three years	2024-25						
	CET		ComedK		Management Seat		
	Starting	Ending	Starting	Ending	Starting	Ending	
	3819	12571	3634	12938	*		
	2023-24						
	CET		ComedK		Management Seat		
	Starting	Ending	Starting	Ending	Starting	Ending	
	2448	5707	1426	4365	*		
	2022-23						
	CET		ComedK		Management Seat		
	Starting	Ending	Starting	Ending	Starting	Ending	
	2135	6355	3089	8749	*		
Fee	2024-25						
	CET		76135				
	Comedk		261477				
	Management		650000				
	2023-24						
	CET		69214				
	Comedk		237706				
	Management		650000				
	2022-23						
	CET		60686				
	Comedk		222156				
	Management		550000				
Placement facilities	ANNEXURE ENCLOSED						
Campus placement in last three years with minimum salary, maximum salary and average salary	ANNEXURE ENCLOSED						

\* As per the academic eligibility criteria of the university norms

## ANNEXURE

## DEPARTMENT OF MECHANICAL ENGINEERING

Name	Mechanical Engineering					
Number of Seats	Regular Intake - 60 SNQ - 03 PIO - 09					
Duration	4 years					
Cut off mark / rank for admission during the last three years	2024-25					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	27538	58620	19401	46274	*	
	2023-24					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	35118	46643	17165	43636	*	
	2022-23					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	46224	207603	54047	54047	*	
Fee	2024-25					
	CET		76135			
	Comedk		261477			
	Management		150000			
	2023-24					
	CET		69214			
	Comedk		237706			
	Management		150000			
	2022-23					
	CET		69214			
	Comedk		237706			
	Management		200000			
Placement facilities	ANNEXURE ENCLOSED					
Campus placement in last three years with minimum salary, maximum salary and average salary	ANNEXURE ENCLOSED					

\* As per the academic eligibility criteria of the university norms

## ANNEXURE

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Name	Electrical and Electronics Engineering					
Number of Seats	Regular Intake - 60 SNQ - 03 PIO - 09					
Duration	4 years					
Cut off mark / rank for admission during the last three years	2024-25					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	15045	31021	15836	37543	*	
	2023-24					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	18270	30186	12114	19468	*	
	2022-23					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	14382	58644	26211	39378	*	
Fee	2024-25					
	CET		76135			
	Comedk		261477			
	Management		200000			
	2023-24					
	CET		69214			
	Comedk		237706			
	Management		200000			
	2022-23					
	CET		69214			
	Comedk		237706			
	Management		200000			
Placement facilities	ANNEXURE ENCLOSED					
Campus placement in last three years with minimum salary, maximum salary and average salary	ANNEXURE ENCLOSED					

\* As per the academic eligibility criteria of the university norms



ANNEXURE  
DEPARTMENT OF CIVIL ENGINEERING

Name	Civil Engineering					
Number of Seats	Regular Intake - 60 SNQ - 03 PIO - 09					
Duration	4 years					
Cut off mark / rank for admission during the last three years	2024-25					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	52390	174579	36264	-	*	
	2023-24					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	46101	75802	34028	51536	*	
	2022-23					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	59164	116492	-	-	*	
Fee	2024-25					
	CET		76135			
	Comedk		261477			
	Management		150000			
	2023-24					
	CET		69214			
	Comedk		237706			
	Management		150000			
	2022-23					
	CET		69214			
	Comedk		237706			
	Management		200000			
Placement facilities	ANNEXURE ENCLOSED					
Campus placement in last three years with minimum salary, maximum salary and average salary	ANNEXURE ENCLOSED					

\* As per the academic eligibility criteria of the university norms

ANNEXURE

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Name	Artificial Intelligence and Machine Learning					
Number of Seats	Regular Intake - 360 SNQ -18 PIO- 54					
Duration	4 years					
Cut off mark / rank for admission during the last three years	2024-25					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	5394	15953	3186	18563	*	
	2023-24					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	6230	10675	2725	6974	*	
	2022-23					
	CET		ComedK	Management Seat		
	Starting	Ending	Starting	Ending	Starting	Ending
	5781	12363	8543	15555	*	
Fee	2024-25					
	CET		76135			
	Comedk		261477			
	Management		550000			
	2023-24					
	CET		69214			
	Comedk		237706			
	Management		550000			
	2022-23					
	CET		69214			
	Comedk		237706			
	Management		450000			
Placement facilities	-					
Campus placement in last three years with minimum salary, maximum salary and average salary	-					

\* As per the academic eligibility criteria of the university norms

## ANNEXURE

## DEPARTMENT OF COMPUTER SCIENCE AND BUSINESS SYSTEM

Name	Computer Science and Business System					
Number of Seats	Regular Intake - 60 SNQ -03 PIO-NA					
Duration	4 years					
Cut off mark / rank for admission during the last three years	2024-25					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	15336	10281	3928	13630	*	
	2023-24					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	7104	11352	4625	5906	*	
	2021-22* Introduced on 2023-24					
	CET		ComedK		Management Seat	
	Starting	Ending	Starting	Ending	Starting	Ending
	-	-	-	-	*	
Fee	2024-25					
	CET		69214			
	Comedk		237706			
	Management		450000			
	2023-24					
	CET		69214			
	Comedk		237706			
	Management		450000			
	2022-23					
	CET		-			
	Comedk		-			
	Management		-			
Placement facilities	-					
Campus placement in last three years with minimum salary, maximum salary and average salary	-					

\* As per the academic eligibility criteria of the university norms



# ANNEXURE

## DEPARTMENT OF MASTER OF BUSINESS ADMINISTRATION

Name	Master of Business Administration			
Number of Seats	Regular Intake - 120			
Duration	2 years			
Cut off mark / rank for admission during the last three years	2024-25			
	PGCET		Management Seat	
	Starting	Ending	Starting	Ending
	568	1588	*	
	2023-24			
	PGCET		Management Seat	
	Starting	Ending	Starting	Ending
	170	745	*	
	2022-23			
	PGCET		Management Seat	
	Starting	Ending	Starting	Ending
	499	2534	*	
Fee	2024-25			
	PGCET		57750	
	Management		400000	
	2023-24			
	PGCET		57750	
	Management		350000	
	2022-23			
	PGCET		55000	
	Management		250000	
Placement facilities	ANNEXURE ENCLOSED			
Campus placement in last three years with minimum salary, maximum salary and average salary	ANNEXURE ENCLOSED			

\* As per the academic eligibility criteria of the university norms

ANNEXURE

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

Name	Master of Computer Applications			
Number of Seats	Regular Intake - 120 PIO - 18			
Duration	2 years			
Cut off mark / rank for admission during the last three years	2024-25			
	PGCET		Management Seat	
	Starting	Ending	Starting	Ending
	219	643	*	
	2023-24			
	PGCET		Management Seat	
	Starting	Ending	Starting	Ending
	1375	2491	*	
	2022-23			
	PGCET		Management Seat	
	Starting	Ending	Starting	Ending
	289	511	*	
Fee	2024-25			
	PGCET		57750	
	Management		350000	
	2023-24			
	PGCET		57750	
	Management		350000	
	2022-23			
	PGCET		55000	
	Management		200000	
Placement facilities	ANNEXURE ENCLOSED			
Campus placement in last three years with minimum salary, maximum salary and average salary	ANNEXURE ENCLOSED			

\* As per the academic eligibility criteria of the university norms

ANNEXURE

DEPARTMENT OF M. TECH (COMPUTER SCIENCE AND ENGINEERING)

Name	Computer Science and Engineering			
Number of Seats	Regular Intake - 18			
Duration	2 years			
Cut off mark / rank for admission during the last three years	2024-25			
	PGCET		Management Seat	
	Starting	Ending	Starting	Ending
	2047	4368	*	
	2023-24			
	PGCET		Management Seat	
	Starting	Ending	Starting	Ending
	2002	5490	*	
	2022-23			
	PGCET		Management Seat	
	Starting	Ending	Starting	Ending
	3732	3732	*	
Fee	2024-25			
	PGCET		69300	
	Management		75000	
	2023-24			
	PGCET		69300	
	Management		75000	
	2022-23			
	PGCET		66000	
	Management		75000	
Placement facilities	ANNEXURE ENCLOSED			
Campus placement in last three years with minimum salary, maximum salary and average salary	ANNEXURE ENCLOSED			

\* As per the academic eligibility criteria of the university norms



ANNEXURE

DEPARTMENT OF M. TECH (CYBER SECURITY)

Name	Cyber Security			
Number of Seats	Regular Intake - 18			
Duration	2 years			
Cut off mark / rank for admission during the last three years	2024-25			
	PGCET		Management Seat	
	Starting	Ending	Starting	Ending
	1912	4356	*	
	2023-24			
	PGCET		Management Seat	
	Starting	Ending	Starting	Ending
	2751	4056	*	
	2022-23			
	PGCET		Management Seat	
	Starting	Ending	Starting	Ending
	3040	3040	*	
Fee	2024-25			
	PGCET		69300	
	Management		125000	
	2023-24			
	PGCET		69300	
	Management		125000	
	2022-23			
	CET		66000	
	Management		75000	
Placement facilities	ANNEXURE ENCLOSED			
Campus placement in last three years with minimum salary, maximum salary and average salary	ANNEXURE ENCLOSED			

\* As per the academic eligibility criteria of the university norms



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064.**

*Teaching faculty list as on March 2025*

Sl. No.	Name of the Faculty	Designation
1	Dr. Sanjay H A	Professor & Principal
2	Dr. Anil G.N	Professor & Vice-Principal
3	Dr. Thippeswamy G	Professor & HOD
4	Dr. Mahesh G	Professor & Associate Head Cluster 1
5	Dr. Satish Kumar T	Associate Professor & Associate Head Cluster 2
6	Dr. Radhika K R	Associate Professor & Associate Head Cluster 3
7	Dr. Usha B A	Professor
8	Dr. Hemamalini B H	Associate Professor
9	Dr. Bharati. R	Associate Professor
10	Dr. Nagabhushan. S.V	Associate Professor
11	Dr. Ashwini N	Associate Professor
12	Dr. Ravi Hosur	Associate Professor
13	Dr. Arunakumari B N	Associate Professor
14	Dr. Gerard Deepak	Associate Professor
15	Mrs. Vishakha Yadav	Assistant Professor
16	Dr. Muneshwara. M.S	Assistant Professor
17	Dr. Anand R	Assistant Professor
18	Mrs. Durga Devi. G.Y	Assistant Professor
19	Mr. P. Jagadish	Assistant Professor
20	Dr. Durga Bhavani A	Assistant Professor
21	Mr. Rajesh N V	Assistant Professor
22	Dr. Vidya R	Assistant Professor
23	Dr. Ambika G N	Assistant Professor
24	Mrs. A. Mari Kirthima	Assistant Professor
25	Mr. Guruprasad S	Assistant Professor
26	Dr. Shankar R	Assistant Professor
27	Dr. Lakshmi B N	Assistant Professor
28	Dr. Dhanalakshmi B K	Assistant Professor
29	Ms. Brunda S	Assistant Professor
30	Mrs. Shilpa M	Assistant Professor
31	Mrs. Tanya Chandra	Assistant Professor
32	Mrs. Goutami Chenumalla	Assistant Professor



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064.**

*Teaching faculty list as on March 2025*

Sl. No.	Name of the Faculty	Designation
33	Dr. Jai Arul Jose	Assistant Professor
34	Mrs. S Packiya Lekshmi	Assistant Professor
35	Mr. Mohammed Khurram	Assistant Professor
36	Mr. Akshay Arya	Assistant Professor
37	Mrs. Chandini A	Assistant Professor
38	Mrs. Priyanka M R	Assistant Professor
39	Mrs. Arpitha Shivanna	Assistant Professor
40	Mr. Beerappa Belasakarge	Assistant Professor
41	Ms. Soujanya S D	Assistant Professor
42	Ms. Shama H M	Assistant Professor
43	Ms. Neetha P U	Assistant Professor
44	Ms. Chaitanya V	Assistant Professor
45	Mrs. Aruna N	Assistant Professor
46	Mr. Ajith S	Assistant Professor



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064.**

*Teaching faculty list as on March 2025*

Sl. No.	Name of the Faculty	Designation
<b><u>Department of Electronics &amp; Communication Engineering</u></b>		
1	Dr. Ambika R	Dean-Student Welfare
2	Dr. A Shobha Rani	Associate Professor & HOD
3	Dr. Jayadeva G S	Professor
4	Dr. M.C. Hanumantharaju	Professor
5	Dr. Saneesh Cleatus Thundiyil	Associate Professor
6	Dr. Surekha r Gondkar	Associate Professor
7	Dr. Vijayalakshmi G V	Associate Professor
8	Dr. Anil Kumar D	Associate Professor
9	Dr. Anitha V R	Associate Professor
10	Dr. Deepa N Reddy	Associate Professor
11	Dr. Mamatha K R	Assistant Professor
12	Dr. Rashmi N	Assistant Professor
13	Dr. Jagannatha. K.B	Assistant Professor
14	Mrs. Chandraprabha R	Assistant Professor
15	Dr. Laxmisagar H S	Assistant Professor
16	Dr. Sabina Rahaman	Assistant Professor
17	Dr. Asha G Hagargund	Assistant Professor
18	Dr. Suryakanth B	Assistant Professor
19	Mr. Shivarudraiah	Assistant Professor
20	Dr. Thyagaraj T	Assistant Professor
21	Mrs. Shilpa Hiremath	Assistant Professor
22	Mrs. Vinutha B	Assistant Professor
23	Dr. Dankan Gowda V	Assistant Professor
24	Dr. Anna Merine George	Assistant Professor
25	Dr. Asha K	Assistant Professor
26	Dr. Paramita Sarkar	Assistant Professor
27	Dr. Anitha M	Assistant Professor
28	Dr. Raghunandan G H	Assistant Professor
29	Dr. Satheesh Kumar P	Assistant Professor
30	Ms. Soumya S Vastrad	Assistant Professor



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*Teaching faculty list as on March 2025*

Sl. No.	Name of the Faculty	Designation
<b><u>Department of Information Science &amp; Engineering</u></b>		
1	Dr. Manjunath T N	Dean-Career Guidance
2	Dr. Surekha K B	Professor & Incharge HOD
3	Dr. Narasimha Murthy M S	Associate Professor & Associate Head Cluster 4
4	Dr. N Rakesh	Associate Professor & Associate Head Cluster 5
5	Dr. S K Pushpa	Professor & HOD
6	Dr. B.R. Arun Kumar	Professor
7	Dr. Bhuvaneshwari C Melinamath	Professor
8	Dr. Sheela Kathavate	Associate Professor
9	Dr. Geeta Amol Patil	Associate Professor
10	Dr. Prakash G L	Associate Professor
11	Dr. Shoba M	Associate Professor
12	Dr. Veena N	Associate Professor
13	Dr. Mohan B A	Associate Professor
14	Dr. Chethana C	Assistant Professor
15	Dr. Shanthi D L	Assistant Professor
16	Mrs. S. Mahalakshmi	Assistant Professor
17	Dr. K T Chandrashekar	Assistant Professor
18	Dr. Gireesh Babu C N	Assistant Professor
19	Mrs. Ambika Rani Subhash	Assistant Professor
20	Dr. Swetha M S	Assistant Professor
21	Dr. Vinutha K	Assistant Professor
22	Dr. Ravi Kumar B N	Assistant Professor
23	Dr. Savitha S	Assistant Professor
24	Dr. Basavaraj G N	Assistant Professor
25	Dr. Kalaivani Y S	Assistant Professor
26	Dr. Harish Kumar N	Assistant Professor
27	Dr. Srinivas B V	Assistant Professor
28	Mrs. Bhavya G	Assistant Professor
29	Mr. Sonnegowda K	Assistant Professor
30	Mr. Vinaykumar Y B	Assistant Professor
31	Ms. Saritha A K	Assistant Professor



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*Teaching faculty list as on March 2025*

Sl. No.	Name of the Faculty	Designation
32	Mrs. Annapareddy Haarika	Assistant Professor
33	Ms. Amulya P	Assistant Professor
34	Mrs. Malini M	Assistant Professor
35	Mrs. Sowmya K	Assistant Professor
36	Mr. Pushpanathan G	Assistant Professor
37	Ms. Spandana L	Assistant Professor
38	Ms. Sanjana V Hunashikatti	Assistant Professor



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064.**

*Teaching faculty list as on March 2025*

Sl. No.	Name of the Faculty	Designation
<b><u>Department of Mechanical Engineering</u></b>		
1	Dr. K.M. Sathish Kumar	Dean-Academics
2	Dr. Madhu M C	Assistant Professor & HOD
3	Mr. T.N. Praveen Kumar	Associate Professor
4	Dr. G L Anantha Krishna	Associate Professor
5	Dr. O. Gurumoorthy	Assistant Professor
6	Mr. K Chandra Sekhara Reddy	Assistant Professor
7	Dr. Shripad Diwakar	Assistant Professor
8	Mrs. Nithya Poornima	Assistant Professor
9	Mr. Sriganesh T G	Assistant Professor
10	Mr. Sundaresh S	Assistant Professor
11	Dr. Jagadeesh Y J	Assistant Professor
12	Dr. Keerthi Kumar N	Assistant Professor
13	Dr. Kiran M D	Assistant Professor
14	Dr. G Avinash	Assistant Professor
15	Dr. Nagamadhu M	Assistant Professor
16	Dr. Chethan D	Assistant Professor
17	Dr. Srinidhi Acharya S R	Assistant Professor
18	Dr. Manjunatha C	Assistant Professor



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064.**

*Teaching faculty list as on March 2025*

Sl. No.	Name of the Faculty	Designation
<b><u>Department of Electrical &amp; Electronics Engineering</u></b>		
1	Dr. Prashanth A Athavale	Assistant Professor & HOD
2	Dr. Sanjay Lakshminarayanan	Professor
3	Dr. Narapareddy Ramarao	Associate Professor
4	Mr. H D Kattimani	Associate Professor
5	Dr. Suma Umesh	Assistant Professor
6	Mrs. Manjula B K	Assistant Professor
7	Mr. Vikram Chekuri	Assistant Professor
8	Mr. Babu Naik Gugulothu	Assistant Professor
9	Dr. Manjunatha Babu P	Assistant Professor
10	Mr. Ozwin Dominic D'Souza	Assistant Professor
11	Mrs. Shilpa G	Assistant Professor
12	Dr. Prashanth N A	Assistant Professor
13	Mr. Nagaraj D Chonali	Assistant Professor
14	Dr. Madhu Palati	Assistant Professor
<b><u>Department of Electronics &amp; Telecommunication Engineering</u></b>		
1	Dr. Seema Singh	Dean-Innovation & Entrepreneurship
2	Dr. Mallikarjuna Gowda C.P	Associate Professor & HOD
3	Dr. Raju Hajare	Associate Professor
4	Dr. S Thejaswini	Assistant Professor
5	Dr. Siddiq Iqbal	Assistant Professor
6	Dr. Banuprakash R	Assistant Professor
7	Dr. Saritha I G	Assistant Professor
8	Dr. Sowmya Shree M S	Assistant Professor
9	Dr. Sumathi M S	Assistant Professor
10	Dr. Prathiba N	Assistant Professor



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064.**

*Teaching faculty list as on March 2025*

Sl. No.	Name of the Faculty	Designation
<b><u>Department of Civil Engineering</u></b>		
1	Dr. G Aruna	Associate Professor & HOD
2	Dr. Rajakumara H N	Professor & HOD
3	Dr. Rajesh Gopinath	Associate Professor
4	Mrs. Shobha R	Assistant Professor
5	Mrs. Archana K	Assistant Professor
6	Mrs. Shimna Manoharan	Assistant Professor
7	Dr. Vinod B R	Assistant Professor
8	Dr. Chandrashekharappa Agasnalli	Assistant Professor
9	Dr. Deepak M S	Assistant Professor
10	Dr. Anupkumar G Ekbote	Assistant Professor
11	Dr. Athiyamaan V	Assistant Professor
12	Dr. Marsh M Bandi	Assistant Professor
13	Dr. Lalit Kumar Gupta	Assistant Professor



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064.**

*Teaching faculty list as on March 2025*

Sl. No.	Name of the Faculty	Designation
<b><u>Department of Artificial Intelligence and Machine Learning</u></b>		
1	Dr. Bharathi Malakreddy A	Head-Research & Consultancy
2	Dr. Anupama H S	Professor & HOD Asso. Head Cluster 1
3	Dr. Pradeep K R	Associate Professor & Associate Head Cluster 2
4	Dr. Niranjnamurthy M	Associate Professor
5	Dr. Manoj H M	Associate Professor
6	Dr. Srivani P	Associate Professor
7	Dr. Rajesh I S	Assistant Professor
8	Dr. Archana Bhat	Assistant Professor
9	Mr. Yatheesh N G	Assistant Professor
10	Mr. Sanjay M Belgaonkar	Assistant Professor
11	Mr. Sachin Urabinahatti	Assistant Professor
12	Mr. Shobhit Tembhre	Assistant Professor
13	Dr. Kantharaju V	Assistant Professor
14	Mr. Chidananda K	Assistant Professor
15	Ms. Amitha S K	Assistant Professor
16	Mr. Balaraju G	Assistant Professor
17	Ms. Mayuri	Assistant Professor
18	Mrs. Kavitha D	Assistant Professor
19	Mrs. Shruthi S	Assistant Professor
20	Ms. Megha S	Assistant Professor
21	Mr. Abhishek K L	Assistant Professor
22	Mr. Umesh T	Assistant Professor
23	Mrs. Sowmya V L	Assistant Professor



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064.**

*Teaching faculty list as on March 2025*

Sl. No.	Name of the Faculty	Designation
<b><u>Department of Computer Science and Business Systems</u></b>		
1	Dr. Vishwa Kiran S	Associate Professor & Incharge HOD CSBS
2	Dr. Archana R A	Associate Professor
3	Mr. Pradeep Kumar G M	Assistant Professor
4	Mr. Udayaprasad	Assistant Professor
<b><u>Department of Master of Computer Applications</u></b>		
1	Dr. P Ganesh	Dean_Planning & Development
2	Dr. Muthyala Sridevi	Assistant Professor & HOD
3	Dr. Aparna K	Associate Professor
4	Dr. Drakshaveni G	Associate Professor
5	Dr. P Sudarsanam	Associate Professor
6	Mr. Dwarakanath G V	Assistant Professor
7	Dr. Shivakumara T	Assistant Professor
8	Mrs. Reshma C R	Assistant Professor
9	Mrs. Nirupama B K	Assistant Professor
10	Mr. A Venkatesh	Assistant Professor
11	Ms. Ashwitha K	Assistant Professor
12	Ms. Spurthy S N	Assistant Professor



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064.**

*Teaching faculty list as on March 2025*

Sl. No.	Name of the Faculty	Designation
<b><u>Department of Mathematics</u></b>		
1	Dr. Chethan A S	Professor & HOD
2	Dr. Karabi Sikdar	Professor
3	Dr. Annamma Abraham	Professor
4	Dr. Jojy Joseph Idicula	Professor
5	Dr. Anitha Kiran	Assistant Professor
6	Dr. Annapoorna M S	Assistant Professor
7	Dr. Kallur V Vijayakumar	Assistant Professor
8	Dr. T K Sreelakshmi	Assistant Professor
9	Dr. Arnab Bhattacharyya	Assistant Professor
10	Dr. Priyanka Pal	Assistant Professor
11	Dr. Aruna Kumara H	Assistant Professor
12	Dr. S Saranya	Assistant Professor
13	Dr. Nikki Kedia	Assistant Professor
14	Mr. Puneetha	Assistant Professor
15	Dr. Saroj Revankar	Assistant Professor
16	Dr. Shankar S Narayan	Assistant Professor
17	Mrs. Neha D S	Faculty
18	Dr. Varun V L	Assistant Professor
19	Dr. Sumati Thareja	Assistant Professor
<b><u>Department of Physics</u></b>		
1	Dr. Dhananjaya N	Professor & HOD
2	Dr. R Lokesh	Associate Professor
3	Dr. C Kavitha	Associate Professor
4	Dr. Yashaswini	Assistant Professor
5	Dr. Ashwini K R	Assistant Professor
6	Dr. Daruka Prasad B	Assistant Professor
7	Dr. Basavaraj R B	Assistant Professor
8	Dr. Harish Sharma Akkera	Assistant Professor
9	Dr. Chandrashekar Pathak	Assistant Professor
10	Dr. Sandra Dias	Assistant Professor
11	Mrs. Nayana L	Assistant Professor
12	Mrs. Janhavi V	Assistant Professor



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064.**

*Teaching faculty list as on March 2025*

Sl. No.	Name of the Faculty	Designation
<b><u>Department of Chemistry</u></b>		
1	Dr. Ramakrishnappa T	Professor & HOD
2	Dr. Jyothi C Abbar	Associate Professor
3	Dr. Sudheer Kumar K H	Associate Professor
4	Dr. Bincy Rose Varghese	Assistant Professor
5	Dr. Swetha G A	Assistant Professor
6	Dr. K Suresh Kumar	Assistant Professor
7	Dr. Jeevan Chakravarthy A S	Assistant Professor
8	Dr. A Vijaya Bhaskar Reddy	Assistant Professor
9	Dr. Udayabhanu	Assistant Professor
10	Dr. Madhukara Naik	Assistant Professor
11	Dr. Radha N	Assistant Professor
12	Mrs. Srilaxmi B A	Assistant Professor
<b><u>Department of Humanities and Social Science</u></b>		
1	Mrs. B J Tejaswini	Assistant Professor & In-Charge HOD
2	Dr. Kavita Harihar	Faculty
3	Mrs. Chaithanya K R	Faculty
<b><u>Department of Master of Business Administration</u></b>		
1	Dr. Jyothi E Singh	Associate Professor & HOD
2	Dr. Nethravathi N	Associate Professor
3	Dr. Vinay H V	Associate Professor
4	Dr. Vishwanatha M R	Assistant Professor
5	Dr. Divya H N	Assistant Professor
6	Mrs. Seema B	Assistant Professor
7	Dr. Janmitha	Assistant Professor
8	Mr. Sai Niranjana R	Assistant Professor
9	Dr. Reshma M	Assistant Professor
10	Mr. Manoj Kumar S	Assistant Professor
11	Mr. Channakeshava H C	Assistant Professor
12	Mrs. Sindhu Ramesh	Assistant Professor



BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT  
YELAHANKA, BANGALORE-560119  
BRANCH WISE LIST FACULTY MEMBERS 2024-25

Department of Electronics and Communication Engineering	
Permanent Faculty	30
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:20
Department of CSE	
Permanent Faculty	41
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:37
Department of Information Science and Engineering	
Permanent Faculty	34
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:18
Department of Mechanical Engineering	
Permanent Faculty	17
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:14
Department of Electrical and Electronics Engineering	
Permanent Faculty	14
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:17
Department of Electronics & Telecommunication Engineering	
Permanent Faculty	10
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:24
Department of Civil Engineering	
Permanent Faculty	13
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:18
Department of Artificial Intelligence and Machine Learning	
Permanent Faculty	22
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:32
Department of Computer Science & Business System	
Permanent Faculty	4
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:30
Department of Physics	
Permanent Faculty	12
Adjunct Faculty	-
Permanent Faculty : Student Ratio	-

BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT  
YELAHANKA, BANGALORE-560119  
BRANCH WISE LIST FACULTY MEMBERS 2024-25

Department of Chemistry	
Permanent Faculty	12
Adjunct Faculty	-
Permanent Faculty : Student Ratio	-
Department of Mathematics	
Permanent Faculty	19
Adjunct Faculty	-
Permanent Faculty : Student Ratio	-
Department of Master of Computer Application	
Permanent Faculty	12
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:23
Department of Humanities & Social Science	
Permanent Faculty	3
Adjunct Faculty	-
Permanent Faculty : Student Ratio	-
Department of M.Tech-Computer Science & Engineering	
Permanent Faculty	3
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:12
Department of M.Tech-Cyber Security	
Permanent Faculty	3
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:12
Department of Master of Business Administration	
Permanent Faculty	12
Adjunct Faculty	-
Permanent Faculty : Student Ratio	1:20



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: COMPUTER SCIENCE AND ENGINEERING

Faculty Profile



1.	Name:	SANJAY. H.A
2.	Date of Birth:	20-07-1973
3.	Unique ID:	1-412297417
4.	Education Qualification:	B.E, M.Tech, PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a) 23 Yrs b) 15 Yrs c) 3 Yrs d) -
6.	Area of Specialization:	COMPUTER SCIENCE AND ENGINEERING
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	CLOUD COMPUTING, OPERATING SYSTEM, SYSTEM PROGRAMMING, JAVA, C++, C, BLOCK CHAIN, PARALLEL COMPUTING
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	5 STUDENTS a) 92 b) 40 c) 5/5
9.	Project Carried out:	5
10.	Patents (Filed / Granted):	4
11.	Technology Transfer:	1
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	92
13.	No. of books published with details:	10 BOOK CHAPTERS

Signature:

Date: 28-02-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science & Engineering**

**Faculty Profile**



1.	Name:	Dr. Anil G N
2.	Date of Birth:	02-04-1969
3.	Unique ID:	1-408997031
4.	Education Qualification:	BE, M.Tech, D.Sc
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	30 Years 6 Years 1 Year
6.	Area of Specialization:	Computer Networks
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Data Communication Computer Networks Network Security Universal Human Values
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	40 6
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	46
13.	No. of books published with details:	-

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: COMPUTER SCIENCE AND ENGINEERING**

**Faculty Profile**



1.	Name:	DR. THIPPESWAMY G
2.	Date of Birth:	20.07.1970
3.	Unique ID:	1-7429923836
4.	Education Qualification:	PhD.(CS), M.E., (CSE), B.E(CSE)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching: 31 Years
6.	Area of Specialization:	COMPUTER SCIENCE AND ENGINEERING
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Automata Theory Compiler Design Operating System Cyber Law
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D. (Completed/Ongoing):	Research Guidance: 04  a. Publications: 16 b. MSc (Engg.) : 01/02 c. Ph.D. : 03/06
9.	Project Carried out:	05
10.	Patents (Filed / Granted):	03
11.	Technology Transfer:	00
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	Publications: 56
13.	No. of books published with details:	NIL

Signature:

Date:



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Engineering**

**Faculty Profile**



1.	<b>Name:</b>	<b>Dr. Mahesh G</b>
2.	<b>Date of Birth:</b>	<b>29-08-1981</b>
3.	<b>Unique ID:</b>	<b>1-4771539412</b>
4.	<b>Education Qualification:</b>	<b>B.E., MTech, PhD</b>
5.	<b>Work Experience:</b> a. Teaching: b. Research: - c. Industry: - d. Others: -	a. <b>Teaching: 19 Years</b> b. <b>Research: PhD Parttime (7 Years)</b> c. <b>Industry: -</b> d. <b>Others: -</b>
6.	<b>Area of Specialization:</b>	<b>COMPUTER SCIENCE &amp; ENGINEERING</b>
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	1. Data Structures and Applications 2. C Programming for Problem Solving 3. Theoretical Foundations of Computer Science 4. Compiler Design 5. Database Management Systems 6. Data Analytics using Excel
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	<b>No. of Students: 01</b> <b>No. of papers published in National / International Journals / Conferences: 28</b>  <b>Master (Completed/Ongoing): 5 / 0</b>  <b>Ph.D (Completed/Ongoing): 0 / 1</b>
9.	<b>Project Carried out:</b>	<b>NIL</b>
10.	<b>Patents (Filed / Granted):</b>	<b>03 / 0</b>
11.	<b>Technology Transfer:</b>	<b>NIL</b>
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	<b>28</b>
13.	<b>No. of books published with details:</b>	<b>0</b>

**Signature: Mahesh G**

**Date:08-01-2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Engineering**

**Faculty Profile**



1.	Name:	Dr. Satish Kumar T
2.	Date of Birth:	27/07/1975
3.	Unique ID:	1-4767519496
4.	Education Qualification:	BE, ME, Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	23 years 8 years (Ph.D Part time) 1 years
6.	Area of Specialization:	Compilers and Cloud Computing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Compilers, Data Structures and Algorithms, Graphics, Artificial Neural Networks, Programming in C/C++/Python/Java
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	37 12/1 2/3
9.	Project Carried out:	-NiL-
10.	Patents (Filed / Granted):	7/2
11.	Technology Transfer:	-NiL-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	37
13.	No. of books published with details:	1 - Reliable and Intelligent Optimization in Multi-Layered Cloud Computing Architectures, Edited By H S Madhusudhan, Satish Kumar T, Punit Gupta, Dinesh Kumar Saini, Kashif Zia, Copyright 2024, Taylor & Francis Group, CRC Press.

**Signature: Dr. Satish Kumar T**

**Date: 8.01.2024**



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

YELAHANKA, BANGALORE - 560064

BRANCH: COMPUTER SCIENCE AND ENGINEERING

Faculty Profile



1.	Name:	DR.Radhika K R
2.	Date of Birth:	05.10.1976
3.	Unique ID:	1-2185165293
4.	Education Qualification:	Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 21years b. 10 years c. 2 years d. NIL
6.	Area of Specialization:	Data Mining and High Dimensional data
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Programming with C, Data structures, Logic Design, Object oriented concepts Design and analysis of algorithms, DBMS, Data mining and Data warehousing, Big data analytics, Operating systems, Managing Big data, NOSQL, Artificial Intelligence and Machine Learning.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	01 - Registered b. M.tech guided- 04
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	01
11.	Technology Transfer:	Resource person, delivered a talk for 02 International Conference
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	Total papers published: 12
13.	No. of books published with details:	01-Data Driven Decision Making Big Data Analytics for Business Success

Signature: Radhika

Date: 20.1.24



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064**

**BRANCH: Information Science and Engineering**

**Faculty Profile**



1.	<b>Name:</b>	Dr. Usha B A
2.	<b>Date of Birth:</b>	30-11-1982
3.	<b>Unique ID:</b>	
4.	<b>Education Qualification:</b>	BE, M.Tech, Ph.D
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	18 years 8 years Nil Nil
6.	<b>Area of Specialization:</b>	Information Security
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	Cyber Security, Information Security, Big Data Analytics, Compiler Design, Theory of Computation, Software Engineering
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	4  41 1 1 Completed, 3 Ongoing
9.	<b>Project Carried out:</b>	-----
10.	<b>Patents (Filed / Granted):</b>	Filed and Published - 03
11.	<b>Technology Transfer:</b>	Invited as External Evaluator for SRISHTI 2022 for evaluating Two Days National Level Projects Exhibition organized by Saintgits College of Engineering, Kottukulam Hills, Pathamuttom, Kottayam, Kerala during 25th to 26th April 2022  Delivered a talk on "Artificial Intelligence Techniques in Cyber Security" in an Online Seminar conducted by Department of CSE, Francis Xavier Engineering College



Tirunelveli, India on 6th May 2022

Invited as Session Chair for 4th International Conference on Advances in Computing and Information Technology (IACIT-2020) organized by Reva University on 17-18 May 2022.

Delivered the talk on IOT Security for the Department of Information Technology, St' Joseph's Institute of Technology, OMR, Chennai on 14th Oct 2022.

Invited as Session Chair for the International Conference on Multidisciplinary Research (ICMR 2022) from 22nd November 2022 - 24th November 2022 in association with IETE Kalaburagi centre, Kalaburagi, Karnataka organized by Sharnbasva University, Kalaburagi.

Delivered a talk on "AI Techniques in Cyber Security" as Guest Speaker in the Multidisciplinary Research (ICMR 2022) on 24th November 2022 organized by Sharnbasva University, Kalaburagi

Worked in Board as a member of the Jury for the 'Vivoignite National Science Fair Competition 2022' organized by GyanPro Educational Innovation Pvt. Ltd during December 2022.

Invited as Resource person for delivering the Hands-on Session on Angular JS for the Final Year students of St' Joseph's Institute of Technology, OMR, Chennai from 21st Jan to 23rd Jan 2023.

Invited as Session Chair for 5th International Conference on Advances in Computing and Information Technology (IACIT-2023) organized by Reva University on 4th to 5th May 2023

Invited as Session Chair for International Conference on Computer Science, Cyber Security and Information Technology (CCIT) organized by Hinweis Research during 22nd April 2023

Delivered a talk on "Awareness towards Cyber Crime" in AICTE-VTU Joint Teachers Training Programme for AICTE Approved &



		<p>VTU Affiliated Technical Institution Teachers on 23rd May 2023 organized by VTU-Human Resource Development Cell (HRDC), Visvesvaraya Technological University, Centre for Post Graduate Studies Bengaluru Region, Muddenahalli, Chikkaballapur-562101</p> <p>Delivered a talk on “Artificial Intelligence in Cyber Security” in the workshop conducted by Department of ISE, Malnad College of Engineering, Hassan on 16th Sept 2023</p>
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	<p>Journals: 27</p> <p>Conferences: 14</p>
13.	No. of books published with details:	<p>Book Publication on “Big Data Analytics in Cyber Security” with an ISBN: 978-620-6-75103-8 in LAP Lambert Academic Publishing Sept 2023.</p>

Signature: Dr.Usha B A

Date:29/1/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Engineering**

**Faculty Profile**



1.	Name:	Dr. HemaMalini B H
2.	Date of Birth:	11-07-1971
3.	Unique ID:	
4.	Education Qualification:	PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 24 years b. 2 years c. 1 Year
6.	Area of Specialization:	Machine Learning
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Automata Theory and Computability System Software and Compiler Design Data Structures and Applications Design and Analysis of Algorithms
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	One (Filed and Published)
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	International Journal: 09 International Conference: 06 National Conference: 06
13.	No. of books published with details:	02  1.Title: Performance Analysis of Engineering Students: Doctoral Thesis, Publisher: Amazon, Publication year 2021, ISBN: 979-8459307948, Authors: Dr. HemaMalini B H, Dr. Suresh L, Dr. Suma V



		2. Title: Fundamentals of Cryptography and Network Security, Publisher: South Asian Academic Publications
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		Year of Publication: 2021, ISBN: 978-81-953693-3-1 Authors: Dr. Bhagyashree, Dr. Suresh L, Dr. HemaMalini B H
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Signature:

Dr. HemaMalini B H

Date: 08-02-2024



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: CSE (Computer Science & Engineering)

Faculty Profile



1.	Name:	Dr. Bharathi R
2.	Date of Birth:	14/12/74
3.	Unique ID:	1-408997127
4.	Education Qualification:	BE, M.Tech (PhD)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	22 03
6.	Area of Specialization:	Security in N/w (IoT)
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	C Programming, DBMS, ADBMS, ACN, IoT, RPA, NLP, DAE, LPE2148
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	—
9.	Project Carried out:	—
10.	Patents (Filed / Granted):	01
11.	Technology Transfer:	05
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	18
13.	No. of books published with details:	—

Signature: BDR

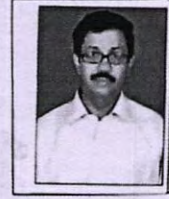
Date: 7/2/24



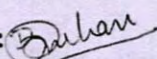
**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Engineering**

**Faculty Profile**



1.	Name:	NAGABHUSHAN S V
2.	Date of Birth:	09-06-1980
3.	Unique ID:	1-419565991
4.	Education Qualification:	Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	17
6.	Area of Specialization:	[Computer Science] Decision Science and Optimization
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	PG: Simulation & Modeling, Advanced Java Programming, Software Engineering, Web Technologies Object Oriented Programming Software Architecture, Mobile Application Development. UG: Web Technology & its Applications, AIML, User Interface Design
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	05 - -
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	Java Programming (ISBN:978-93-5163-112-5)

Signature: 

Date: 06/01/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

BRANCH: .....Computer Science and Engineering.....

**Faculty Profile**



1.	Name:	Dr. Ashwini N
2.	Date of Birth:	23/05/1983
3.	Unique ID:	1-1456899899
4.	Education Qualification:	B.E.(ISE) M.Tech(CSE) Ph.D.(CSE)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	19.6 a)19.6 b)10 c)Nil d)Nil
6.	Area of Specialization:	Prediction Analytics
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Yes- Undergraduate / Postgraduate
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	No. of Students:01 a)27 b) Completed c) Completed
9.	Project Carried out:	Yes-KSCST Funded
10.	Patents (Filed / Granted):	1-Granted 1-Filed
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	27
13.	No. of books published with details:	1

*Ashwini N*

Signature:

Date:29/01/2024



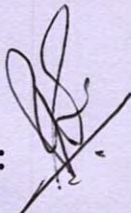
**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064**

**BRANCH: CCOMPUTER SCIENCE AND ENGINEERING**

**Faculty Profile**



1.	Name:	Dr. RAVI HOSUR
2.	Date of Birth:	22-AUGUST-1983
3.	Unique ID:	
4.	Education Qualification:	Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	18 YEARS 02 MONTHS 15 YEARS NIL NIL
6.	Area of Specialization:	Digital Image Processing, IoT, AI & ML, Human Computer Interaction, Digital Forensics
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Computer Science and Engineering
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	- - 02(ongoing)
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	02(Filed)
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	26
13.	No. of books published with details:	01 - ISBN: 978-81-962931-3-0

Signature: 

Date:



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: CSE**

**Faculty Profile**



1.	Name:	Dr. ARUNAKUMARI B N
2.	Date of Birth:	12/10/1987
3.	Unique ID:	1-4771670276
4.	Education Qualification:	B.E, M. Tech., Ph. D.
5.	Work Experience:	10
	a. Teaching:	5
	b. Research:	5
	c. Industry:	-
	d. Others:	-
6.	Area of Specialization:	Artificial Intelligence, Discrete Mathematics, Software Development
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Software Engineering, Discrete Mathematics, C Programming, Algorithms
8.	Research Guidance (No. of Students)	-
	a. No. of papers published in National / International Journals / Conferences:	28
	b. Master (Completed/Ongoing):	Completed
	c. Ph.D (Completed/Ongoing):	Completed
9.	Project Carried out:	Discrete Logic in Building AI Logic
10.	Patents (Filed / Granted):	2 Filed and Published
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	28
13.	No. of books published with details:	-

**Signature: Arunakumari B N**

**Date: 19/1/2024**



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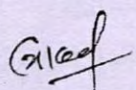
YELAHANKA, BANGALORE - 560064

BRANCH: Computer Science and Engineering

Faculty Profile



1.	Name:	VISHAKHA YADAV
2.	Date of Birth:	14.12.1978
3.	Unique ID:	1-408997241
4.	Education Qualification:	BE, M.Tech, MBA
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	19 4 4
6.	Area of Specialization:	Computer Vision, Software Engineering, Information Systems
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Operating System, Blockchain Technologies, Software engineering, Unix Programming, User Interface Design, Database Management System, Data Structures, C,Python
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NA
9.	Project Carried out:	UG Projects - 25
10.	Patents (Filed / Granted):	Three
11.	Technology Transfer:	NA
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	International Conference - 2 International Journal - 2
13.	No. of books published with details:	NA

Signature: 

Date: 19.01.24



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YELAHANKA, BANGALORE - 560064

BRANCH: ..... C S E .....

Faculty Profile



1.	Name:	MUNEETHA M S
2.	Date of Birth:	28/07/1983
3.	Unique ID:	1-409589911
4.	Education Qualification:	B.E, M.Tech, (Ph.D)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	18 yrs 6 yrs
6.	Area of Specialization:	C S E
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Web, Advanced Java, C++, C, Management & Entrepreneurship
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	-
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	36
13.	No. of books published with details:	-

Signature: \_\_\_\_\_

Date: 19/1/2024



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: COMPUTER SCIENCE

Faculty Profile



1.	Name:	Anon J. R
2.	Date of Birth:	23 <sup>rd</sup> May 1997
3.	Unique ID:	1-409589915
4.	Education Qualification:	M.Tech (PhD)
5.	Work Experience:	
	a. Teaching:	18yr
	b. Research:	10yr
	c. Industry:	01yr
	d. Others:	
6.	Area of Specialization:	Data Mining
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	OS, AOS, JAVA, SE, OOP, DSA
8.	Research Guidance (No. of Students)	
	a. No. of papers published in National / International Journals / Conferences:	08
	b. Master (Completed/Ongoing):	Completed
	c. Ph.D (Completed/Ongoing):	Ongoing
9.	Project Carried out:	
10.	Patents (Filed / Granted):	01
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	03
13.	No. of books published with details:	01

Signature:

Date: 27/01/24



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: .....CSE.....



Faculty Profile

1.	Name:	G Y DURGADEVI
2.	Date of Birth:	15-07-1981
3.	Unique ID:	1-409589919
4.	Education Qualification:	M.Tech
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	19 years 4 years --- ---
6.	Area of Specialization:	Networks, Security
7.	Course taught at Diploma / Post-Diploma / Undergraduate / Postgraduate / Post Graduate-Diploma Level:	Operating Systems, Design and Analysis of Algorithms, Artificial Intelligence and Machine Learning, Principles of Programming using C, Advanced Algorithms
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NA
9.	Project Carried out:	UG Projects
10.	Patents (Filed / Granted):	NA
11.	Technology Transfer:	NA
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	07
13.	No. of books published with details:	NIL

Signature: *Devi*

Date: 19/1/24



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Engineering**

**Faculty Profile**



1.	Name:	P JAGADISH
2.	Date of Birth:	25-01-1982
3.	Unique ID:	
4.	Education Qualification:	M.tech in CSE
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	15  03
6.	Area of Specialization:	Computer Networks, Image processing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	JAVA, SE, C, C++, Python etc
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	06  Completed
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	06
13.	No. of books published with details:	NIL

Signature:

Date:



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

BRANCH: .....CSE.....

**Faculty Profile**



1.	Name:	DURGA BHAVANI A
2.	Date of Birth:	5/08/1983
3.	Unique ID:	
4.	Education Qualification:	M.Tech (PhD)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	18
6.	Area of Specialization:	IOT SECURITY
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	a) C Programming b) Microprocessor c) Analog and Digital Electronics d) Software Testing e) Formal Language and Automata Theory f) Embedded systems g) Operating System h) Computer Organization i) Internet of Things
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	-
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	International -5 Journals-4
13.	No. of books published with details:	-

Signature :durga bhavani

Date:05-02-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

BRANCH: .....Computer Science and Engineering.....

**Faculty Profile**



1.	Name:	Mr. RAJESH N V
2.	Date of Birth:	16/01/1985
3.	Unique ID:	1-729926767
4.	Education Qualification:	M.Tech (CSE)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	15 Years
6.	Area of Specialization:	Machine Learning
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	User Interface Design
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	-
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	-
13.	No. of books published with details:	-

Signature: Rajesh N V

Date: 01/02/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: COMPUTER SCIENCE AND ENGINEERING**

**Faculty Profile**



1.	Name:	Vidya R Pai
2.	Date of Birth:	06.02.1975
3.	Unique ID:	1-1455221301
4.	Education Qualification:	Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	 20 05 01
6.	Area of Specialization:	Computer Network Security
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Computer Networks, Data Communication, Computer Architecture, Network Security, Operating system, Introduction to C and C++
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	 -  Completed
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	01
11.	Technology Transfer:	02
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	-

Signature: Vidya R

Date: 19/01/24



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: COMPUTER SCIENCE AND ENGINEERING**

**Faculty Profile**



1.	Name:	AMBIKA G N
2.	Date of Birth:	02.06.1987
3.	Unique ID:	1-1455278591
4.	Education Qualification:	M.TECH
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	13 05 - -
6.	Area of Specialization:	AI AND DEEP LEARNING
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	DBMS, Computer Graphics, Computer Architecture, DMS, Soft Computing, AIML, JAVA J2EE
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	-  Ongoing
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	01
11.	Technology Transfer:	02
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	-

Signature: Ambika G N

Date:29.01.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Engineering**

**Faculty Profile**



1.	Name:	A.Mari Kirthima
2.	Date of Birth:	05.05.1981
3.	Unique ID:	
4.	Education Qualification:	B.E M.E
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	16 3 1
6.	Area of Specialization:	VANET
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	IOT, Principle of C programming
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
9.	Project Carried out:	VR technology Detecting oil spillage
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	NIL
13.	No. of books published with details:	NIL



Signature:

Date:8.01.2024



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: Computer Science and Engineering

Faculty Profile



1.	Name:	Guruprasad S
2.	Date of Birth:	08-08-1979
3.	Unique ID:	
4.	Education Qualification:	BE, M-Tech, (Phd)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	17 years
6.	Area of Specialization:	AI & machine Learning
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	DBMS, SE, C, C++, Java
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	06
13.	No. of books published with details:	-

Signature:

Date: 31/1/24



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**Computer Science & Engineering**

**BRANCH:** .....

**Faculty Profile**



1.	<b>Name:</b>	SHANKAR R
2.	<b>Date of Birth:</b>	25-05-1987
3.	<b>Unique ID:</b>	1298207611
4.	<b>Education Qualification:</b>	B.E, M.E, (Ph.D)
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	12 Years 7 Years 1 Year
6.	<b>Area of Specialization:</b>	Data Mining
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	RPA, CG&V, Java, C, Python, AI, IDT, SFH
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Completed Ongoing
9.	<b>Project Carried out:</b>	
10.	<b>Patents (Filed / Granted):</b>	Filed 1 Patent
11.	<b>Technology Transfer:</b>	MRIU, UPES, YIT, IBM etc
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	8
13.	<b>No. of books published with details:</b>	1 - Understanding Artificial Intelligence ISBN-13 : 979-8890665737 <a href="https://amzn.eu/d/bSHBzt4">https://amzn.eu/d/bSHBzt4</a>

**Signature**

**Date: 05-01-2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Computer Science and Engineering

**Faculty Profile**



1.	Name:	Dr. Lakshmi B.N
2.	Date of Birth:	20.05.1988
3.	Unique ID:	1-7428552215
4.	Education Qualification:	B.E., M.Tech, Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	5 6 0 4
6.	Area of Specialization:	Medical Informatics, Machine Learning
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	ATC, SE, C Programming, IoT, IDT, MCES, ACA
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	10
9.	Project Carried out:	0
10.	Patents (Filed / Granted):	1
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	55
13.	No. of books published with details:	0

Signature: \_\_\_\_\_

*Lakshmi B.N*

Date: 22/01/24



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: Computer Science and Engineering

Faculty Profile



1.	Name:	Dr. Dhanalakshmi B.K
2.	Date of Birth:	10.05.1985
3.	Unique ID:	1-9314223017
4.	Education Qualification:	B.E., M.Tech, Ph.D
5.	Work Experience:	
	a. Teaching:	10
	b. Research:	5
	c. Industry:	0
	d. Others:	0
6.	Area of Specialization:	Cloud Computing, Machine Learning
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	OS, DMS, UNIX, SS, ME, Cloud Computing, C Programming, C++
8.	Research Guidance (No. of Students)	
	a. No. of papers published in National / International Journals / Conferences:	11
	b. Master (Completed/Ongoing):	
	c. Ph.D (Completed/Ongoing):	2 (ongoing)
9.	Project Carried out:	1
10.	Patents (Filed / Granted):	1
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	11
13.	No. of books published with details:	0

Signature:

Date: 22/01/24



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: COMPUTER SCIENCE & ENGINEERING**

**Faculty Profile**



1.	Name:	Brunda S
2.	Date of Birth:	17-11-1993
3.	Unique ID:	15999
4.	Education Qualification:	BE, M.Tech
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 4.4 years  c. 1.10 years
6.	Area of Specialization:	Machine learning and Neural Networks
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Java, Theory of Computation, Computer Vision, Machine learning, Python, C/C++, Computer Organization, DBMS.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
9.	Project Carried out:	Hyper heuristic scheduling algorithm, early detection of lung cancer using machine learning
10.	Patents (Filed / Granted):	
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	3 papers
13.	No. of books published with details:	



Signature:

Date: 23/5/24



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**  
**Computer science and engineering**

**BRANCH:** .....

**Faculty Profile**



1.	Name:	SHILPA M
2.	Date of Birth:	28/03/1991
3.	Unique ID:	16000
4.	Education Qualification:	BE(ISE), MTech(CSE)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching:6 years
6.	Area of Specialization:	Data structure
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Data structure, Operating System, C programming, object oriented programming ,python, database management system
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D(Completed/Ongoing):	nil
9.	Project Carried out:	nil
10.	Patents (Filed / Granted):	nil
11.	Technology Transfer:	nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	nil
13.	No. of books published with details:	nil



Signature:

Date:23/05/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**



**BRANCH: CSE**

**Faculty Profile**

1.	Name:	Tanya Chandra
2.	Date of Birth:	19/09/1997
3.	Unique ID:	16003
4.	Education Qualification:	B.Tech CSE , M.Tech CSE
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	1.5 years teaching
6.	Area of Specialization:	Data science and ML
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Undergraduate
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D(Completed/Ongoing):	Masters completed
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	1
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	NIL
13.	No. of books published with details:	NIL

**Signature:**

**Date: 23.05.24**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

BRANCH: .....

**Faculty Profile**

Passport  
size  
photograph

1.	Name:	GOUTAMI CHENUMALLA
2.	Date of Birth:	23/04/1987
3.	Unique ID:	
4.	Education Qualification:	MCA,MTECH
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	TEACHING:3.5YRS RESEARCH:1YEAR INDUSTRY:2YEARS
6.	Area of Specialization:	PROGRAMMING AND DATABASE
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	DBMS,PYTHON,DATA STRUCTURES USING C,DATA ANAISYS
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Ph.D ONGOING
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	1
13.	No. of books published with details:	NIL

Signature: GOUTAMI.CH

Date:23/05/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

BRANCH: .....CSE.....

**Faculty Profile**



1.	Name:	JAI ARUL JOSE G.
2.	Date of Birth:	31-03-1977
3.	Unique ID:	
4.	Education Qualification:	B.Sc., MCA, M.Phil., Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	23 years
6.	Area of Specialization:	Information Security, Cryptography
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Python Programming, Discrete Mathematical Structures, Datastructures, Design and Analysis of Algorithms, Network Security, Computer Graphics
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D(Completed/Ongoing):	--
9.	Project Carried out:	--
10.	Patents (Filed / Granted):	--
11.	Technology Transfer:	--
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	23
13.	No. of books published with details:	--

Signature:

Date:



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT****YELAHANKA, BANGALORE - 560064****BRANCH: Computer Science & Engineering****Faculty Profile**

1.	Name:	Packiya Lekshmi S
2.	Date of Birth:	22-07-1989
3.	Unique ID:	1BYCS0023968
4.	Education Qualification:	B.Tech.,M.E.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	4 years 3 Months Nil Nil Nil
6.	Area of Specialization:	Big data, Computer Networks
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Database Management systems,C programming,Internet Technologies,Software Project Management,Software Engineering,Big Data Analytics
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Completed
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	Nil
13.	No. of books published with details:	Nil



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Engineering, Cluster-1**

**Faculty Profile**



1.	Name:	Dr. Mohammed Khurram J
2.	Date of Birth:	06.03.1983
3.	Unique ID:	
4.	Education Qualification:	B.E, M.Tech, Ph. D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 15.7 years b. 4 c. 2 d.
6.	Area of Specialization:	Computer Science, network, AI-ML
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	M.Tech -1 subject
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	a. 14 b. Completed c. Viva date is to be given
9.	Project Carried out:	
10.	Patents (Filed / Granted):	
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	12
13.	No. of books published with details:	

Md. Khurram

**Signature:**

**Date:5.3.2025**



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: CSE (Cluster - 2)

Faculty Profile



1.	Name:	Akshay Arora
2.	Date of Birth:	12/11/1994
3.	Unique ID:	1-43962447649
4.	Education Qualification:	M.Tech (Computer Networks, BE(CSE))
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	1 year, 10 months - - -
6.	Area of Specialization:	Computer Networks.
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Computer Networks, Cyber Security, Python programming, Machine Learning.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	- - - Ongoing -
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	-
13.	No. of books published with details:	-

Signature: Aaga

Date: 24/03/25



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

BRANCH: ...CSE(cluster 2).....

**Faculty Profile**



1.	Name:	Prof. Chandini A
2.	Date of Birth:	13/03/1997
3.	Unique ID:	16212
4.	Education Qualification:	Mtech(CSE)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	3 years 5 months
6.	Area of Specialization:	Internet of Things
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	TOC, DAA, DSA, Python Programming, C Programming, Java, Computer Networks, Data mining, IOT.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	2 (granted)
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	1 IEEE 2 National journal
13.	No. of books published with details:	NIL

Signature: \_\_\_\_\_

Date: 25/3/25



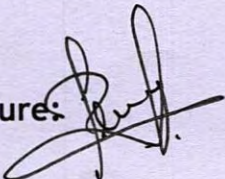
**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Engineering.**

**Faculty Profile**



1.	Name:	PRIYANKA M R
2.	Date of Birth:	30-06-1990
3.	Unique ID:	
4.	Education Qualification:	B.E,M.Tech
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	6 years 6months
6.	Area of Specialization:	COMPUTER SCIENCE AND ENGINEERING.
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Undergraduate & Post graduate level.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	a. - b. Masters Completed. c. Ph.D -Ongoing.
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	Filed-1
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	2
13.	No. of books published with details:	-

Signature: 

Date:12-02-2025



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: CSE.....**

**Faculty Profile**

Passport  
size  
photograph

1.	Name:	Arpitha Shivanna
2.	Date of Birth:	16-05-1993
3.	Unique ID:	16433
4.	Education Qualification:	BE, MTECH
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Industry- 6 years Teaching- 5 months
6.	Area of Specialization:	Computer Networks
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Undergraduate: Data warehousing and data mining
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NA
9.	Project Carried out:	NA
10.	Patents (Filed / Granted):	NA
11.	Technology Transfer:	NA
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	NA
13.	No. of books published with details:	NA

**Signature: Arpitha Shivanna**

**Date: 11-02-2025**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**



**BRANCH:** Computer Science and Engineering

**Faculty Profile**

1.	Name:	Beerappa
2.	Date of Birth:	01/12/1997
3.	Unique ID:	14209
4.	Education Qualification:	Diploma, B.E., M. Tech
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	N/A
6.	Area of Specialization:	Cyber Security
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Cyber Security, Operating Systems, Microcontrollers
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	a. 02
9.	Project Carried out:	Cyber Security Tools Evaluation and Selection Framework
10.	Patents (Filed / Granted):	N/A
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	02
13.	No. of books published with details:	N/A

Signature:

Date: 25/02/2025



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: Computer Science Engineering

Faculty Profile



1.	Name:	Sanjay S.D
2.	Date of Birth:	22-02-2000
3.	Unique ID:	
4.	Education Qualification:	BE. M.Tech
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	0.6 Years.
6.	Area of Specialization:	Computer Science Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	RMIPR (under graduate) Augmented Reality & Virtual Reality (post grad)
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	0-
9.	Project Carried out:	0-
10.	Patents (Filed / Granted):	0-
11.	Technology Transfer:	0-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	0-
13.	No. of books published with details:	0-

Sanjay S.D  
06/03/25

Signature:

Date: 06/03/25



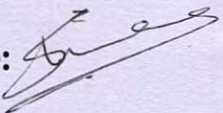
**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**



**BRANCH:** Department of Computer Science

**Faculty Profile**

1.	Name:	Shama H M
2.	Date of Birth:	14-09-1986
3.	Unique ID:	1BYCS0024512
4.	Education Qualification:	B. E, M. Sc in Engineering (Ph. D)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	6 months 4 years 5 years 3 years
6.	Area of Specialization:	Artificial Intelligence & Machine learning
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Innovation and Entrepreneurship Research methodology Cyber security Data structures and algorithms Python programming
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D. (Completed/Ongoing):	a. 2 b. Completed c. Ongoing
9.	Project Carried out:	16
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	2
13.	No. of books published with details:	NIL

Signature: 

Date: 20/3/2025



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT****YELAHANKA, BANGALORE - 560064****BRANCH:** *Computer Science & Engineering..***Faculty Profile**

	<b>Name:</b>	<b>NEETHA P U</b>
	<b>Date of Birth:</b>	<b>26/10/1995</b>
	<b>Unique ID:</b>	<b>16021</b>
	<b>Education Qualification:</b>	<b>PhD (Viva Completed)</b>
	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	<b>6 in Teaching</b> <b>4 in Research</b>
	<b>Area of Specialization:</b>	<b>Deep Learning in Medical Field</b>
	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<b>Computer Science and Engineering</b>
	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
	<b>Project Carried out:</b>	<b>-</b>
	<b>Patents (Filed / Granted):</b>	<b>1 published, 1 filled</b>
	<b>Technology Transfer:</b>	<b>-</b>



	Research Publications (No. of papers published in National / International Journals/ Conferences):	9 papers
	No. of books published with details:	-

Signature:

*Neethi*

Date: 24/03/2025



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Engineering**

**Faculty Profile**



1.	Name:	Chaitanya V
2.	Date of Birth:	23/01/1996
3.	Unique ID:	16578
4.	Education Qualification:	BE, ME
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching: 4.6
6.	Area of Specialization:	Computer science and Engineering (AIML)
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	UG: DBMS, Software Testing, OOPS with Java, DMS, Software Engineering and Project Management, Python, MongoDB, Software Testing lab, DBMS lab, Python Lab, CN Lab, Java Lab
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Master: Completed Ph.D: Ongoing
9.	Project Carried out:	2
10.	Patents (Filed / Granted):	Copyrights-1
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	
13.	No. of books published with details:	

**Signature: Chaitanya V**

**Date:25/01/2025**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Engineering**

**Faculty Profile**



1.	Name:	AJITH S
2.	Date of Birth:	02/07/1987
3.	Unique ID:	1-11336896183
4.	Education Qualification:	B.E, M.Tech, (P.hD)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	14 10  4 years(Technical Trainer)
6.	Area of Specialization:	Computer Science and Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Machine Learning, Operating System, Data Structures, Computer Network, Python Programming, JAVA, C/C++, Web Development, Data Science
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	Design Patent Granted-2, Filed-2 Software Copyrights-6
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	05
13.	No. of books published with details:	03 Fundamentals of OOP using C++ ISBN: 978-93-5659-384-8 Handbook on Python Programming ISBN: 978-93-94771-12-3 Prompt Engineering: Foundations and Techniques ISBN: 978-93-5980-196-4

Signature: \_\_\_\_\_

Date: 21-03-2025



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**

**YELAHANKA, BANGALORE - 560064**  
**BRANCH: COMPUTER SCIENCE & ENGG**

**Faculty Profile**



1.	<b>Name:</b>	<b>ARUNA N</b>
2.	<b>Date of Birth:</b>	<b>26-09-1983</b>
3.	<b>Unique ID:</b>	<b>18328</b>
4.	<b>Education Qualification:</b>	<b>BE,ME</b>
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	<b>A. 16YEARS</b>
6.	<b>Area of Specialization:</b>	<b>CSE</b>
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<b>C PROG, C++, JAVA, SE, ST, FSD,CYBER SECURITY, DATA STRUCTURES.</b>
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	<b>NIL</b>
9.	<b>Project Carried out:</b>	<b>NIL</b>
10.	<b>Patents (Filed / Granted):</b>	<b>NIL</b>
11.	<b>Technology Transfer:</b>	<b>NIL</b>
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	<b>NIL</b>
13.	<b>No. of books published with details:</b>	<b>NIL</b>

**Signature:**

**Date: 24/3/2025**



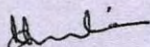
**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ECE Department**

**Faculty Profile**



1.	Name:	Dr. Ambika R
2.	Date of Birth:	10.07.1973
3.	Unique ID:	1-413816579
4.	Education Qualification:	M.E., Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	25 years 10 years - -
6.	Area of Specialization:	Network Security
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Network security, Digital Communication, Wireless Communication, Microwave Engineering.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	02 20 - 02
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	20
13.	No. of books published with details:	-

Signature: 

Date: 05.01.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT****YELAHANKA, BANGALORE - 560064****BRANCH: Department of Electronics and Communication Engineering****Faculty Profile**

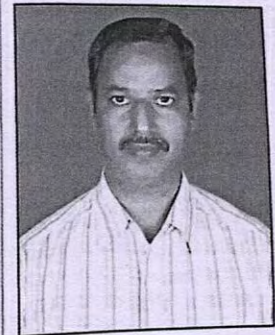
1.	Name:	Dr Shobha Rani A
2.	Date of Birth:	21/07/1978
3.	Unique ID:	
4.	Education Qualification:	PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	22 14
6.	Area of Specialization:	Wireless Networks
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Control Systems/Digital Signal Processing/ Management and Entrepreneurship/ Engineering Electromagnetics/ Antennas and Propagation / Satellite Communication/ UHV / ESLA/ Network Security
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	4 8 6 1 / 2
9.	Project Carried out:	Guided all UG projects
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	----
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	33
13.	No. of books published with details:	NIL

**Signature:****Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

BRANCH: Electronics & Communication Engineering



**Faculty Profile**

1.	Name:	Dr. G.S. Jayadeva
2.	Date of Birth:	17/07/1967
3.	Unique ID:	
4.	Education Qualification:	BE, M.Tech, PhD.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	33 years 18 years — —
6.	Area of Specialization:	Semiconductor Device, modelling, Low power VLSI
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	UG: Analog Electronics, Linear Integrated Circuits, Principles of Communication Systems, Optical networks, power electronics PG: Low power VLSI Design, Analog & mixed mode VLSI design
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	01  — 01 (ongoing)
9.	Project Carried out:	—
10.	Patents (Filed / Granted):	—
11.	Technology Transfer:	—
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	15 (15)
13.	No. of books published with details:	—

Signature: \_\_\_\_\_

*G. Jayadeva*

Date: 16/01/24



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Department of Electronics and Communication of  
Engineering

**Faculty Profile**



1.	Name:	Dr. M. C. Hanumantharaju
2.	Date of Birth:	20-09-1979
3.	Unique ID:	
4.	Education Qualification:	B.E, M.Tech, Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	20 Years 07 Years
6.	Area of Specialization:	VLSI/FPGA Signal and Image Processing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Analog Electronics, Digital System Design, Computer Architecture, VLSI Design, etc.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	07 65 05 03
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	65
13.	No. of books published with details:	02

**Signature:**

**Date:**



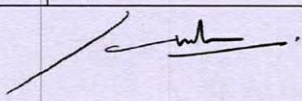
**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ELECTRONICS AND COMMUNICATION ENGINEERING**

**Faculty Profile**



1.	Name:	SANEESH CLEATUS THUNDIYIL
2.	Date of Birth:	20 Feb 1976
3.	Unique ID:	1-413816653
4.	Education Qualification:	M Tech., Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	19 09 08 -
6.	Area of Specialization:	Biomedical Signal Processing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Electromagnetics, Signal Processing, Neural Networks, Machine Learning, Digital/Analog Electronics etc.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	16  NA NA
9.	Project Carried out:	UG Projects, Consultancy Projects
10.	Patents (Filed / Granted):	03
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	16
13.	No. of books published with details:	-

  
Signature:

Date: 07.01.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** .....ECE.....

**Faculty Profile**



1.	<b>Name:</b>	Dr. Surekha.R.Gondkar
2.	<b>Date of Birth:</b>	24-08-1971
3.	<b>Unique ID:</b>	1BYTE0008759
4.	<b>Education Qualification:</b>	Ph.D
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	Teaching:28.5 Years
6.	<b>Area of Specialization:</b>	Ph.D-Image processing, M.E.-Digital Electronics B.E.-ECE
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	UG level- Network Analysis, Control Systems, Digital Signal Processing, Image Processing, Information Theory and Coding, linear integrated Circuits, Signals and Systems etc..
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	<b>Project Carried out:</b>	NIL
10.	<b>Patents (Filed / Granted):</b>	03
11.	<b>Technology Transfer:</b>	Guiding the UG students to carry out projects in Image processing/Signal processing domain
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	22
13.	<b>No. of books published with details:</b>	NIL



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064**

**BRANCH: ELECTRONICS AND COMMUNICATION ENGINEERING**

**Faculty Profile**

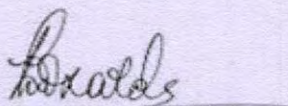


1.	Name:	Dr. VIJAYALAKSHMI G V
2.	Date of Birth:	03/02/1978
3.	Unique ID:	10008
4.	Education Qualification:	M.Tech., PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	20 years 01 year NA NA
6.	Area of Specialization:	Pattern Recognition, Machine Learning, image processing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	1. Signals and Systems 2. Digital Signal Processing 3. Information Theory and Coding 4. Control Systems 5. Biomedical Signal processing 6. Basic Electronics 7. Advanced Signal Processing 8. Cryptography 9. Transmission Lines and Waveguides 10. Neural Networks 11. Analog Electronics 12. Microwaves and Radar 13. Optical Fiber Communication 14. Satellite Communication
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NA
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	Granted: 01 Published: 01
11.	Technology Transfer:	Nil



12.	Research Publications (No. of papers published in National / International Journals/Conferences):	35
13.	No. of books published with details:	<p>Edited books</p> <p>Title: Deep Learning-Based Image Analysis Under Constrained and Unconstrained Environments</p> <p>Year: 2020</p> <p>Publisher: IGI Global</p> <p>DOI: 10.4018/978-1-7998-6690-9</p> <p>ISBN13: 9781799866909</p> <p>01</p> <p>02</p> <p>Title: Aiding Forensic Investigation Through Deep Learning and Machine Learning Frameworks</p> <p>Year: 2022</p> <p>Publisher: IGI Global</p> <p>DOI: 10.4018/978-1-6684-4558-7</p> <p>ISBN13: 9781668445587</p>

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**BRANCH:** Department of Electronics and Communication of Engineering

**Faculty Profile**



1.	Name:	Dr. Anil kumar D
2.	Date of Birth:	20-02-1981
3.	Unique ID:	
4.	Education Qualification:	MTech, PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	20 years 4 years 1 year
6.	Area of Specialization:	Embedded system design
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	BE(UG): Microcontrollers, Embedded controller, Computer Organization, Microprocessor, Basic electronics, Embedded system, Machine learning...
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	5 scholars  18 International journals  Ongoing PhD scholars
9.	Project Carried out:	Autonomous vehicle, ECU design for Hydrogen fuel cell etc
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Executive development Program on Machine learning
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	5 papers International Journals
13.	No. of books published with details:	1 book , Microcontroller and application.

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YELAHANKA, BANGALORE - 560064**

**BRANCH: ECE**

**Faculty Profile**

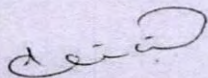


1.	<b>Name:</b>	<b>Dr.Anitha V R</b>
2.	<b>Date of Birth:</b>	<b>14.04.1979</b>
3.	<b>Unique ID:</b>	<b>1-419955841 (AICTE ID) 1BYEC0017123 (VTU ID)</b>
4.	<b>Education Qualification:</b>	<b>M.Tech., Ph.D</b>
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	<b>18.5 Years 16.5 Years</b>
6.	<b>Area of Specialization:</b>	<b>Antennas and Microwave Engineering</b>
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	Object Oriented Programming Language Computer Networks/Computer Organisation Microwave Engineering Optical Communications Digital Communications Electronic Devices and Circuits Digital Communication Techniques High Speed Networks Antenna Theory and Design Advanced Digital Signal Processing Information and Coding Techniques RF Systems and Circuits Radar System Engineering Smart Antennas Satellite Communication
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D(Completed/Ongoing):	<b>88</b>  <b>15</b> <b>02/05</b>
9.	<b>Project Carried out:</b>	1. Design and Development of Micro Cantilever Based Biosensor for Early Detection of High Risk Human Papilloma Virus.



		2. Simulation & Fabrication of a Reconfigurable Novel Fractal Tree Antenna for Multiband Applications 3. Antennas for Miniaturization 4. National MEMS Design Centre
10.	Patents (Filed / Granted):	<b>TITLE OF THE INVENTION:</b> CNTFET Based Biosensor 8X8 Array with Three Backgate Bias Potentials, Current Mirrors and Differential Amplifier for Maximizing Current and Voltage in Cervical Cancer Detection. <b>CBR No.</b> 11631 <b>Ref No.</b> E-12/306/2016/CHE <b>App.No.</b> 201641018534 <b>MEMBERSHIPS</b>
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	88
13.	No. of books published with details:	Nil

Signature:



Date: 05.01.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Department of Electronics and Communication Engineering

**Faculty Profile**



1.	Name:	Dr. Deepa N. Reddy
2.	Date of Birth:	26/05/1980
3.	Unique ID:	
4.	Education Qualification:	PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	20 10
6.	Area of Specialization:	Signal processing for Wireless Communication
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	SS/DSP/M&E/ESLA/WLTE/UHV/OOPs with C++/C/ DSPA/Satcomm/ITC/WC
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	---
9.	Project Carried out:	Guided all UG projects.
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	----
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	15
13.	No. of books published with details:	NIL

**Signature:**

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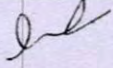
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**YELAHANKA, BANGALORE - 560064**

**BRANCH: Electronics and Communication Engineering**

**Faculty Profile**



1.	Name:	MAMATHA K R
2.	Date of Birth:	03/12/1977
3.	Unique ID:	
4.	Education Qualification:	M.Tech(Ph.D.)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	20 8 9 months
6.	Area of Specialization:	Signal Processing
7.	Course taught at Undergraduate Level:	BE, Introduction to Electronics Engg, Signal processing, DSP, SS, Image Processing, Cryptography, Computer Networks, Control system, DC, ITC, SATCOM, GSM, AEC, LD etc.,
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NA
9.	Project Carried out:	NA
10.	Patents (Filed / Granted):	Filed and published Patent in the Indian Patent Office
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	International Journals:12 International Conferences:12
13.	No. of books published with details:	NA, Book chapters:02

  
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**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Department of Electronics and Communication of Engineering

**Faculty Profile**



1.	Name:	Dr. RASHMI N
2.	Date of Birth:	10-03-1984
3.	Unique ID:	1451
4.	Education Qualification:	PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	17 08
6.	Area of Specialization:	WIRELESS COMMUNICATION, BLOCK CHAIN TECHNOLOGY, ANTENNA DESIGN
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	DIGITAL COMMUNICATION, MICROWAVE AND ANTENNA, NETWORK ANALYSIS, ARTIFICIAL NEURAL NETWORKS
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	19 JOURNALS 07 CONFERENCES
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	02 GRANTED 02 PUBLISHED
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	19 JOURNALS 07 CONFERENCES
13.	No. of books published with details:	04 BOOK CHAPTERS PUBLISHED

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**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ECE**

**Faculty Profile**



1.	Name:	Dr. Jagannatha KB
2.	Date of Birth:	31/10/1984
3.	Unique ID:	2724
4.	Education Qualification:	PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	15 7
6.	Area of Specialization:	Amorphous semiconductor, Solar cell, VLSI DESIGN
7.	Course taught at Diploma / Post Diploma / Under Graduate / Post Graduate / Post Graduate Diploma Level:	VLSI DESIGN, VERILOG HDL, Basic electronics, c++, optical fibers, GSM,
8.	Research Guidance: a. No. of papers published in National / International Journals / Conferences: b. Master: c. Ph.D:	
9.	Project Carried out:	Nil
10.	Patents:	Nil
11.	Technology Transfer:	Nil
12.	Research Publications:	15
13.	No. of books published with details:	Nil



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**BRANCH: Electronics and communication engineering**

**Faculty Profile**



1.	Name:	Mrs.Chandra Prabha R
2.	Date of Birth:	19/05/1982
3.	Unique ID:	
4.	Education Qualification:	Mtech (Ph.D)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	13 5
6.	Area of Specialization:	Machine Learning , image processing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Basic electronics, introduction to electronics , network analysis, operating system , satellite communication, network security, information theory and coding ,wireless communication,power electronics and instrumentation , power electronics, electronic instrumentation, biomedical signal processing, antenna and propogation, microwaves ,microprocessor
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	3
9.	Project Carried out:	1
10.	Patents (Filed / Granted):	Filed 1
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	7
13.	No. of books published with details:	nil

Signature:

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**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Department of Electronics and Communication of Engineering**

**Faculty Profile**



1.	Name:	DR. LAXMISAGAR H S
2.	Date of Birth:	01-06-1984
3.	Unique ID:	
4.	Education Qualification:	Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	13 YEARS 03 YEARS
6.	Area of Specialization:	VLSI, IMAGE PROCESSING and MACHINE LEAR.
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Communication, signal processing and VLSI related subjects for B.E Undergraduates
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	Brain Computer Interface
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	---
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	06 international journals 08 international conference
13.	No. of books published with details:	NIL

Signature:

Date: 08-02-24



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**YELAHANKA, BANGALORE - 560064**

**BRANCH: Department of Electronics and Communication of Engineering**

**Faculty Profile**



1.	Name:	Dr. Sabina Rahaman
2.	Date of Birth:	19/10/1981
3.	Unique ID:	
4.	Education Qualification:	PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	18 8
6.	Area of Specialization:	Thin film solar cells, VLSI DESIGN
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	VLSI design, Verilog HDL, microelectronics circuit, analog circuit, Linear integrated circuit, network analysis, control system, digital logic, DSP, network security, optical fiber communication, principal of communication systems, basic electronics etc.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	Project Carried out:	1
10.	Patents (Filed / Granted):	1
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	14
13.	No. of books published with details:	3



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064**

**BRANCH:ECE**

**Faculty Profile**



**Passport size  
photograph**

1.	<b>Name:</b>	ASHA G HAGARGUND
2.	<b>Date of Birth:</b>	01/07/1986
3.	<b>Unique ID:</b>	3712
4.	<b>Education Qualification:</b>	M.TECH(PH.D)
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	13 Years -- 01
6.	<b>Area of Specialization:</b>	Time Sensitive Networks
7.	<b>Course taught at Diploma / Post Diploma / Under Graduate / Post Graduate / Post Graduate Diploma Level:</b>	At UG Level: Computer networks Global System for Mobile Communication Digital Communication Analog Communication Python Application Programming
8.	<b>Research Guidance:</b> a. No. of papers published in National / International Journals / Conferences: b. Master: c. Ph.D:	NA
9.	<b>Project Carried out:</b>	1. Performance analysis of TSN standards 2. Patient health monitoring using wireless sensor network 3. Image to speech conversion 4. Sign language translation using machine learning algorithm 5. IOT based smart home



10.	Patents:	NA
11.	Technology Transfer:	NA
12.	Research Publications:	<ol style="list-style-type: none"> <li>1. "Smart and automatic health monitoring of patient using wireless sensor network." In <i>2018 9th International Conference on Computing, Communication and Networking Technologies (ICCCNT)</i>, pp. 1-7. IEEE, 2018.</li> <li>2. "DTPF algorithm based open-source Time-Sensitive Network leveraging SDN architecture." <i>IEEE Access</i> (2023).</li> <li>3. "Performance analysis of cost effective multi-hop Time Sensitive Network for IEEE 802.1 Qbv and IEEE 802.1 Qbu standards." In <i>Journal of Physics: Conference Series</i>, vol. 2161, no. 1, p. 012002. IOP Publishing, 2022.</li> <li>4. "Image to speech conversion for visually impaired." <i>International Journal of Latest Research in Engineering and Technology</i> 3, no. 06 (2017): 09-15.</li> <li>5. "Implementation of Global Ship Tracking And Monitor System." In <i>2022 IEEE North Karnataka Subsection Flagship International Conference (NKCon)</i>, pp. 1-6. IEEE, 2022.</li> <li>6. "Image to speech conversion for visually impaired." <i>International Journal of Latest Research in Engineering and Technology</i> 3, no. 06 (2017): 09-15.</li> </ol>
7.	No. of books published with details:	NA



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Electronics and Communication**

**Faculty Profile**



1.	Name:	Dr. Suryakanth B
2.	Date of Birth:	01/08/1981
3.	Unique ID:	1BYEC0007698
4.	Education Qualification:	Ph.d
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	15.5 years 7 years Nil Nil
6.	Area of Specialization:	Embedded system, Deep learning
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Undergraduate
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil  Completed
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	7
13.	No. of books published with details:	Nil



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**BRANCH:** Department of Electronics and Communication of  
Engineering

**Faculty Profile**



1.	<b>Name:</b>	SHIVARUDRAIAH B
2.	<b>Date of Birth:</b>	28-08-1987
3.	<b>Unique ID:</b>	4932
4.	<b>Education Qualification:</b>	M.Tech
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	12 years 6 years - -
6.	<b>Area of Specialization:</b>	VLSI Design and Embedded systems
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	Cryptography, Embedded system, Verilog HDL, Satellite communication, VSLI design Digital logic design, Basic Electronics, Microprocessors
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	- - -
9.	<b>Project Carried out:</b>	-
10.	<b>Patents (Filed / Granted):</b>	-
11.	<b>Technology Transfer:</b>	-
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	02
13.	<b>No. of books published with details:</b>	-

**Signature:**

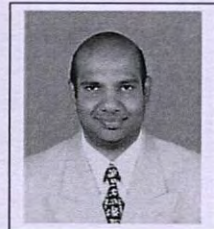
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**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Department of Electronics and Communication of Engineering

**Faculty Profile**



1.	Name:	THYAGARAJ T
2.	Date of Birth:	09/02/1980
3.	Unique ID:	5400
4.	Education Qualification:	B.E, M.TECH, MBA, (P.HD)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	18 0 2
6.	Area of Specialization:	MACHINE LEARNING, AI
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	DIGITAL ELECTRONICS, IMAGE PROCESSING, AUTOMOTIVE ELECTRONICS, COMPUTER NETWORKS, PATTERN RECOGNITION, PYTHON PROGRAMMING, WIRELESS COMMUNICATIONS
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	0
10.	Patents (Filed / Granted):	1(FILED
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	NIL

**Signature:**

**Date: 09/02/2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Electronics and Communication**

**Faculty Profile**



1.	<b>Name:</b>	Shilpa Hiremath
2.	<b>Date of Birth:</b>	4/12/1986
3.	<b>Unique ID:</b>	
4.	<b>Education Qualification:</b>	BE, M. Tech (Ph. D)
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	12.2 years
6.	<b>Area of Specialization:</b>	Image Processing
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	Digital Switching Systems, Microprocessor, Microcontroller, Wireless Communication, Operating Systems, Cryptography, Python programming Language, Digital Electronics, Analog Electronics, Digital System Design, Network Security, Information Theory and Coding
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	nil
9.	<b>Project Carried out:</b>	Cultivation in Agriculture using Swarm Technology in Robotics (CASTRO), Skin Disease Detection using Image Processing, Brain-Heart Connection for Psychological Health, Intelligent Spying and Bomb Detection, Smart Moto Helmet, Digital Image Forgery Detection Using Zernike Moment and Discrete Cosine Transform: A Comparison
10.	<b>Patents (Filed / Granted):</b>	nil
11.	<b>Technology Transfer:</b>	nil



12.	Research Publications (No. of papers published in National / International Journals/Conferences):	National Journal International Journal-06 National Conference-01 International Conference-02
13.	No. of books published with details:	nil

Signature: Shilpa Hiremath

Date:8/1/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Department of Electronics and Communication of  
Engineering

**Faculty Profile**



1.	Name:	Dr. Dankan Gowda V
2.	Date of Birth:	08.07.1987
3.	Unique ID:	10042
4.	Education Qualification:	Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	14 04 02 -
6.	Area of Specialization:	Signal Processing & IoT
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Network Analysis, Engineering Electromagnetics, Digital Communication, PCS, Satellite Communication, Analog Circuits, Control System.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	85 08 (UG-ongoing) 01 (ongoing)
9.	Project Carried out:	01
10.	Patents (Filed / Granted):	04( Granted) 08 (filed)
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	85
13.	No. of books published with details:	05

**Signature:**

**Date:01.02.2024**



BRANCH: Electronics &amp; Communication Engineering

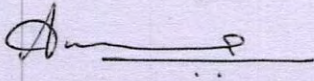
## Faculty Profile



1.	Name:	DR. ANNA MERINE GEORGE
2.	Date of Birth:	12-07-1990
3.	Unique ID:	14359
4.	Education Qualification:	M.Tech, Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	10 years NIL NIL NIL
6.	Area of Specialization:	Signal Processing, Machine Learning, Low power VLSI
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Signal Processing, Digital System Design, Analog Electronics, Intelligent Controllers, Machine learning & data Analytics, Introduction to IoT, Innovation & Design Thinking, Social Connect & Responsibility, Basic Electrical Engineering, Microcontroller Lab, Signal Processing Lab, HDL lab, Digital Electronics lab
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL Masters - completed Ph.D -completed
9.	Project Carried out:	Guided projects like smart blind stick, driver drowsiness alert system, Non-invasive glucometer, Brain Tumour Classification and Loan Eligibility prediction using Machine learning.
10.	Patents (Filed / Granted):	Part of PhD work submitted for patent (App No: 202241076137, patent published on 13-01-2023); Title: Digital Twin Technology for Adaptive Power Management of Indoor Photovoltaic based Energy Harvesting IoT Devices



11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	17
13.	No. of books published with details:	NIL



Signature:

Date: 06-01-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Electronics and Communication Engineering

**Faculty Profile**



1.	Name:	Dr. Asha K
2.	Date of Birth:	01.06.1983
3.	Unique ID:	1-456218647
4.	Education Qualification:	BE (Electronics and Communication Engineering) M.Tech (Digital communication and networking) PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	16 years (Teaching and Research)
6.	Area of Specialization:	Photonics and integrated optics, Digital communication and networking
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Undergraduate / Postgraduate / Post Graduate
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	ONE
9.	Project Carried out:	ONE
10.	Patents (Filed / Granted):	2
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	19
13.	No. of books published with details:	NIL

**Signature:**

**Date:09/01/2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Department of Electronics and Communication of Engineering



**Faculty Profile**

1.	<b>Name:</b>	Dr. Paramita Sarkar
2.	<b>Date of Birth:</b>	08.06.89
3.	<b>Unique ID:</b>	
4.	<b>Education Qualification:</b>	PhD, M.Tec, B.E.
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	<b>Teaching-</b> 3 years 11 months
6.	<b>Area of Specialization:</b>	Nanotechnology, Electronic Materials and Devices, Optoelectronics
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<b>Diploma-</b> Basic Electronics, Digital Electronics. <b>UG-</b> Principles of Communication Systems, Analog and Digital Communication, Nanoelectronics, Elements of Bioelectronics, Electronic Principles and Circuits.
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	<b>Research Guidance-</b> Nil
9.	<b>Project Carried out:</b>	Nil
10.	<b>Patents (Filed / Granted):</b>	01 Granted
11.	<b>Technology Transfer:</b>	NA
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	<b>Research Publications-</b> 23
13.	<b>No. of books published with details:</b>	Nil

Paramita Sarkar

**Signature:**

**Date:** 09.02.24



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Electronics and Communication Engineering

**Faculty Profile**



1.	<b>Name:</b>	<b>Dr ANITHA M</b>
2.	<b>Date of Birth:</b>	<b>08-02-1969</b>
3.	<b>Unique ID:</b>	
4.	<b>Education Qualification:</b>	<b>Ph.D, M.E,B.E</b>
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	<b>29 YEARS 6 MONTHS</b> <b>20 YEARS</b> <b>None</b> <b>NONE</b>
6.	<b>Area of Specialization:</b>	<b>Array signal processing and Data fusion</b>
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<b>Electronics and Communication Engineering</b>
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	<b>NONE</b>  <b>4 /4/ 8/9</b>  <b>Completed</b> <b>Completed</b>
9.	<b>Project Carried out:</b>	<b>40 UG 20 PG</b>
10.	<b>Patents (Filed / Granted):</b>	<b>None</b>
11.	<b>Technology Transfer:</b>	<b>None</b>
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	<b>24</b>
13.	<b>No. of books published with details:</b>	<b>1 Analysis of Detection Range of Wireless Adhoc Sensor Network Jaffer M. M. (Author), Anitha M. (Author), Mukesh Singh (Author) LAMBERT Academic Publishing</b>

**Signature:**

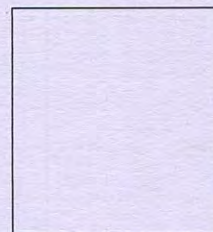
**Date:08-02-1969**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Department of Electronics and Communication of Engineering**

**Faculty Profile**



1.	Name:	Dr RAGHUNANDAN G H
2.	Date of Birth:	25-09-1987
3.	Unique ID:	805601110453
4.	Education Qualification:	BE,M.Tech,Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	13 Years 4.5Years 1Years
6.	Area of Specialization:	Wireless Sensor Networks
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Basic Electronics,Analog Electronics,Electronic Devices,Field Theory,Network Analysis,LIC,Digital Communication,Wireless Communication,Embedded System
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	25
9.	Project Carried out:	10
10.	Patents (Filed / Granted):	2 Filed
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	28
13.	No. of books published with details:	7 • Microcontroller(ARM) and Embedded System[This Book is prescribed as main Reference book for CSE/ISE/AIIML/DS of VTU 2018,2020,2021 Syllabus] published by Cengage Learning(Unit of McGraw Hill Education) in January 2020. (ISBN- 9353504104)



- |  |   |
|--|---|
|  | <ul style="list-style-type: none"><li>• Analog and Digital Electronics [This Book is prescribed as Prescribed book for CSE/ISE/AIML/DS of VTU 2018,2020,2021 Syllabus] published by Cengage Learning (Unit of McGrawHill Education) in August 2019. (ISBN-13: 9789353502355)</li><li>• Fundamentals of Logic Design [This Book is prescribed as main book for ECE/ETE of VTU 2018 Syllabus] published by Cengage Learning (Unit of McGrawHill Education) in August 2019 (ISBN-13: 9789353502645)</li><li>• Basic Electronics-A Simplified Approach, Published by Cengage Learning (Unit of McGrawHill Education), September 2018. (ISBN: 9789386668462)</li><li>• Linear Integrated Circuits Published by Cengage Learning (Unit of McGrawHill Education), February 2018. (ISBN: 978-93-875-1151-4)</li><li>• An Introduction to Basic Electronics Published by Cengage Learning (Unit of McGrawHill Education), February 2018 (ISBN: 978-93-875-1110-1)</li><li>• Analog Circuits Published by Infinite Learning Solutions, March 2021 (ISBN: 978-81-948862-0-4)</li></ul> |
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**Signature:**

**Date: 8-02-2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Electronics and Communication Engineering**

**Faculty Profile**



1.	<b>Name:</b>	Dr. P. Satheesh Kumar
2.	<b>Date of Birth:</b>	02.04.1988
3.	<b>Unique ID:</b>	1-1503053273
4.	<b>Education Qualification:</b>	PhD
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	13 - - -
6.	<b>Area of Specialization:</b>	RF Antenna Design
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	Network Theory, Antennas and Wave Propagation, Microwave Engineering, Electronic Circuits, Transmission Lines and Waveguides, RF Systems
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	45 Completed completed
9.	<b>Project Carried out:</b>	1. Development of a compact implantable antenna based on a novel skin matched for human body fat measurement 2. Super wideband, defected ground structure and metamaterial-based compact, flexible antenna for WLAN/ISM/WIMAX/USB and other wireless communication applications
10.	<b>Patents (Filed / Granted):</b>	Published a patent on "METAMATERIAL INSPIRED MIMO TRIPLE BAND ANTENNA WITH IMPROVED ISOLATION," Application No.202041039227 A, Publication Date: 18/09/2020, ISSUE NO. 38/2020.
11.	<b>Technology Transfer:</b>	
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	45



13. No. of books published with details:	-
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Signature:

*J. Sorang*

Date: 24.05.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Electronics and Communication Engineering**

**Faculty Profile**



1.	Name:	Soumya S. Vastrad
2.	Date of Birth:	12/04/1985
3.	Unique ID:	
4.	Education Qualification:	BE, M.Tech, (PhD)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 2.6 Years b. 7 Years c. 4 months
6.	Area of Specialization:	Wireless Sensor Networks
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Introduction to Electronics Engineering, Basic Electronics, Research Methodology.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	International Conferences: 2 International Journals: 1
13.	No. of books published with details:	Nil

**Signature: Soumya S. Vastrad**

**Date: 11/02/2025**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064**

**BRANCH: INFORMATION SCIENCE AND ENGINEERING**

**Faculty Profile**



1.	Name:	Dr. Manjunath T N
2.	Date of Birth:	22-11-1978
3.	Unique ID:	1-2918281466
4.	Education Qualification:	Ph.D
5.	Work Experience: a. Teaching: 11 b. Research: 5 c. Industry: 10 d. Others:	21Years
6.	Area of Specialization:	Datamanagment
7.	Course taught at Diploma / /Undergraduate	Software Testing, Database Management System, Data warehouse and Data Mining, Cloud Computing, Computer Organization, Advanced Computer Architecture, Computer Graphics, Unix Shell Scripting, Computer concepts & C Programming, Microprocessor and Microcontrollers
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	A. 73 B. 14 C. 7 (2 Awarded)
9.	Project Carried out:	POC Creation For Data Migration
10.	Patents (Filed / Granted):	01 filed
11.	Technology Transfer:	----
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	73
13.	No. of books published with details:	03 Books edited



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Information Science and Engineering**

**Faculty Profile**



	<b>Name:</b>	<b>Dr.Surekha K.B.</b>
<b>1.</b>	<b>Date of Birth:</b>	<b>01/02/1976</b>
<b>2.</b>	<b>Unique ID:</b>	<b>1-455200539</b>
<b>3.</b>	<b>Education Qualification:</b>	<b>B.E.,M.Tech.Ph.D.</b>
<b>4.</b>	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	<b>24 Years</b>
<b>5.</b>	<b>Area of Specialization:</b>	<b>Compute Networks,WSN,IoT</b>
<b>6.</b>	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<b>Computer Networks,IoT,Automata Theory and Computation</b>
<b>7.</b>	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	 <b>1</b>  <b>5</b> <b>2</b>
<b>8.</b>	<b>Project Carried out:</b>	<b>-</b>
<b>9.</b>	<b>Patents (Filed / Granted):</b>	<b>-</b>
<b>10.</b>	<b>Technology Transfer:</b>	<b>Resource</b>
<b>11.</b>	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	<b>15</b>
<b>12.</b>	<b>No. of books published with details:</b>	<b>-</b>



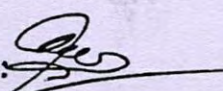
BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: INFORMATION SCIENCE & ENGINEERING

Faculty Profile



1.	Name:	Dr. NARASIMHA MURTHY MS
2.	Date of Birth:	20-12-75
3.	Unique ID:	1-7350091386
4.	Education Qualification:	Ph.D.,
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	22 8 0 1
6.	Area of Specialization:	Embedded Systems, Cloud Computing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	IoT, CSD, Microcontrollers, Microprocessors, logic Design,
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	04 27 - -
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	08
11.	Technology Transfer:	Internet of Things
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	-

Signature: 

Date: 29/1/24



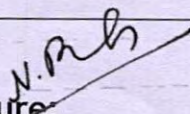
**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Information Science & Engineering**

**Faculty Profile**



1.	Name:	Dr. N. Rakesh
2.	Date of Birth:	24.01.1981
3.	Unique ID:	12177
4.	Education Qualification:	B.E, M.Tech, MBA, M.Sc.Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 19 b. Nil c. Nil d. Nil
6.	Area of Specialization:	His area of interest includes Computer Networks, VoIP security protocols and Virtual private networks, Wireless sensor Networks, the Internet of Things, Wireless Channel Modelling, Mobile Communication, Foundation of Data Science, Wireless Communication, and also exploring Machine Learning, and Deep Learning areas.
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	C, C++, Java/Operating Systems, Data structures, Design & Analysis of Algorithms, DBMS, Distributed OS, Computer Networks, IoT, Mobile Communication, Wireless Networks, Wireless Sensor Networks
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	02 a. International conference: 37 International Journals: 08 International Book Chapters: 09 b. Nil c. 02
9.	Project Carried out:	UG, PG
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	54
13.	No. of books published with details:	Nil

Signature: 

Date: 08.01.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: INFORMATION SCIENCE AND ENGINEERING**

**Faculty Profile**



1.	Name:	Dr. Pushpa S K
2.	Date of Birth:	22-07-72
3.	Unique ID:	1BYIS0006919
4.	Education Qualification:	BE, ME, Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 23 b. 10
6.	Area of Specialization:	Data Science, Wireless Sensor Networks
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Data Structure/ C Programing/ System Software/ Design and Analysis of Algorithms / Data Visualization
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	No. of Research Scholars - 5 a. 34  b. Nil c. Completed -1 Ongoing - 4
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	Filed - 1
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	34
13.	No. of books published with details:	-

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Engineering**

**Faculty Profile**



1.	<b>Name:</b>	Dr.Arun kumar B.R.
2.	<b>Date of Birth:</b>	01-06-1973
3.	<b>Unique ID:</b>	1-2184818803
4.	<b>Education Qualification:</b>	B.Sc., MCA, M.Tech.(CS&E), Ph.D (CS),PGDIPR (NLSIU)
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	Teaching : 25 Years
6.	<b>Area of Specialization:</b>	Computer Networks & Security: MANETs, Cyber security & Blockchain Technology
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<ul style="list-style-type: none"> <li>✓ Operating Systems</li> <li>✓ Data Communication</li> <li>✓ Computer Networks</li> <li>✓ Cryptography</li> <li>✓ Cyber Security</li> <li>✓ Intellectual property Rights</li> <li>✓ Cyber Law</li> <li>✓ Block chain Technology</li> <li>✓ Software Engineering</li> <li>✓ Computer Organization</li> <li>✓ Mobile ad hoc Networks</li> </ul>
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	No. of Ph. D students =3  a. International Journals= 6 papers, National/international Conference = 4 b. - c. (Awarded one Ph.D, guiding 3 Ph.D Scholars)
9.	<b>Project Carried out:</b>	-
10.	<b>Patents (Filed / Granted):</b>	-
11.	<b>Technology Transfer:</b>	
12.	<b>Research Publications (No. of papers published in National /</b>	International/National Journals= 55 papers National/international Conference = 30



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: COMPUTER SCIENCE AND ENGINEERING**

**Faculty Profile**



1.	Name:	Dr. Bhuvaneshwari C Melinamath
2.	Date of Birth:	09/09/1971
3.	Unique ID:	1-7409509905
4.	Education Qualification:	M.TECH, Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	28 09 - -
6.	Area of Specialization:	AI AND NLP
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	DBMS, Computer Graphics, Computer Architecture, DMS, AI, Soft computing, ADBMS. POP using C
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	03 3 7 01
9.	Project Carried out:	1
10.	Patents (Filed / Granted):	03
11.	Technology Transfer:	01
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	32
13.	No. of books published with details:	-

Signature:

Date:



	International Journals/Conferences):	
13.	No. of books published with details:	<p>Two Books:</p> <p>1. Handbook of Outcome-Based Education Model (OBE): Best Practices and Formats for OBE Implementation in Technical Higher Education Programs, 978-81-19315-93-2 (Print) 978-81-19315-92-5 (eBook), Pages 135, Book publishing International, India and UK, Published in July 2023, <a href="https://stm.bookpi.org/HOEMBPFITHEP/issue/view/1125">https://stm.bookpi.org/HOEMBPFITHEP/issue/view/1125</a>.</p> <p>2. Applications of Graph Theory Concepts to MANET Cross Layer Multicasting, LAMBERT ACADEMIC PUBLISHING, Deutschland, Germany , 2017, sole author, 978-3-330-07116-2</p>

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: INFORMATION SCIENCE AND ENGINEERING**

**Faculty Profile**



1.	Name:	Dr. sheela Kathavate
2.	Date of Birth:	23-05-1966
3.	Unique ID:	1-466159343
4.	Education Qualification:	Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a) 18 years b) 3 years c) 8 years
6.	Area of Specialization:	Parallel Computing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Operating Systems Management & Entrepreneurship Software Engineering Unix Shell Programming Unix System Programming
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	2 Students
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	14 papers
13.	No. of books published with details:	-

Signature: Sheela kathavate

Date:29-01-24



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**Information Science and Engineering**  
**BRANCH .....**

**Faculty Profile**



1.	Name:	Dr. Geeta Amol Patil
2.	Date of Birth:	29/09/1980
3.	Unique ID:	12169 (Emp. Id)
4.	Education Qualification:	B.E., M.Tech., Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	16 years 9 months 0 0 0
6.	Area of Specialization:	Computer Architecture
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	UG/PG
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D(Completed/Ongoing):	04 (Journal) / 10 (conference)  Completed Completed
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	04
13.	No. of books published with details:	NIL

Signature:

Date: 29/01/2024



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

Faculty Profile



1.	Name:	Dr. Prakash GL
2.	Date of Birth:	15/04/1978
3.	Unique ID:	11686
4.	Education Qualification:	BE,ME,PhD
5.	Work Experience: a. Teaching:----- b. Research: c. Industry: d. Others:	22 Years
6.	Area of Specialization:	Computer Science and Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Algorithms, C,C++, Java, Python programming, Data structures, Microprocessor, Logic design, DBMS, DMS, Computer Networks, OS, NoSql,AI
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed): c. Ph.D (Ongoing):	02 04 05 02
9.	Project Carried out:	
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	AWS Cloud tools and Services, PySpark, Latex Tool
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	26
13.	No. of books published with details:	NIL

Signature:

*[Handwritten Signature]* 4.05/01/2024

Date: 05-01-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: INFORMATION SCIENCE & ENGINEERING**

**Faculty Profile**



1.	Name:	Dr. SHOBA M
2.	Date of Birth:	19/07/1982
3.	Unique ID:	
4.	Education Qualification:	B.E (ISE), M.Tech(CSE), Ph.D(CSE)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	18 5 0 0
6.	Area of Specialization:	Wireless Sensor Networks, Data Science
7.	Course taught at Undergraduate / Postgraduate:	Data Structures, Introduction to Python Programming Language, Principles of C Programming, Design & Analysis of Algorithms, Automata Theory & Computability, File Structures, Software Testing
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	0/2/1 (with BMSIT Affiliation)  0 1 - Ongoing
9.	Project Carried out:	05 - UG Projects
10.	Patents (Filed / Granted):	0
11.	Technology Transfer:	Data Science, Deep Learning, Selenium
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	0/2/1 (with BMSIT Affiliation)
13.	No. of books published with details:	01 Big Data Analytics using Python, Scientific International Publishing House, ISBN 978-93-5625-195-3 / August 2022



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Information Science and Engineering**

**Faculty Profile**



1.	Name:	Dr Veena N
2.	Date of Birth:	01-06-1981
3.	Unique ID:	1-2919606127
4.	Education Qualification:	Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	20 years 6 Months
6.	Area of Specialization:	Artificial Intelligence and Machine Learning
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	C, DS, SCR, DS Lab, FS, FS Lab, JAVA, SE, ME, UNIX, DM, WEB
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Zero
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	2
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	11
13.	No. of books published with details:	0

**Signature:**

**Date: 11/1/2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

Information Science and Engineering  
BRANCH: .....

**Faculty Profile**



1.	Name:	Dr. Mohan B A
2.	Date of Birth:	27/07/1979
3.	Unique ID:	11703 (Emp. Id)
4.	Education Qualification:	B.E., M.Tech., Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	17 years 5 months 0 0 0
6.	Area of Specialization:	Computer Networks
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	UG/PG
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D(Completed/Ongoing):	01 (On going)  04 (Journal) 16 (conference)  Completed Completed
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	01 Filed 00 Granted
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	09
13.	No. of books published with details:	

Signature:

Date:



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Information Science and Engineering**

**Faculty Profile**



1.	<b>Name:</b>	<b>Chethana C</b>
2.	<b>Date of Birth:</b>	<b>20/08/1981</b>
3.	<b>Unique ID:</b>	<b>4310</b>
4.	<b>Education Qualification:</b>	<b>Mtech,(Ph.D)</b>
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	<b>19</b>  <b>1</b>
6.	<b>Area of Specialization:</b>	<b>AI and ML</b>
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<p align="center"><b>UG Courses</b></p> <p>Unix Shell Programing, Logic Design, System Software, Compiler Design, System Software, CCP,  Operation research, Operating system, Java &amp; J2EE, Operation research, System Modelling and Simulation, Neural Network, ,Cryptography and network security, Data mining and data warehousing,Machine Learning, Artificial Intelligence, Cloud Computing</p> <p align="center"><b>PG Courses</b></p> <p>Probability Statistics and Queuing Theory, Machine Learning techniques, Deep learning</p>
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	



9.	Project Carried out:	-
10.	Patents (Filed / Granted):	2
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	6
13.	No. of books published with details:	1) An Exploratory Study for Secure Software Development Life cycle with specificity towards Small and Medium Software firms in Bengaluru 2) AN EXPLORATORY STUDY TO REDUCE LEAD TIME IN SMALL AND MEDIUM LEVEL ENTERPRISES - IT SECTOR

Signature: Chethana C

Date:19/01/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Information Science and Engineering**

**Faculty Profile**



<b>Name:</b>	<b>Dr. Shanthi D L</b>
<b>Date of Birth:</b>	<b>01.06.1976</b>
<b>Unique ID:</b>	<b>1-1456816073</b>
<b>Education Qualification:</b>	<b>Ph.D</b>
<b>Work Experience:</b>	<b>22</b>
a. Teaching:	<b>20</b>
b. Research:	<b>07</b>
c. Industry:	<b>02</b>
d. Others:	
<b>Area of Specialization:</b>	<b>Wireless sensor networks, IoT, Data mining, Network Security</b>
<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<b>Data structures, C programming, C++, Java, Operating systems, File structures, Software Engineering, DBMS.</b>
<b>Research Guidance (No. of Students)</b>	<b>-</b>
a. No. of papers published in National / International Journals / Conferences:	<b>20</b>
b. Master (Completed/Ongoing):	<b>Completed</b>
c. Ph.D (Completed/Ongoing):	<b>Completed</b>
<b>Project Carried out:</b>	<b>-</b>
<b>Patents (Filed / Granted):</b>	<b>1 (Granted)</b>
<b>Technology Transfer:</b>	<b>-</b>
<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	<b>20</b>
<b>No. of books published with details:</b>	<b>Book chapters (03)</b>

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
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**BRANCH: Information Science and Engineering**

**Faculty Profile**



1.	Name:	Prof.S.Mahalakshmi
2.	Date of Birth:	08.06.82
3.	Unique ID:	1-1456899893
4.	Education Qualification:	M.E
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	18 yrs 5 months 8 yrs
6.	Area of Specialization:	Soft Computing , RPA, AIML, Image Processing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	RPA, DSA, OS, IMS, Unix, CPS, SFH, Compiler Design, DC, Web Tech, OOPs with Java,Shell Programming, Multicore Programming,C++
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
9.	Project Carried out:	
10.	Patents (Filed / Granted):	2 Granted
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	34
13.	No. of books published with details:	2 chapters

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
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BRANCH:

**Faculty Profile**



1.	Name:	CHANDRASHEKHARA.K.T
2.	Date of Birth:	05-08-1979
3.	Unique ID:	VTU: 1BYIS 0007854 College ID-4243 AICTE-ID: 1-1456936823
4.	Education Qualification:	B.E(CSE), M.Tech(CSE)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching - 14 Research - 05 Industry - 03
6.	Area of Specialization:	CSE, Data Science, Machine Learning
7.	Course taught at Diploma / Post Diploma / Under Graduate / Post Graduate / Post Graduate Diploma Level:	Computer-organization, BDA, Object Oriented Concepts using Java, Operating System, Data Mining, python
8.	Research Guidance: a. No. of papers published in National / International Journals / Conferences: b. Master: c. Ph.D:	15
9.	Project Carried out:	—
10.	Patents:	01
11.	Technology Transfer:	—
12.	Research Publications:	15
13.	No. of books published with details:	—



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**BRANCH: ...Information Science and Engineering ...**

**Faculty Profile**



1.	<b>Name:</b>	<b>Dr. Gireesh Babu C N</b>
2.	<b>Date of Birth:</b>	<b>01-06-1987</b>
3.	<b>Unique ID:</b>	<b>1-2186685228</b>
4.	<b>Education Qualification:</b>	<b>B.E, M.Tech, Ph.D</b>
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	<b>18</b> <b>12</b> <b>6</b>
6.	<b>Area of Specialization:</b>	<b>Computer Science and Engineering</b>
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<ul style="list-style-type: none"> <li>➤ Computer Concepts &amp; C – Language</li> <li>➤ Data Structures</li> <li>➤ Unix Shell Programming</li> <li>➤ Data Communications</li> <li>➤ Computer Networks</li> <li>➤ Operating Systems</li> <li>➤ JAVA &amp; J2EE</li> <li>➤ Object Oriented Modeling &amp; Design.</li> <li>➤ System Modeling &amp; Simulations</li> <li>➤ Python Application Programming</li> <li>➤ Machine Learning</li> <li>➤ Big data Analytics</li> </ul>
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
9.	<b>Project Carried out:</b>	
10.	<b>Patents (Filed / Granted):</b>	<b>Patent Filed: Machine Learning Algorithm-Based Automatic Sign Language Recognition System for Digital Hardware Implementation.</b>



11. Technology Transfer:	
12. Research Publications (No. of papers published in National / International Journals/Conferences):	12 -Journals 24 -Conferences
13. No. of books published with details:	

Signature:

Date:



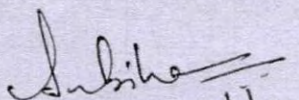
BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: I SE

Faculty Profile



1.	Name:	AMBIKA RANI SOBHASH
2.	Date of Birth:	17/05/1986
3.	Unique ID:	1-2186685248
4.	Education Qualification:	BE, M.Tech, (PHD).
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	10 02 0.6
6.	Area of Specialization:	AI-ML
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	UG - DMDW, Cyber Security, User Interface Design, M3E.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NA
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	03
13.	No. of books published with details:	-

  
Signature: 5/1/24

Date: 5/1/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: INFORMATION SCIENCE & ENGINEERING**

**Faculty Profile**



1.	Name:	Dr. Swetha M S
2.	Date of Birth:	16/04/1986
3.	Unique ID:	1-2482458129
4.	Education Qualification:	P.hD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching-16 Research-7
6.	Area of Specialization:	Cyber Security, Block Chain, IOT, Cloud Computing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	SEII/SE/CC/DS/DSN/DBMS /FAFL/ATC/CRYPTOGRPAHY/ CNS/ADA/CO/CPIL
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	-
9.	Project Carried out:	BLOCK CHAIN FOR HEALTH MONITORING SYSTEM
10.	Patents (Filed / Granted):	02
11.	Technology Transfer:	GANACHE/AWS/NS2/BC
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	International Journals -20 International Conferences-35
13.	No. of books published with details:	

Signature: Swetha M S

Date:19-01-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Information Science and Engineering**

**Faculty Profile**



1.	Name:	Dr. VINUTHA K
2.	Date of Birth:	04-02-1990
3.	Unique ID:	
4.	Education Qualification:	BE, M.Tech, Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	9.5 years 7 years
6.	Area of Specialization:	CSE, AI and ML
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	DAA,CSD,IOT,AI and ML, SMS, Python programming, UID,DBMS,ST
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	-
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	Journals: 6 Conferences: 7
13.	No. of books published with details:	nil

Signature: Vinutha K

Date:19/1/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**Information Science and Engineering**

**BRANCH:** .....

**Faculty Profile**



1.	Name:	Dr. Ravi Kumar B N
2.	Date of Birth:	10/05/1987
3.	Unique ID:	5663
4.	Education Qualification:	B.E, M.Tech, Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	13 5 2 -
6.	Area of Specialization:	Computer Science and Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	AI, Python, Java, C, OOPS, OOMD, ACA, UNIX
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	1
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	7
13.	No. of books published with details:	NIL

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: INFORMATION SCIENCE AND ENGINEERING**

**Faculty Profile**



1.	Name:	Dr SAVITHA S
2.	Date of Birth:	01-08-1982
3.	Unique ID:	1-10082920
4.	Education Qualification:	B.E, M.E, PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	15years 3months
6.	Area of Specialization:	Wireless Sensor Networks
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Undergraduate and Postgraduate level Operating System, DMS, Microprocessor, Computer Organization, Digital Design, Microcontrollers and Embedded Systems, Automata theory, Cryptography and Network Security, Advanced OS, Data communications, Embedded Systems.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	03
11.	Technology Transfer:	AWS, BioInformatics, Genetic Algorithms
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	a) International Journals - 9 b) International Conferences - 2
13.	No. of books published with details:	NIL

Signature: Savitha S

Date:20-01-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ISE**

**Faculty Profile**



1.	Name:	Dr.Basavaraj G. N
2.	Date of Birth:	01/05/1978
3.	Unique ID:	
4.	Education Qualification:	Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	14Years
6.	Area of Specialization:	Computer Science and Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	DBMS,Software Tesing,System Software,DMS,C,Python
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	1
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	12
13.	No. of books published with details:	Nil

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:ISE**

**Faculty Profile**



1.	Name:	Dr.Kalai Vani YS
2.	Date of Birth:	10-06-1975
3.	Unique ID:	14366
4.	Education Qualification:	MCA,PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a)14 b)5 c)2
6.	Area of Specialization:	Machine Learning
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	BSC,BE,MCA
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	nil
9.	Project Carried out:	nil
10.	Patents (Filed / Granted):	nil
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	a) International Journals - 6 b) National Journals - 3 c) International Conferences - 6 d) National conferences - 5
13.	No. of books published with details:	nil

**Signature:**

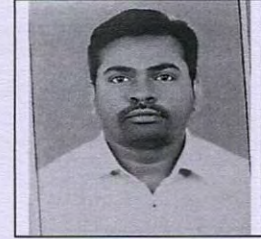
**Date:8/1/2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Information Science & Engineering

**Faculty Profile**



1.	Name:	Dr. Harish Kumar N
2.	Date of Birth:	03/12/1987
3.	Unique ID:	14372
4.	Education Qualification:	BE, M.Tech, Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	13 years 05 years NIL NIL
6.	Area of Specialization:	Networking, IoT, Machine Learning
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	C, C++, Python, Graph Theory, DMS, RPA, Cryptography
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL 40 NIL NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	40
13.	No. of books published with details:	NIL

**Signature:**

*Harish Kumar N*

**Date:** 19/01/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Information Science and Engineering**

**Faculty Profile**



1.	Name:	Dr.Srinivas B V
2.	Date of Birth:	13/09/1986
3.	Unique ID:	College id:14386/ Aicte Id:1-1427447188
4.	Education Qualification:	Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a)12.4 b)4.5 c)1
6.	Area of Specialization:	Cloud Computing and Artificial Intelligence.
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Data Structures,C Programming,Operating Systems,Python Programming,System Modelling and Simulation,Cloud Computing,Operations Research,System Software.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	Project Carried out:	2
10.	Patents (Filed / Granted):	1
11.	Technology Transfer:	3
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	12
13.	No. of books published with details:	Nil

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Department of Information Science and Engineering

**Faculty Profile**



1.	Name:	BHAVYA G
2.	Date of Birth:	23.05.1990
3.	Unique ID:	
4.	Education Qualification:	M.Tech
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	8Yrs
6.	Area of Specialization:	COMPUTER SCIENCE AND ENGINEERING
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Data Science, Web Technology, Introduction to python programming, Design and Analysis of algorithm, theory of computation.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	11
13.	No. of books published with details:	-

**Signature: Bhavya G**

**Date: 19.1.2024**



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: INFORMATION SCIENCE & ENGINEERING

Faculty Profile



1.	Name:	SONNEGOWDA K
2.	Date of Birth:	17-12-1989
3.	Unique ID:	
4.	Education Qualification:	M.TECH in COMPUTER SCIENCE & ENGINEERING
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	4 YEARS 0 0 0
6.	Area of Specialization:	COMPUTER SCIENCE(CYBERSECURITY)
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	UG: PYTHON, C, C++, HTML, DBMS, UNIX, DATA STRUCTURE, OS PG: PYTHON, R
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	NIL
13.	No. of books published with details:	NIL

Signature:

Date: 23-05-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Information Science & Engineering**

.....



**Faculty Profile**

1.	Name:	VINAYKUMAR Y B
2.	Date of Birth:	13-02-1984
3.	Unique ID:	
4.	Education Qualification:	B E (ISE) , M E (CNE), (PhD)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	15.3 years NIL 2 years NIL
6.	Area of Specialization:	Machine Learning, Web Programming
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	UNIX shell/System programming, Data mining, web Technology and its applications, Operation Research, Software Practice & Testing, Java and J2EE, Programming the Web, Software Testing, Database Management Systems, Object oriented programming with C++, Principle of Programming.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D(Completed/Ongoing):	NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	2
13.	No. of books published with details:	NIL



Signature:

Date: 23-5-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

BRANCH: ISE

**Faculty Profile**



1.	Name:	ANNAPAREDDY. HAARIKA
2.	Date of Birth:	05-06-1991
3.	Unique ID:	1-44081384302
4.	Education Qualification:	B.Tech, M.Tech
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 7.4 b. NIL c. NIL d. NIL
6.	Area of Specialization:	IOT, COMPUTER NETWORKS, BLOCKCHAIN
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	OS, CN, ADA, EDGE COMPUTING, Data Analytics, python programming, C, Data Structures, DBMS
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	1 Granted
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	01
13.	No. of books published with details:	NIL

*Annapareddy Haarika*  
Signature:

Date: 13-02-2025



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**

**YELAHANKA, BANGALORE - 560064**

**BRANCH: INFORMATION SCIENCE AND ENGINEERING**

**Faculty Profile**



1.	Name:	AMULYA P
2.	Date of Birth:	04-02-1997
3.	Unique ID:	
4.	Education Qualification:	M.Tech
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	2.8 years
6.	Area of Specialization:	Cloud Computing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Data structures, Design and analysis of Algorithms, Theory of Computation, Python, Introduction to C Programming
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	nil
9.	Project Carried out:	nil
10.	Patents (Filed / Granted):	01
11.	Technology Transfer:	nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	01
13.	No. of books published with details:	nil

*Amulya P*

**Signature:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064**

**BRANCH:** INFORMATION SCIENCE & ENGINEERING

**Faculty Profile**



1.	Name:	MALINI.M
2.	Date of Birth:	21-Sep-1979
3.	Unique ID:	18208 1-7486295839
4.	Education Qualification:	BSc, MCA, MTech, (PhD)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 15 yrs. b. NIL c. NIL d. NIL
6.	Area of Specialization:	Image Processing, Deep Learning
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Python, OS, CN, DS, DBMS, MAD, TOC, WebStack, Unix, RM
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	6
13.	No. of books published with details:	NIL

*Malini*

**Signature:**

**Date:** 14-02-25



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Information Science and Engineering**

**Faculty Profile**



1.	Name:	Sowmya.K
2.	Date of Birth:	04/06/1990
3.	Unique ID:	
4.	Education Qualification:	BE(CSE), M.Tech(CSE)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	6 Months 0 1.8 Years 9 Years
6.	Area of Specialization:	AI, Cybersecurity
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	C, C++, DBMS, OS, AI, Devops, Software Testing,
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	NIL
13.	No. of books published with details:	NIL

Signature: *Sowmya.K*

Date: 13/02/2025



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: INFORMATION SCIENCE AND ENGINEERING**

**Faculty Profile**



1.	Name:	PUSHPANATHAN G
2.	Date of Birth:	09/08/1992
3.	Unique ID:	16798
4.	Education Qualification:	M Tech
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 8 YEARS 7 MONTHS
6.	Area of Specialization:	WIRELESS NETWORK COMMUNICATIONS AND IOT
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	UG: 1. Data Structures and Applications 2. Design and Analysis of Algorithms 3. Object Oriented Concepts 4. Automata Theory and Computability 5. Web Technologies and its Applications 6. Full Stack Development 7. .Net Programming for Application Development 8. Unix Shell Programming 9. System Modeling & Simulation 10. Introduction to Python Programming
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	a) 2 b) Completed c) Ongoing
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	FILED 2
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	2
13.	No. of books published with details:	1 (ANALYSIS AND DESIGN OF ALGORITHMS LECTURE NOTES ISBN NUMBER: 978-93-340-9388-9)

**Signature:**

**Date:**



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: ..... *Information Science and Engineering* .....

Faculty Profile



1.	Name:	SPANDANA L
2.	Date of Birth:	25/02/1998
3.	Unique ID:	1- 4336352823
4.	Education Qualification:	B.E, M. Tech
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	2.2 years 0.6
6.	Area of Specialization:	Machine Learning, AIML
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Python Programming, C++ programming, Artificial Intelligence
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	-
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	01
13.	No. of books published with details:	-

*Spandana L.*

Signature:

Date: 13/02/2025



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: MECHANICAL ENGINEERING

Faculty Profile



1.	Name:	Dr. K.M. SATHISH KUMAR.
2.	Date of Birth:	06. 07. 1976
3.	Unique ID:	
4.	Education Qualification:	B.E, M.Tech, PhD, FIE.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	24 Years
6.	Area of Specialization:	Condition Monitoring, Advanced Manufacturing.
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Computer Integrated manufacturing Mechatronics Automation
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	International Journal: 16 International Conference: 19 National Conference: 12 M.Tech (Completed): 05 Ph.D - Completed: 02, ongoing 02.
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	Refer SL. no. 8.
13.	No. of books published with details:	01. A Text book on Computer Integrated manufacturing.

Signature: K.M. Sathish Kumar

Date: 20.01.2024.



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

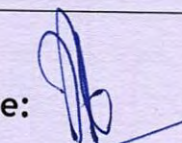
**BRANCH: Mechanical Engineering**

**Faculty Profile**



1.	Name:	Dr Madhu MC
2.	Date of Birth:	15.05.1966
3.	Unique ID:	1- 2482267683
4.	Education Qualification:	BE,M.Tech,Phd
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a)20 years b)3 years c)3 years
6.	Area of Specialization:	Thermal power Engineering ,Renewable energy (Solar energy)
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	At UG: Fluid Mechanics, Thermodynamics Automobile Engineering, Renewable energy systems,elements of Mechanical Engineering
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	Project Carried out:	02
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences)	a)0 2 International conference ,01National conference,7 International journals (Scopus/WoS,Q2 ,Q4)
13.	No. of books published with details:	Nil

Signature:

  
Dr. Madhu MC

Date: 11.2.2025



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**  
**BRANCH: Mechanical Engineering**



### Faculty Profile

1.	Name:	Praveen Kumar T N
2.	Date of Birth:	01-06-1972
3.	Unique ID:	
4.	Education Qualification:	BE: Mechanical Engineering M.Tech: Production Engineering System Technology
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	26 Years 10 Years Nil Nil
6.	Area of Specialization:	Production Engineering System Technology
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Innovation and Design Thinking Cyber and Intellectual Property Law Material Science, Introduction to Mechanical Engineering
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	Project Carried out:	VTU Research Grant Scheme: Rs.06Lakhs
10.	Patents (Filed / Granted):	Filed:02
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	National Journals : 06 International Journals : 02 National Conferences : 05 International Conferences: 06
13.	No. of books published with details:	Nil

Signature:

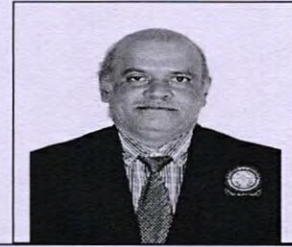
Date:



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: MECHANICAL ENGINEERING**

**Faculty Profile**



1.	Name:	G L ANANTHA KRISHNA
2.	Date of Birth:	25-04-1971
3.	Unique ID:	
4.	Education Qualification:	ME, PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 21 years b. 06 years c. 03 years
6.	Area of Specialization:	Design engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	UG: Engineering drawing, Mechanics of materials, Mechanical vibrations, Design of machine elements I and II, Human resources management, Design lab, Analysis lab PG: Advanced machine design, Continuum mechanics
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D(Completed/Ongoing):	a. Nil b. 06 c. Nil
9.	Project Carried out:	-----
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	13 publications
13.	No. of books published with details:	Nil

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Mechanical Engineering**

**Faculty Profile**



1.	<b>Name:</b>	<b>Dr. O.Gurumurthy</b>
2.	<b>Date of Birth:</b>	<b>01/07/1974</b>
3.	<b>Unique ID:</b>	
4.	<b>Education Qualification:</b>	<b>B.Tech, M.E, Ph.D</b>
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	<b>Teaching: 22Y</b> <b>Research: 1Y</b> <b>Industry/Others: Nil</b>
6.	<b>Area of Specialization:</b>	<b>Advanced Materials &amp; Manufacturing Engineering</b>
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<b>Diploma / Post Diploma: Nil</b> <b>Undergraduate: Elements of Mechanical Engineering, Engineering Graphics &amp; Computer Aided Engineering Drawing, Computer Aided Machine Drawing, Material Science, Manufacturing Process - I&amp;II, CAD/CAM, Fluid Power Engineering, Automation &amp; Robotics, NDT.</b> <b>PG/Post Graduate Diploma Level: Nil</b>
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	<b>Nil</b>
9.	<b>Project Carried out:</b>	<b>Nil</b>
10.	<b>Patents (Filed / Granted):</b>	<b>Nil</b>
11.	<b>Technology Transfer:</b>	<b>Nil</b>
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	<b>03</b>
13.	<b>No. of books published with details:</b>	<b>Nil</b>

**Signature:**

**Date: 07/02/2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: MECHANICAL ENGINEERING**

**Faculty Profile**



1.	Name:	K CHANDRA SEKHARA REDDY
2.	Date of Birth:	04/03/1979
3.	Unique ID:	1412362179
4.	Education Qualification:	M.Tech (Ph.D)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	18 06
6.	Area of Specialization:	INDUSTRIAL ENGINEERING
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Control Engineering, Managemnt & Entrepreneurship, Entrepreneurship Development, Total Qulaity Management, Introduction To Mechanical Engineering, Engineering Graphics, statistical Quality Control , Managemnt & Engineering Economics
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
9.	Project Carried out:	18 ( for UG)
10.	Patents (Filed / Granted):	..
11.	Technology Transfer:	..
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	09
13.	No. of books published with details:	--

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**  
**BRANCH: MECHANICAL ENGINEERING**



**Faculty Profile**

1.	Name:	Dr. Shripad Diwakar
2.	Date of Birth:	03/07/1973
3.	Unique ID:	2652
4.	Education Qualification:	Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Total 28 Years of work experience 23 10 05 ---
6.	Area of Specialization:	Thermal Science & Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Basic Thermodynamics Applied Thermodynamics Fluid Mechanics Energy Engineering Power Plant Engineering Energy & Environment Elements of Mechanical Engineering Computer Aided Engineering Drawing
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	10
9.	Project Carried out:	-----
10.	Patents (Filed / Granted):	-----
11.	Technology Transfer:	-----
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	-----

Signature:

Date: 07/02/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Mechanical Engineering**

**Faculty Profile**



1.	Name:	S.Nithya Poornima
2.	Date of Birth:	15/03/1982
3.	Unique ID:	2673
4.	Education Qualification:	M-tech(Ph.D)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	15 3
6.	Area of Specialization:	Computer Integrated and Manufacturing, Nano materials
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Mechatronics, Robotics, Automation and robotics, Operations Management, Operations research, Supply chain Management, Financial Management and Elements of mechanical engineering
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
9.	Project Carried out:	N/A
10.	Patents (Filed / Granted):	N/A
11.	Technology Transfer:	N/A
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	8
13.	No. of books published with details:	Nil

**Signature:**

**Date: 7/2/2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Mechanical Engineering**

**Faculty Profile**



1.	Name:	Sriganesh T G
2.	Date of Birth:	21/05/1986
3.	Unique ID:	3749
4.	Education Qualification:	B.E, M.Tech, (Ph.D)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	13 years 05 years
6.	Area of Specialization:	CIM
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Engineering Drawing, Machine Drawing, Additive Manufacturing, Non Traditional Machining, Elements of Mechanical Engineering
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	-
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	-

**Signature:**

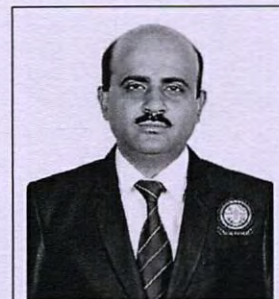
**Date:08/02/2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064**

**BRANCH: MECHANICAL ENGINEERING**

**Faculty Profile**



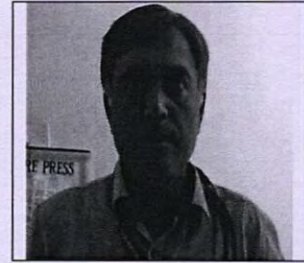
1.	Name:	SUNDARESH S
2.	Date of Birth:	20.04.1976
3.	Unique ID:	1-1456633523
4.	Education Qualification:	M.Tech (Ph.D)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	20 05
6.	Area of Specialization:	Product Design and Manufacturing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Mechanics of Materials Mechanical Measurements and Metrology Design for Manufacture and Assembly Engineering Graphics Design Optimization
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	02
13.	No. of books published with details:	01 Elements of Mechanical Engineering Subhas Publications, Bangalore



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Mechanical Engg**

**Faculty Profile**



1.	<b>Name:</b>	JAGADEESH.Y.J
2.	<b>Date of Birth:</b>	11.05.1968
3.	<b>Unique ID:</b>	1-2186685278
4.	<b>Education Qualification:</b>	Ph.D
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	A:30 years B:05 years
6.	<b>Area of Specialization:</b>	Thermal and CFD
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	Graduate: Thermodynamics, Fluid Dynamics, Microprocessor, Elements of Mechanical Engg, CAED, Turbomachines, Computational Fluid Dynamics ,Power Plant Engg etc.. Lab: Fluid Mechaincs, Heat Transfer, Material Testing ,Workshop, Machine hop etc. Post Graduate: Advanced Thermodynamics, Advanced Fluid Mechanics, Steam And Gas Turbine, Computational Fluid Dynamics, Power Plant Engg etc..
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	<b>Project Carried out:</b>	NIL
10.	<b>Patents (Filed / Granted):</b>	NIL
11.	<b>Technology Transfer:</b>	NIL



12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	NIL



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Mechanical Engineering**

**Faculty Profile**



1.	Name:	Dr. Keerthi Kumar N
2.	Date of Birth:	10/05/1986
3.	Unique ID:	1BYME0007789
4.	Education Qualification:	Ph.D, M.Tech
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	15 15 3 -- --
6.	Area of Specialization:	Thermal Power Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Heat and Mass Transfer, Turbomachines, Fluid Mechanics, Basic Thermodynamics, Computer Aided Engineering Drawing, Elements of Mechanical Engineering, Computer Aided Machine Drawing
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	--
9.	Project Carried out:	--
10.	Patents (Filed / Granted):	03
11.	Technology Transfer:	--
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	18
13.	No. of books published with details:	01, Turbomachines, Cengage publishers, ISBN: 93-86668-16-5

Signature:

Date:07/02/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Mechanical Engineering**

**Faculty Profile**



1.	Name:	Dr. Kiran M D
2.	Date of Birth:	02.06.1985
3.	Unique ID:	
4.	Education Qualification:	Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	14 06
6.	Area of Specialization:	Machine Design
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Kinematics of Machines, Dynamics of Machines, Tribology and Bearing Design, Theory of Elasticity, Fracture Mechanics, Design of machine elements, Python Programming
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	21
13.	No. of books published with details:	Nil

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064**

**Mechanical**

**BRANCH:** .....

**Faculty Profile**



1.	Name:	Dr.MADHU M.C
2.	Date of Birth:	15.05.1966
3.	Unique ID:	
4.	Education Qualification:	BE MTech PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	20 04 04
6.	Area of Specialization:	Thermal power systems, Renewable Energy(Solar energy)
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	UG: Fluid mechanics, Automobile Engineering ,Elements of Mechanical engineering, Nonconventional energy sources,CAED,Energy Engg
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	_____
9.	Project Carried out:	Total 8
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	_____
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	6 Journals(Scopus Indexed) 2 International conference 1 national conference
13.	No. of books published with details:	01 Title :Elements of Mechanical Engineering Publishers : Skyward Publishers ,Bangalore ISBN:978-93-84494-99-5

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

BRANCH: .....Mechanical.....

**Faculty Profile**



1.	Name:	Dr. Avinash
2.	Date of Birth:	21-10-1989
3.	Unique ID:	10006
4.	Education Qualification:	BE, MS, PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	5 13 2
6.	Area of Specialization:	Combustion
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Basic thermodynamics, Engineering graphics, Elements of Mechanical Engineering
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	a.9
9.	Project Carried out:	6
10.	Patents (Filed / Granted):	NA
11.	Technology Transfer:	NA
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	9
13.	No. of books published with details:	1 book chapter

Signature:

Date:



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Mechanical Engineering**

**Faculty Profile**



1.	Name:	Dr. Nagamadhu M
2.	Date of Birth:	10/09/1985
3.	Unique ID:	1-2187342869
4.	Education Qualification:	BE, M Tech, PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	13 02 (Teaching and Research 13) 01
6.	Area of Specialization:	Machine Design, Sintering, Additive Manufacturing, Vacuum Technology etc.
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Advanced Machine Design, DME 1 and 2, Tribology, Elasticity, Mechanics of Materials, Dynamic of Materials, Composites, Advanced Materials Technology, Nondestructive testing, CAED, CAMA, FEM, MT, F&F, MT etc..
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	14  Completed Completed
9.	Project Carried out:	
10.	Patents (Filed / Granted):	Filed 06 and granted 01
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	41
13.	No. of books published with details:	01



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: MECHANICAL ENGINEERING**

**Faculty Profile**



1.	Name:	Dr CHETHAN D
2.	Date of Birth:	15.04.1983
3.	Unique ID:	1MVME0005555
4.	Education Qualification:	BE, M Tech, PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching: 18yrs
6.	Area of Specialization:	Machine Design, FSW
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	CAED, MOM, Machine Design, Theory of Machines, Operations Management, Operations Research Etc.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	11  Completed Completed
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	01
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	11
13.	No. of books published with details:	-

**Signature:**

**Date:05.03.2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Mechanical Engineering**

**Faculty Profile**



1.	Name:	Dr. SRINIDHI ACHARYA S R
2.	Date of Birth:	16 JAN 1988
3.	Unique ID:	1-1433537543
4.	Education Qualification:	B.E (Mechanical), M.Tech (Machine Design) Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	12.8 years 03 years
6.	Area of Specialization:	Machine Design and Vibration Analysis
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Design of Machine Elements Kinematics/Dynamics of Machines Mechanical of Materials Engineering Drawing/Machine Drawing
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	05 NA NA
9.	Project Carried out:	NA
10.	Patents (Filed / Granted):	NA
11.	Technology Transfer:	NA
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	05
13.	No. of books published with details:	NA

*Srinidhi Acharya*

Signature:

Date: 07/03/2025



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ELECTRICAL AND ELECTRONICS ENGINEERING**

**Faculty Profile**



1.	Name:	Dr PRASHANT A. ATHAVALA
2.	Date of Birth:	28.11.1980
3.	Unique ID:	1-414740639
4.	Education Qualification:	PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	20 0 0 0
6.	Area of Specialization:	Digital Signal Processing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Signals and Systems, Digital Signal processing, Elements of Electrical Engineering, DSP Lab, Introduction to Electronics and Communication
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	6 0 0
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	6
13.	No. of books published with details:	NIL

Signature:

Date: 6.01.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ELECTRICAL AND ELECTRONICS ENGINEERING**

**Faculty Profile**



1.	Name:	Dr. Sanjay Lakshminarayanan
2.	Date of Birth:	10-07-1968
3.	Unique ID:	1-3606606816
4.	Education Qualification:	PhD (IISc)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	16 3 7.5
6.	Area of Specialization:	Power Electronics
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Power Electronics, Drives, Renewable Energy Resources, Electric Vehicles, Management
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	PhD guidance completed: 4 Students Ongoing: 3
9.	Project Carried out:	VTU project Rs. 7.6 Lakhs, 3 Years (2012)
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	International journals: 17 International Conference: 9 National Journals: 4 National Conference: 6
13.	No. of books published with details:	NIL

Signature:

Date: 10.01.2024

(Dr. Sanjay Lakshminarayanan)



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: ELECTRICAL AND ELECTRONICS ENGINEERING

Faculty Profile



1.	Name:	Dr Narapareddy Ramarao
2.	Date of Birth:	01-07-1976
3.	Unique ID:	
4.	Education Qualification:	Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	23 Years of Teaching Experience
6.	Area of Specialization:	Electrical and Electronics Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Electrical Machines, Power Systems, Control Systems, High Voltage Engineering, Digital System Design, Microcontrollers, Sensors and Transducers
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D(Completed/Ongoing):	a. 17 Journals and 15 conference papers b. Nil c. One completed and two are pursuing
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	17 International Journals and 15 International Conference Papers
13.	No. of books published with details:	Nil

Signature: *N. Ramarao*

Date: 10/01/2024



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: Electrical and Electronics Engineering

Faculty Profile



1.	Name:	Prof. Kattimani H.D
2.	Date of Birth:	15.11.1965
3.	Unique ID:	1-414705239
4.	Education Qualification:	BE, MS
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	32 Nil Nil Nil
6.	Area of Specialization:	Electrical & Electronics
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Power System Protection Digital Electronics Microprocessor Micro Controller. Energy Auditing & Demand Side Management
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	10
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	-

Signature:

Date: 08-01-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Electrical and Electronics Engineering**

**Faculty Profile**



1.	Name:	Dr. Suma Umesh
2.	Date of Birth:	14/05/1975
3.	Unique ID:	1-414740631
4.	Education Qualification:	Ph.D. (Electrical Engineering)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	20 02 nil nil
6.	Area of Specialization:	Power Electronics, Nanomaterials and sensors
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	nil
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	nil
9.	Project Carried out:	nil
10.	Patents (Filed / Granted):	nil
11.	Technology Transfer:	nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	08
13.	No. of books published with details:	-

Signature:

Date: 09-01-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ELECTRICAL & ELECTRONICS ENGINEERING**

**Faculty Profile**



1.	Name:	MANJULA B K
2.	Date of Birth:	20-05-1972
3.	Unique ID:	
4.	Education Qualification:	MTech in VLSI Design & Embedded System
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 14.5 years b. 5 years c. 12 years
6.	Area of Specialization:	Electrical Subjects
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Elements of Electrical Engineering Electrical Machines Utilization of Electrical Power Power System Analysis in EEE
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	a. 01 b. Nil c. Nil
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Guided B E Final Year project
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	03
13.	No. of books published with details:	Nil

Manjula B K  
Signature:

Date: 09.01.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: EEE**

**Faculty Profile**



1.	Name:	Vikram Chekuri
2.	Date of Birth:	22.02.1986
3.	Unique ID:	
4.	Education Qualification:	M.E
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching: 14 Years
6.	Area of Specialization:	Power System
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Power system Analysis, Control System, Electrical Power Quality, Power System Operation and Control, Basic Electrical Engineering, Signals and Systems, Renewable Energy Resources, Digital Signal Processing, Operation Research.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NA
9.	Project Carried out:	Voltage stability Enhancement using STATCOM
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NA
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	08
13.	No. of books published with details:	NIL

**Signature: VIKRAM CHEKURI**

**Date:08.01.2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: EEE**

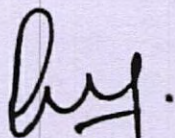
**Faculty Profile**



1.	Name:	BABU NAIK GUGULOTHU
2.	Date of Birth:	08-06-1988
3.	Unique ID:	1-731473204
4.	Education Qualification:	M.E (Ph.D)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. Teaching:13 b. Research: nil c. Industry: nil d. Others: nil
6.	Area of Specialization:	Power System
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	1. Basic Electrical Engineering 2. Electrical and Electronics Measurements and Instrumentation 3. Electric Power Generation 4. Electromagnetic Field Theory 5. Industrial Drive and Applications 6. Renewable Energy Sources 7. Solar and Wind Energy 8. Testing and Commissioning 9. Management and Entrepreneurship
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	a. No. of papers published in National / International Journals / Conferences: 15 b. Master (Completed/Ongoing): Completed c. Ph.D (Completed/Ongoing): Ongoing
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	15



13. No. of books published with details:	NIL
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Signature: Babu Naik G

Date:08.01.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ELECTRICAL AND ELECTRONICS ENGINEERING**

**Faculty Profile**



1.	Name:	Dr. MANJUNATHA BABU P
2.	Date of Birth:	25-07-1979
3.	Unique ID:	
4.	Education Qualification:	B.E, M.E, Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	20 NIL NIL
6.	Area of Specialization:	POWER AND ENERGY SYSTEMS
7.	Course taught at Undergraduate:	ELECTRICAL MACHINES, POWER SYSTEMS
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	15
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	2
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	32
13.	No. of books published with details:	NIL

Signature:

Date:08-01-2024



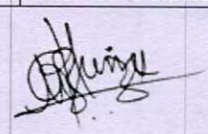
**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ELECTRICAL AND ELECTRONICS ENGINEERING**

**Faculty Profile**



1.	Name:	OZWIN DOMINIC DSOUZA
2.	Date of Birth:	23-10-1983
3.	Unique ID:	
4.	Education Qualification:	M.TECH
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	15 - 03 -
6.	Area of Specialization:	COMPUTER APPLICATIONS IN INDUSTRIAL DRIVES
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	ANALOG ELECTRONIC CIRCUITS CONTROL SYSTEMS ENGINEERING ELECTRIC MOTORS BASIC ELECTRICAL ENGINEERING BASIC ELECTRONICS TRANSFORMERS AND INDUCTION GENERATORS OP-AMPS AND LIC HIGH VOLTAGE ENGINEERING ELECTRICAL MACHINE DESIGN
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	-
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	-

  
Signature:

Date:08-01-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ELECTRICAL AND ELECTRONICS ENGINEERING**

**Faculty Profile**



1.	Name:	SHILPA G
2.	Date of Birth:	02-10-1980
3.	Unique ID:	1-2482508234
4.	Education Qualification:	B.Tech, M.Tech
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	15
6.	Area of Specialization:	INDUSTRIAL DRIVES
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	POWER ELECTRONICS OPAMPS AND LINEAR ICs BASICS OF ELECTRICAL ENGINEERING FIELD THEORY
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	NIL

Signature:

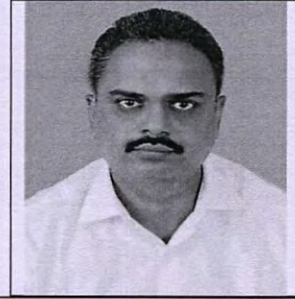
Date: 08.01.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ELECTRICAL & ELECTRONICS ENGG**

**Faculty Profile**



1.	Name:	Dr PRASAHANTH N A
2.	Date of Birth:	06-09-1980
3.	Unique ID:	5668
4.	Education Qualification:	B.E., M.Tech, P.hD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	17 years
6.	Area of Specialization:	Wind Power Systems
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	1. Basic Electrical Engg 2. Microcontroller 3. Power Electronics 4. Renewable Energy Sources
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	a. 12 b. NIL c. 01
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	12
13.	No. of books published with details:	NIL

**Signature:**

**Date: 06-01-2024**



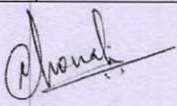
**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Electrical and Electronics Engineering**

**Faculty Profile**



1.	Name:	NAGARAJ D CHONALI
2.	Date of Birth:	26-07-1984
3.	Unique ID:	2919606427
4.	Education Qualification:	m.Tech(Ph.D)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching: 17 Years 6 Months
6.	Area of Specialization:	VLSI Design, Electrical Machines, Control Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Undergraduate Level
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NA
9.	Project Carried out:	Retrofitting of Conventional Three wheeler autorikshaw into electric autorikshaw
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	07
13.	No. of books published with details:	Nil

  
**Signature:**

**Date:06-01-2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Electrical and Electronics Engineering**

**Faculty Profile**



1.	Name:	Dr. MADHU PALATI
2.	Date of Birth:	02-01-1980
3.	Unique ID:	
4.	Education Qualification:	B.Tech, M.E, Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	15 04 04
6.	Area of Specialization:	High Voltage Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Power Systems, High Voltage Engineering, Electric Vehicles, Digital Logic Circuits
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	03  NIL Ongoing : 03
9.	Project Carried out:	Final year VTU Projects: 15
10.	Patents (Filed / Granted):	01
11.	Technology Transfer:	02
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	Journals: 32 Conferences: 21 Book Chapters: 04
13.	No. of books published with details:	NIL

Signature:

Date: 08-01-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ELECTRONICS & TELECOMMUNICATION ENGINEERING**

**Faculty Profile**



1.	Name:	Dr Seema Singh
2.	Date of Birth:	03/03/1980
3.	Unique ID:	1-413816657
4.	Education Qualification:	PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	22 15 (part-time) NIL NIL
6.	Area of Specialization:	Neural networks, image processing, IoT
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Neural Networks, Digital System Design using VHDL, Basic Electronics, HDL, Analog Electronic Circuit, Computer communication networks and Digital Electronics.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	12 03 06
9.	Project Carried out:	
10.	Patents (Filed / Granted):	02
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	46
13.	No. of books published with details:	NIL

Signature:

Date: 29.01.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Electronics & Telecommunication Engineering

**Faculty Profile**



1.	Name:	Dr. Mallikarjuna Gowda C. P.
2.	Date of Birth:	06-06-1975
3.	Unique ID:	1-416790851
4.	Education Qualification:	B.E (E &CE), M.E Tel.E & Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 25 Years b. 8 Years c. Nil d. Nil
6.	Area of Specialization:	Wireless Communication
7.	Course taught at Undergraduate Level:	<ul style="list-style-type: none"><li>● Wireless Communication</li><li>● Digital Communication</li><li>● Principles of Communication systems</li><li>● Advanced Cellular Communication and 4G LTE</li><li>● Sensors and Signal Conditioning</li></ul>
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	13-Journal Article 13-Conference Proceedings 01 - Book Chapter Nil Nil
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	13 Journal Article 13-Conference Proceedings 01 - Book Chapter
13.	No. of books published with details:	Nil

Signature:

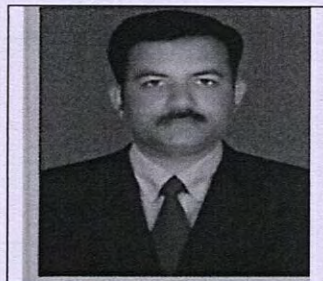
Date:08.01.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Electronics and Telecommunication Engineering**

**Faculty Profile**



1.	Name:	Dr.Raju Hajare
2.	Date of Birth:	01.07.1979
3.	Unique ID:	3130
4.	Education Qualification:	BE, MTech, PhD in Nano electronics
5.	Work Experience:	22 Years
	a. Teaching:	20 Years
	b. Research:	12 years
	c. Industry:	02 years
	d. Others:	-
6.	Area of Specialization:	Nano electronics
7.	Undergraduate	CMOS VLSI Design, Linear ICs, Analog electronics, Power electronics, OOPs using C++, Sensors & Actuators, Management & Entrepreneurship, Design Thinking and Innovation
8.	Research Guidance (No. of Students)	UG students:28 batches
	a. No. of papers published in National / International Journals / Conferences:	35(Journals+ Proceedings)
	b. Master (Completed/Ongoing):	Completed -2006
	c. Ph.D (Completed/Ongoing):	Completed-2019
9.	Project Carried out:	Students projects(only)
10.	Patents (Filed / Granted):	-02
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	35
13.	No. of books published with details:	02-by Cengage publishers

Rt

**Signature:**

**Date: 08.01.24**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Department of Electronics and Telecommunication Engineering**

**Faculty Profile**



1.	Name:	Dr THEJASWINI S
2.	Date of Birth:	08/06/1979
3.	Unique ID:	
4.	Education Qualification:	PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	22 8
6.	Area of Specialization:	Signal Processing/ Digital communication and Networking
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Signal processing/DSP/Verilog HDL/Python Application Programming/Introduction to Electronics/ Satellite Communication /DSP Algorithms & Architecture.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	---   
9.	Project Carried out:	Guided all UG projects.
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	----
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	18
13.	No. of books published with details:	NIL

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Electronics & Telecommunication**

**Faculty Profile**



1.	<b>Name:</b>	<b>SIDDIQ IQBAL</b>
2.	<b>Date of Birth:</b>	<b>13/06/1981</b>
3.	<b>Unique ID:</b>	
4.	<b>Education Qualification:</b>	<b>B.E, M.Tech, Ph.D</b>
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	<b>19.5yrs</b> <b>9 yrs</b>
6.	<b>Area of Specialization:</b>	<b>Wireless Sensor Networks, Image Processing</b>
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<ol style="list-style-type: none"> <li>1. Network Analysis</li> <li>2. Electronic Circuits</li> <li>3. Analog Electronic Fundamentals</li> <li>4. Analog Electronic Circuits</li> <li>5. Field Theory</li> <li>6. HDL</li> <li>7. LIC</li> <li>8. Signals &amp; Systems</li> <li>9. Computer Organization</li> <li>10. Data Communication</li> <li>11. Microprocessors</li> <li>12. Analog Communication</li> <li>13. ITC</li> <li>14. Image Processing</li> <li>15. Adhoc Wireless Networks</li> </ol>
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	<b>Nil</b>
9.	<b>Project Carried out:</b>	
10.	<b>Patents (Filed / Granted):</b>	<b>2 published</b>
11.	<b>Technology Transfer:</b>	<b>Nil</b>



12.	Research Publications (No. of papers published in National / International Journals/Conferences):	22
13.	No. of books published with details:	Nil

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Electronics and Telecommunication Engineering**

**Faculty Profile**



1.	Name:	Dr. BANUPRAKASH R
2.	Date of Birth:	10.05.1981
3.	Unique ID:	1872
4.	Education Qualification:	M.Tech, P.hD (Antennas)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. Teaching: 17 Years b. Research: 9 Years c. Industry: 4 Years
6.	Area of Specialization:	Microwaves and Antennas
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Undergraduate Level: a. Electromagnetics b. Microwave theory & Antennas c. Internet of Things d. Python Programming e. Transmission lines & Waveguides
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL  a. 29 publications
9.	Project Carried out:	MIMO antenna, Reconfigurable antenna, Antennas for 4G/5G communication
10.	Patents (Filed / Granted):	3 Patents published
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	29 publications
13.	No. of books published with details:	1 book publication under process

**Signature: Banuprakash R**

**Date: 24.05.24**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Department of Electronics and Telecommunication Engineering**

**Faculty Profile**



1.	Name:	Dr Saritha I G
2.	Date of Birth:	24/12/81
3.	Unique ID:	
4.	Education Qualification:	PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	16 6 0
6.	Area of Specialization:	Embedded/Wireless Sensor Network
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Embedded systems/Microcontroller/Introduction to Electronics/RTS/OFC/OCN.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	---
9.	Project Carried out:	Guided all UG projects.
10.	Patents (Filed / Granted):	01(filed)
11.	Technology Transfer:	----
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	19
13.	No. of books published with details:	NIL

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Department of Electronics and Telecommunication Engineering**

**Faculty Profile**



1.	Name:	Dr Sowmyashree M S
2.	Date of Birth:	22/09/1984
3.	Unique ID:	
4.	Education Qualification:	PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	15 6
6.	Area of Specialization:	Embedded/Wireless Sensor Network
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	CCN/VLSI/Embedded systems/Engineering Statistics and Linear Algebra/ Microprocessor/Microcontroller.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	---
9.	Project Carried out:	Guided all UG projects.
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	----
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	15
13.	No. of books published with details:	NIL

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Department of Electronics and Telecommunication Engineering**

**Faculty Profile**



1.	Name:	Dr Sumathi M S
2.	Date of Birth:	15/11/1984
3.	Unique ID:	
4.	Education Qualification:	PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	14 6 1
6.	Area of Specialization:	Embedded/Wireless Sensor Network
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Embedded systems/Microcontroller/COA/Introduction to Electronics/C++/RTS.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	---
9.	Project Carried out:	Guided all UG projects.
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	----
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	14
13.	No. of books published with details:	NIL

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Department of Electronics and Telecommunication Engineering**

**Faculty Profile**



1.	Name:	Prof. Prathiba N
2.	Date of Birth:	16/02/1977
3.	Unique ID:	5407
4.	Education Qualification:	(PhD)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	10 5
6.	Area of Specialization:	Embedded/Wireless Sensor Network
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	CCN/Embedded systems/Basic Electronics/Electronic Principles and Circuits/Optical communication/ Arm Microcontroller/SFH/IDT/Radar Systems/RTS.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	---
9.	Project Carried out:	Guided all UG projects.
10.	Patents (Filed / Granted):	1
11.	Technology Transfer:	----
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	NIL

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064**

**BRANCH: Civil Engineering**

**Faculty Profile**



1.	<b>Name:</b>	<b>Dr. Aruna G</b>
2.	<b>Date of Birth:</b>	<b>01/05/983</b>
3.	<b>Unique ID:</b>	<b>1-7325197017</b>
4.	<b>Education Qualification:</b>	<b>Ph.D</b>
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	<b>Teaching : 15 years 4 months Industry : 1 year 2 months</b>
6.	<b>Area of Specialization:</b>	<b>Structural Engineering</b>
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<b>Undergraduate Level:</b> 1. Analysis of Indeterminate Structures 2. Element of Civil Engineering 3. Environmental protection and management 4. Design of Steel Structural Elements 5. Elements of Civil Engineering 6. Software Application Laboratory 7. Basic Material Testing Laboratory 8. Concrete and Highway Materials Laboratory 9. Environmental Studies 10. Computer aided building planning and drawing 11. Design of RCC and Steel Structural Elements
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	<b>Nil</b>
9.	<b>Project Carried out:</b>	<b>Nil</b>



10. Patents (Filed / Granted):	<b>Filed :</b> A MACHINE LEARNING BASED TECHNIQUE FOR DETECTING QUALITY OF CONCRETE MIXTURE
11. Technology Transfer:	Nil
12. Research Publications (No. of papers published in National / International Journals/Conferences):	International : 11 National : Nil conference : 4
13. No. of books published with details:	Nil

Signature:

Date:08.01.2024

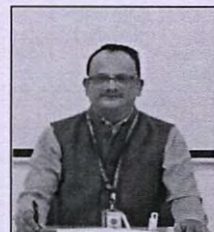
*C. Aruna*



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**Department of Civil Engineering**

**Faculty Profile**



1.	<b>Name:</b>	Dr. Rajakumara H.N
2.	<b>Date of Birth:</b>	08-04-1973
3.	<b>Unique ID:</b>	
4.	<b>Education Qualification:</b>	Ph.D
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others: Administration:	25 Years 6 Years 9 Months 13 Years
6.	<b>Area of Specialization:</b>	Environmental Engineering
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	1. Environmental Engineering, 2. Solid Waste Management 3. Air Pollution And Control
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	06 (1 Awarded) - Completed 1 Completed 5 Ongoing
9.	<b>Project Carried out:</b>	7
10.	<b>Patents (Filed / Granted):</b>	1.Patent on "Manufacture of Bamboo Bricks" application on Building blocks (Patent No 201841029704)
11.	<b>Technology Transfer:</b>	
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	76
13.	<b>No. of books published with details:</b>	#2 1.Engineering Mechanics (Statics and Dynamics) 2.Basics of Civil and Mechanical Engineering

**Signature:** 

**Date:19-01-2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Civil Engineering**

**Faculty Profile**



1.	Name:	Dr Rajesh Gopinath
2.	Date of Birth:	18 <sup>th</sup> June 1981
3.	Unique ID:	1-3215692300
4.	Education Qualification:	B.E. (Env Engg.), M.Tech. (Env Engg.), M.B.A.(HRM), Ph.D. (Civil Engg.), PGP HRM, PGD Env Law
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Work Experience: a. Teaching: 17 Years b. Research: 05 Years (Part-time) c. Industry: Nil d. Others: 02 Years
6.	Area of Specialization:	Environmental Engineering, Land-use Planning, Urban Climatology, Ecology
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	<u>Undergraduate level:</u> Water Supply and Wastewater Engineering, Environmental Protection and Management, Environmental Engineering Lab, Environmental Studies
8.	Research Profile	a. Research Guidance (# Students) : 01 b. Master's Degree (Completed/Ongoing): Completed c. Ph.D (Completed/Ongoing): Completed
9.	Project Carried out:	04
10.	Patents (Filed / Granted):	NIL/NA
11.	Technology Transfer:	NIL/NA
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	a. No. of papers published in National Journals: 23 b. No. of papers published in Foreign/International Journals: 24 c. No. of papers published in Conferences: 15 d. No. of Book Chapters Published: 06



13.	No. of books published with details:	<ol style="list-style-type: none"> <li>1. 2016: Environmental Studies, Subas Stores, ISBN AP-102</li> <li>2. 2015: "CCCV and Counting - A Handbook on Urban Flora and Fauna of AIT, Bangalore", Field Guide, Nature Watch</li> <li>3. 2018: "Environmental Science and Engineering" CENGAGE ISBN-13:978-93-87511-56-9</li> <li>4. 2022: Vol 1, "Natyra - A Handbook on Urban Flora and Fauna of BMSIT&amp;M, OIKOS ISBN-978-93-5593-203-7</li> <li>5. 2022: Vol 2, "Natyra - A Handbook on Urban Flora and Fauna of BMSIT&amp;M, OIKOS ISBN-978-93-5593-203-7</li> </ol>
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● Signature:

Date:



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Civil Engineering**

**Faculty Profile**



1.	Name:	Mrs.Shobha R
2.	Date of Birth:	14/11/1980
3.	Unique ID:	1-1456798993
4.	Education Qualification:	M.Tech (P.hD)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 12 Years b. c. 3
6.	Area of Specialization:	Structures, Construction Management
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Element of Civil Engg, Design of RCC Structural Elements, Quantity Survey, Construction Management & technology, Alternative Building Materials.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
9.	Project Carried out:	13 Projects
10.	Patents (Filed / Granted):	Filed - 4 Granted- 1
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	a. National Conference - 6 b. International Journals - 6 c. International Conference 10
13.	No. of books published with details:	1

**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: CIVIL ENGINEERING**

**Faculty Profile**

Passport  
size  
photograph

1.	Name:	ARCHANA K
2.	Date of Birth:	19/05/1988
3.	Unique ID:	Employee ID-5660
4.	Education Qualification:	M Tech (Water Resources Engineering and Management)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	9.5 years - 3 Years -
6.	Area of Specialization:	Water Resources Engineering and Management
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Undergraduate: - Fluid Mechanics (theory & lab) - Applied Hydraulics - Hydrology and Irrigation engineering - Design of hydraulic structures - Ground water hydrology - Geospatial Techniques - Elements of Civil Engineering and Engineering Mechanics
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	Project Carried out:	UG projects- 10; KSCST projects- 5
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	National Journals:3 International Journals:4 National Conference:6 International Conference:10
13.	No. of books published with details:	Nil

**Signature:**

**Date:8/1/2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Civil Engineering**

**Faculty Profile**



1.	Name:	SHIMNA MANOHARAN
2.	Date of Birth:	23-AUGUST-1989
3.	Unique ID:	
4.	Education Qualification:	MTECH
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	09 YEARS 03 YEARS -- --
6.	Area of Specialization:	GEOTECHNICAL ENGINEERING
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	ENGINEERING MECHANICS, ENGINEERING SURVEY, GEOTECHNICAL ENGINEERING, FOUNDATION ENGINEERING, ENVIRONMENTAL PROTECTION MANAGEMENT , OCCUPATIONAL HEALTH AND SAFETY
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	-- --
9.	Project Carried out:	UG PROJECTS - 12
10.	Patents (Filed / Granted):	NA
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	JOURNAL - 05 NATIONAL CONFERENCE -03 INTERNATIONAL CONFERENCE - 02



13.	No. of books published with details:	--
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Signature:

Date: 09-JAN-2024



BRANCH: DEPARTMENT OF CIVIL ENGINEERING.

## Faculty Profile



1.	Name:	Dr VINOD B R
2.	Date of Birth	21/09/1988
3.	Unique ID:	1-2923563415
4.	Education Qualification:	BE, MTech, PhD
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Other:	a. 11 Years
6.	Area of Specialization:	Geotechnical Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	<ul style="list-style-type: none"> <li>• Building Materials and Construction Technology</li> <li>• Concrete Technology</li> <li>• Basic Geotechnical Engineering</li> <li>• Building Planning and Drawing</li> <li>• Design of RCC Structural Elements</li> <li>• Geotechnical Engineering - I</li> <li>• Transportation Engineering I</li> <li>• Transportation Engineering II</li> <li>• Geotechnical Engineering - II</li> <li>• Highway Engineering</li> <li>• Alternative Building Materials and Construction</li> <li>• Design of Pre-Stressed Concrete Structures</li> <li>• Pavement Materials and Construction</li> <li>• Geotechnical Engineering Laboratory</li> <li>• Extensive Survey Viva - Voce</li> <li>• Concrete and Highway Materials Laboratory</li> </ul>
8.	Research Guidance (No. of Students) a. No. of papers published in National/ International Journals/ Conferences: b. Master's (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	



9. **Project Carried out:**  
**UG Projects :16**  
**PG Projects :02**

UGP16: "Development of Compressed Stabilized Mud Blocks for Sustainable Construction with GGBS and Iron Ore. [BE], [Completed], 2022.

UGP15: "Mitigation of Reinforced metal corrosion using Zinc Tungstate". [BE], [Completed], 2022.

UGP14: Stability Analysis of Slope Using Geo5 Software. [BE], [Completed], 2021.

UGP13: Analysis of Embankment on Expansive Soil Using Plaxis Software. [BE], [Completed], 2021.

UGP12: Suitability of Additives for Soil Liner to Control Migration of Constituents in Leachate - Soil Waste Disposal Site, Bengaluru. [BE], [Completed], 2020.

UGP11: Stability Anatomization of Failed Slopes Using LEM. [BE], [Completed], 2020.

UGP10: Stabilization of Black Cotton Soil Using Ferric Chloride and Bagasse Ash [Completed], 2020.

UGP9: Analysis of stabilized soil slopes by using Taylor's stability method and Plaxis software. [BE], [Completed], 2019.

UGP8: Establishing a suitable method for analysis of reinforced and stabilized soil slopes. [BE], [Completed], 2019.

UGP7: Design and Fabrication of Permeable Pavement model to analysis its Applicability for heavy rainfall roads and parking lots. [BE], [Completed], 2019.

UGP6: Performance of reinforced soil slopes using Taylor's method and Geostudio software. [BE], [Completed], 2019.

UGP5: Feasible use of recycled concrete aggregates in rigid Pavement. [BE], [Completed], 2018.

UGP4: Replacement of course Aggregates in rigid pavement with E Waste ceramics. [BE], [Completed], 2018.

UGP3: Feasibility Analysis for 100% Replacement of River Sand as Fine Aggregate with E-Waste Ceramics in Rigid Pavement. (Guide), [BE], [Completed], 2017.

UGP2: Utilization of Fly Ash for Road Construction of on Black Cotton Soil. [BE], [Completed], 2018.

UGP1: Correlation of Index and Engineering properties of Fine a gained soil with CBR value [BE], 2017.

PG:2 Laboratory Investigation on BC Soil modified with coir fiber overlying a loose soil stratum. [M Tech], [Completed], 2019.

PG1: Effective Use of BC Soil and its variation when modified with coir fiber overlying a



		loose soil stratum. [M Tech], [Completed], 2019.
10.	<b>Patents (Filed / Granted):</b>	<p>Patents: (06)</p> <p>PT6: Vinod B R et.al Application no : 395067-001, Title of Invention: "Core Cutting Machine for Cohesive Soil" Published Date : 14-09-2023, Grant Date: : 27/10/2023, Jurisdiction: Kolkata, India. <b>[Grant]</b></p> <p>PT5: Vinod B R et.al Application no : 349270-001, Title of Invention: "An Architectural Engineering Construction Device", Date of filing of Application : 09-09-2021, Published Date : 08-10-2021, Grant Date: : 23/12/2022, Jurisdiction: Chennai, India. <b>[Grant]</b></p> <p>PT4: Vinod B R et.al Application no : 354099-001, Title of Invention: "A Small scale dynamic triaxial testing device for concrete or soil", Date of filing of Application : 01-12-2021, Published Date : 07-01-2022, Jurisdiction: Chennai, India.</p> <p>PT3: Vinod B R et.al Application no: 2021101722, Title of Invention: "An Investigation Of Abrasive Water Jet Machining On Glass Fiber Reinforced Polymers", Date of filing of Application : 04-04-2021, Published Date : 26-05-2021, Jurisdiction: Australia. <b>[Grant]</b></p> <p>PT2: Vinod B R et.al Application no: 202041041755, Title of Invention: "Occupational stress model and coping strategies thereof" Date of filing of Application : 25-09-2021, Published Date : 09-10-2021, Jurisdiction: Chennai, India.</p> <p>PT1: Vinod B R et.al Application no: 202041041304, Title of Invention: "Novel Approach for Class Recording &amp; Blackboard cleaning System and Methods thereof", Date of filing of Application : 25-09-2021, Published Date : 09-10-2021, Jurisdiction: Chennai, India.</p>
11.	<b>Technology Transfer:</b>	
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	<p>a. Journal Publications: (19)</p> <p>b. Conference Proceedings/Book Chapters : (11)</p> <p>c. International Conference: (21)</p> <p>d. National Conference: (26)</p>
13.	<b>No. of books published with details:</b>	<p>Book Authored: (05)</p> <p>BA:5 "Environmental Geotechnical Engineering" Published by Notion Press, ISBN-979-8890026798, Published on: 23-03-2023.</p> <p>BA:4 "Green Building Materials and Techniques" Published by Notion Press, ISBN-979-8889513452, Published on: 18-01-2023.</p>



		<p>BA:3 “Highway Materials and Construction”, Published by LAP LAMBERT Academic Publishing, ISBN-13:978-620-4-71719-7, Published on: 18-11-2021. (Book published in seven languages English, German, Spanish, French, Italian, Portuguese, Russian)</p> <p>BA:2 “Basic Geotechnical Engineering”, Published by Sapna Book House(P) Ltd, ISBN:978-81-947812-0-2, September 2020.</p> <p>BA:1 “Basic Geotechnical Engineering”, Published by Sapna Book House(P) Ltd, ISBN:978-93-86381-75-0, April 2017.</p>
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**Signature:**

**Date:**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: CIVIL ENGINEERING**

**Faculty Profile**



1.	Name:	DR. CHANDRASHEKHARAPPA AGASNALLI
2.	Date of Birth:	01-01-1977
3.	Unique ID:	-
4.	Education Qualification:	M.Sc., Ph D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a) 8.0 b) 8.6 c) 5.6
6.	Area of Specialization:	Geology, Remote Sensing and GIS
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Undergraduate
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	01 (one student)  a) 11 b) Completed c) Completed
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	11
13.	No. of books published with details:	NIL

**Signature:**

**Date: 10-01-2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** DEPARTMENT OF CIVIL ENGINEERING

**Faculty Profile**



1.	Name:	Dr. DEEPAK M S
2.	Date of Birth:	31.01.1989
3.	Unique ID:	10045
4.	Education Qualification:	B.E., M.E., (Structural Engineering), Ph.D.,
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 4.5 b. 6.0 c. 1.0
6.	Area of Specialization:	STRUCTURAL ENGINEERING
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Design of R.C.C. Structures, Design of Steel Structures, Strength of Materials, CAD and Software Applications.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D., (Completed/Ongoing):	c. 1 - Ph.D., Scholar (Full-Time) On-Going
9.	Project Carried out:	SERB-TARE [TAR/2022/000503] (2022-2025)
10.	Patents (Filed / Granted):	1 (Hearing Date Announced)
11.	Technology Transfer:	-Nil-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	18
13.	No. of books published with details:	-Nil-

Signature:

Date: 19.01.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Department of Civil Engineering

**Faculty Profile**



1.	Name:	Dr Anupkumar G. Ekbote
2.	Date of Birth:	01/10/1990
3.	Unique ID:	
4.	Education Qualification:	Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 3 b. 5 c. 1 d. 0
6.	Area of Specialization:	Geotechnical Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Basic Geotechnical Engineering Applied Geotechnical Engineering Highway Engineering Engineering Survey Engineering Mechanics Geotechnical Engineering Laboratory Basic Material Testing Laboratory Environmental Studies Introduction to Civil Engineering
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	International Journal: 05 Book Chapters: 04 Conferences: 05
13.	No. of books published with details:	NIL

Signature:

*Atkalt*

Date: 19/01/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: CIVIL ENGINEERING**

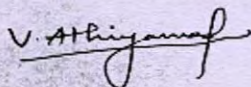
**Faculty Profile**



1.	Name:	Dr. Athiyamaan V
2.	Date of Birth:	29-02-1992
3.	Unique ID:	1ATCV0013322
4.	Education Qualification:	B.Tech (Civil Engg), M.tech (Structural Engg), Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching: 4 years 6 month Research: 4 years
6.	Area of Specialization:	Structural Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	<ul style="list-style-type: none"> <li>• Engineering Mechanics</li> <li>• Strength of Materials</li> <li>• Structural Analysis</li> <li>• Design of Reinforced concrete Structural Elements</li> <li>• Design Concepts of Building Services</li> <li>• Environmental Studies</li> <li>• Elements of Civil Engineering</li> <li>• Introduction to Python Programming Lab</li> <li>• Introduction to C-Programming Lab</li> <li>• Revit Architecture Lab</li> <li>• Computer Aided Building Planning and Drawing</li> <li>• Building Materials and Testing Lab</li> <li>• Computer Aided Detailing of Structures</li> <li>• Skill Lab</li> </ul>
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	No. of Ph.D Students: Nil No. of papers published: 5 Master: Completed in 2015 Ph.D: Completed in 2019



9.	Project Carried out:	<p><b>UG Level:</b></p> <ul style="list-style-type: none"> <li>• Mechanical Characteristic of Light Weight Concrete Using Slag Aggregates</li> <li>• Mechanical Properties Of Bentonite, Fly Ash And Metakoline Based Geopolymer Concrete Using Alkali solution</li> </ul> <p><b>PG Level:</b></p> <ul style="list-style-type: none"> <li>• Study On Reduction On Size Of Concrete Using Reinforced Steel fibres and Poly- Propylene Fibres</li> <li>• Metallic Aggregate Concrete</li> <li>• Evaluation On The Reinforcing Efficiency Of Discrete And Aligned Steel And Poly Propylene Fibre Composites.</li> <li>• Effect Of Reduction Of Strength Of Reinforced Steel Fibres Due To Corrosion</li> </ul> <p><b>Ph.D Level:</b></p> <ul style="list-style-type: none"> <li>• Statistical and Detailed Analysis on Fiber Reinforced Self- Compacting Concrete Containing Admixtures- A State of Art of Review</li> <li>• "Statistical and Detailed Analysis on Fiber Reinforced Self- Compacting Concrete Containing Admixtures- A State of Art of Review</li> <li>• Micro-steel fibre reinforced Self Compacting Concrete - A state of the art of review</li> <li>• Analysis on Alignment of Microsteel Fibres in Admixture Based Self Compacting Concrete (MSFR- SCC) Using NDT and Evaluating Its Effect on Modulus of Rupture</li> <li>• Optimization of SCC Mix Design Using Nan-su Theory Embodying Doe Method</li> <li>• Statistical And Simulation Analysis On Impact Of Micro Steel - Fibres In Reinforced SCC Containing Admixtures</li> <li>• Admixture-based self-compacted concrete with self-curing concrete techniques a state of art of review</li> </ul>
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	8
13.	No. of books published with details:	Nil



Signature: Dr. Marsh M. Bandi

Date: 08-01-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
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**BRANCH: CIVIL ENGINEERING**

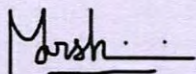
**Faculty Profile**



1.	Name:	Dr. Marsh M. Bandi
2.	Date of Birth:	25-07-1988
3.	Unique ID:	1BYCV0017162
4.	Education Qualification:	Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching: 2 years 6 months Research: 7 years
6.	Area of Specialization:	Traffic and Transportation Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	<ul style="list-style-type: none"> <li>• Highway Engineering</li> <li>• Urban Transport Planning</li> <li>• Pavement Design</li> <li>• Traffic Engineering</li> <li>• Environmental Studies</li> <li>• Elements of Civil Engineering</li> <li>• Introduction to Python Programming</li> <li>• Introduction to C-Programming</li> <li>• Revit Architecture</li> <li>• Surveying Laboratory</li> <li>• Extensive Survey Project Laboratory</li> <li>• Computer Aided Design and Drawing</li> <li>• Environmental Engineering Laboratory</li> <li>• Concrete and Highway Materials Laboratory</li> </ul>
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	No. of Ph.D Students: Nil No. of papers published: 5 Master: Completed in 2013 Ph.D: Completed in 2021
9.	Project Carried out:	UG Level: <ul style="list-style-type: none"> <li>• Sustainable Concrete Mix-Design Using Glass Fibers and Copper Slag.</li> </ul>



		<ul style="list-style-type: none"> <li>• Sustainable Smart Walkway Pavement for Electric Energy Production.</li> <li>• Smart Pothole Repair Technology.</li> <li>• Design of Automated Speed Inhibitor.</li> <li>• Traffic Management at 3-Phase Intersection.</li> <li>• Connected Cit-i (AI Interfaced Smart City Infrastructure Development)</li> </ul> <p>PG Level:</p> <ul style="list-style-type: none"> <li>• Experimental Study on Mechanical Properties of Flyash- GGBS Based Geopolymer Concrete under Ambient Curing Condition</li> <li>• Geopolymer Concrete Using Dredged Sand (Sea Sand) and Greater Sized Aggregates (40mm and down).</li> <li>• Central Road Research Institute (CRRI) New-Delhi: Pavement Response under Accelerated Pavement Testing (APT).</li> </ul> <p>Ph.D Level:</p> <ul style="list-style-type: none"> <li>• Calibration of Vehicle and Driver Characteristics for VISSIM Model, ANN-based Sensitivity Analysis, Traffic Management, and Signal Design using GA for Mangalore City</li> </ul>
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	05
13.	No. of books published with details:	Nil



Signature: Dr. Marsh M. Bandi

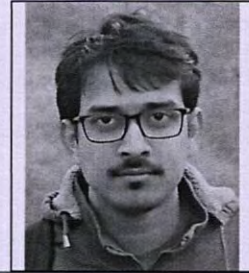
Date: 08-01-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: CIVIL ENGINEERING**

**Faculty Profile**



1.	Name:	Dr. Lalit Kumar Gupta
2.	Date of Birth:	12-05-1991
3.	Unique ID:	1BYCV0017287
4.	Education Qualification:	Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching: 5 years 6 months Research: 4 years
6.	Area of Specialization:	Structural Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	<ul style="list-style-type: none"> <li>• Design of Concrete Structures</li> <li>• Design of Steel Structures-I</li> <li>• Structural Analysis</li> <li>• Engineering Mechanics</li> <li>• Construction Technology &amp; Equipment's</li> <li>• Estimating &amp; Costing</li> <li>• Environmental Studies</li> <li>• Elements of Civil Engineering</li> <li>• Revit Architecture</li> <li>• Surveying Laboratory</li> <li>• Extensive Survey Project Laboratory</li> <li>• Computer Aided Design and Drawing</li> <li>• Concrete and Highway Materials Laboratory</li> </ul>
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	No. of Ph.D Students: Nil No. of papers published: 5 Master: Completed in 2014 Ph.D: Completed in 2020
9.	Project Carried out:	UG Level: <ul style="list-style-type: none"> <li>• Green Concrete Mix-Design Using Copper Slag.</li> </ul>



		<ul style="list-style-type: none"> <li>• Movable Road Divider.</li> </ul> PG Level: <ul style="list-style-type: none"> <li>• An Alternative Approach to use Marble Powder and Fly Ash as Partial Replacement of Natural Fine Aggregate in Concrete</li> </ul> Ph.D Level: <ul style="list-style-type: none"> <li>• A Study on Strength and Durability of Cement Mortars Containing Granite Powder</li> </ul>
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	7
13.	No. of books published with details:	Nil

*Lalit*

Signature: Dr. Lalit Kumar Gupta

Date: 08-01-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: AI&ML**

**Faculty Profile**



1.	Name:	Dr.Bharathi Malakreddy A
2.	Date of Birth:	11.07.1972
3.	Unique ID:	
4.	Education Qualification:	B.E, M.Tech, Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	29 14 years ( on parallel with teaching)
6.	Area of Specialization:	Wireless sensor Networks, AI
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	UG: DBMS, Computer Networks, Compiler Design, System Programming, Computer Organization, Artificial Intelligence, Computer Graphics, OOPs, Data Structures, Adhoc Networks, Principles of Programming Languages, Operating Systems, Object oriented Modelling and Design, C , C++, Information security, Management & Entrepreneurship, Cloud Computing  PG : Artificial Intelligence, Advance Storage Networks, Advance CN, Advance DBMS, Cyber Security and Cyber Law, Machine Learning, BIG Data, Network Performance and Analysis, Cloud Computing , Wireless sensor Networks
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	08  10/10  15 02/06
9.	Project Carried out:	UG : 75 PG: 25



10.	Patents (Filed / Granted):	02
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	25/60
13.	No. of books published with details:	NIL

**Bharathi Malakreddy A**

**Signature:**

**Date:8.1.2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

**Faculty Profile**



1.	Name:	Dr Anupama H S
2.	Date of Birth:	20 <sup>th</sup> May 1982
3.	Unique ID:	
4.	Education Qualification:	Ph.D., M.Tech, B.E
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching: 18 Research: 6 Industry: Nil
6.	Area of Specialization:	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	ADE, MCMES, OS, AI, AAI, NLP, C,DMS, ATC
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	10 Batches (5 years)  5  Completed: 1 Ongoing: 1
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	20
13.	No. of books published with details:	NIL

Signature: Anupama H S

Date: 8.1.2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Artificial Intelligence and Machine Learning**

**Faculty Profile**



1.	<b>Name:</b>	Dr. Pradeep K R
2.	<b>Date of Birth:</b>	22-12-1982
3.	<b>Unique ID:</b>	---
4.	<b>Education Qualification:</b>	B.E, M.Tech, Ph.D
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	a. Teaching:14 Years b. Research:5 Years c. Industry:1 Year 8 Months
6.	<b>Area of Specialization:</b>	Machine Learning, IOT and Healthcare Analytics.
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	Artificial Intelligence, Machine Learning, Python Programming, Design Thinking, Managing Big Data, Software Engineering, Cloud Computing and Data mining & warehousing,
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	<b>Project Carried out:</b>	
10.	<b>Patents (Filed / Granted):</b>	Filed :1 Granted:2
11.	<b>Technology Transfer:</b>	
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	National/International Journals:18 National/International Conferences: 04
13.	<b>No. of books published with details:</b>	01 Dr. Pradeep K R. (2021). Security Architecture for At-Home Medical Care Using Wireless Sensor



		Network (1st ed.). Lambert Academic publishing, Germany ( <a href="https://www.lap-publishing.com">https://www.lap-publishing.com</a> ) ISBN 978-620-3-41152-2, Published on:17/02/2021.
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**Signature:**

**Date:08/01/2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

**Faculty Profile**



1.	Name:	Dr. Niranjanamurthy M
2.	Date of Birth:	24/12/1981
3.	Unique ID:	1-464730499
4.	Education Qualification:	MCA, M.Tech, Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. Teaching: 14 Years b. Research: 11 Years c. Industry: 02 Years
6.	Area of Specialization:	Software Testing, Web Services
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Undergraduate : DMS, AAI, BI, FDS, ATC, C, DS
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	No. of Students: 3 a. No. of International Conferences: 2 c. Ph.D. : Completed: 2, Ongoing: 3
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	2
11.	Technology Transfer:	Software Testing
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	15 No. of papers published in International Journals: 3 Conferences: 12
13.	No. of books published with details:	Edited Books: 2

Signature:

Date: 08/01/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: ...COMPUTER SCIENCE & ENGINEERING....**

**Faculty Profile**



1.	Name:	DR. MANOJ H M
2.	Date of Birth:	31-07-1987
3.	Unique ID:	1-7427536961
4.	Education Qualification:	B.E, M.TECH, PH.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 13 years b. 5 years
6.	Area of Specialization:	Software Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	C programming, DAA, DSA, IoT, AIML, Software Engineering, CO etc
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	7
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	15
13.	No. of books published with details:	Nil

**Dr. Manoj H M**

**Signature:**

**Date:08-01-2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Engineering**

**Faculty Profile**



1.	Name:	Dr. SRIVANI P
2.	Date of Birth:	30-4-1985
3.	Unique ID:	1-2482337914
4.	Education Qualification:	B. E. , M Tech, Ph. D
5.	Work Experience: a. Teaching: b. Research: c. Industry:	T: 14 yrs R: 8 yrs I : 2 yrs
6.	Area of Specialization:	Machine Learning , Artificial Intelligence
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	C, C++, Python, Java, Computer Organization, Operating System,
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	01 student M. Tech in CS  Ph. D from VTU
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	1 granted
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	14
13.	No. of books published with details:	1

Signature:

Date: 07/02/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Artificial Intelligence and Machine Learning

**Faculty Profile**



1.	Name:	DR. RAJESH I S
2.	Date of Birth:	10-12-1990
3.	Unique ID:	PAN-BJNPR6566H COLLEGE ID- 12999
4.	Education Qualification:	B.E, M.Tech, Ph.D
5.	Work Experience:	
	a. Teaching:	5
	b. Research:	3
	c. Industry:	0
	d. Others:	0
6.	Area of Specialization:	MEDICAL IMAGE PROCESSING
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Data Structure, Design and Analysis of Algorithm, Data Communication, Internet of Thing, Principles of AI, C-Programming, File Structure
8.	Research Guidance (No. of Students)	01
	a. No. of papers published in National / International Journals / Conferences:	Nil
	b. Master (Completed/Ongoing):	Nil
	c. Ph.D (Completed/Ongoing):	01
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	13
13.	No. of books published with details:	Nil

*Rajesh I S*

**Signature:**

**Date: 08-01-2024**



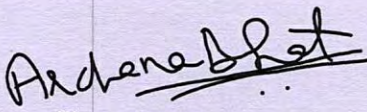
BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064



BRANCH: AI & ML

Faculty Profile

1.	Name:	Archana Bhat
2.	Date of Birth:	18/01/1990
3.	Unique ID:	13220
4.	Education Qualification:	B.E, MTech, Ph.D.
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 2.5 years b. 6 years
6.	Area of Specialization:	IoT
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	<u>Undergraduate</u> Storage Area Network, Compiler Design, DBMS, Computer Vision, Management & Entrepreneurship for IT Industry, System Modelling & Simulation, Scientific Foundation for Health, Universal Humanity Values - 2 <u>Postgraduate</u> IoT
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	Project Carried out:	4
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	International Conference - 2 Journals - 3
13.	No. of books published with details:	Nil

  
Signature:

Date: 31/01/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: AI & ML**

**Faculty Profile**



1.	Name:	Dr. Shanmuga Sundaram M
2.	Date of Birth:	09-04-1975
3.	Unique ID:	
4.	Education Qualification:	Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	17 Yrs 3.6 Yrs 2 Yrs 5 Yrs
6.	Area of Specialization:	Computer Science (Digital Image Processing)
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Undergraduate
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	NIL
13.	No. of books published with details:	NIL

Signature:

Date: 8-1-2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH:** Artificial Intelligence and Machine Learning

**Faculty Profile**



1.	<b>Name:</b>	Mr. Yatheesh N G
2.	<b>Date of Birth:</b>	16-01-1988
3.	<b>Unique ID:</b>	
4.	<b>Education Qualification:</b>	B.E, M.Tech(Computer Science & Engg)
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	a. 4 Years + b. 0 c. 0 d. 8 Years
6.	<b>Area of Specialization:</b>	Computer Science and Engineering
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	- C Programming, - Secured Programming, - Introduction to Web programming, - DBMS
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	b. M.Tech(Computer Science)
9.	<b>Project Carried out:</b>	-
10.	<b>Patents (Filed / Granted):</b>	-
11.	<b>Technology Transfer:</b>	-
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	-
13.	<b>No. of books published with details:</b>	-

**Signature:**

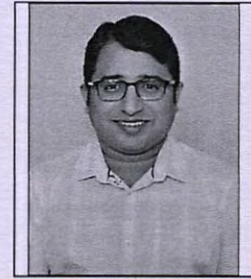
**Date: 8-1-2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Artificial Intelligence & Machine Learning (AI & ML)**

**Faculty Profile**



1.	Name:	Sanjay M Belgaonkar
2.	Date of Birth:	06 / 12 / 1987
3.	Unique ID:	
4.	Education Qualification:	B.E, M.Tech (VTU), PG Diploma (IIITB), M.S (LJMU, UK)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	13 Years 03 Years
6.	Area of Specialization:	Advanced Deep Learning, Signal Processing & Computer Vision
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	<b>UG Level:</b> Signals & Systems, Digital Signal Processing, Digital Image Processing, Introduction to IoT, Cloud Computing & Virtualization, Finite Automata, Analog & Digital Communication, Wireless Communication, Satellite Communication, Information Theory & Coding, Engineering Statistics & Linear Algebra, Probability & Random Process.  <b>PG Level:</b> Advanced Digital Communication, Wireless Mobile Networks, Error Control Coding, Modern DSP, Advanced Engineering Mathematics.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
9.	Project Carried out:	
10.	Patents (Filed / Granted):	2 (Filed)



11. Technology Transfer:	
12. Research Publications (No. of papers published in National / International Journals/Conferences):	<ul style="list-style-type: none"> <li>• 4 International Conferences</li> <li>• 2 International Journals</li> <li>• 10 National Conferences</li> </ul>
13. No. of books published with details:	<ul style="list-style-type: none"> <li>• 1 Book Published</li> </ul> <p>Principles of Communication Systems, Narendra Kumar, Sanjay M. Belgaonkar, G Praveen, Excellent Engineer Publications, First Edition, Feb 2018, ISBN: 9788193193532.</p>

Signature:

Date:



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: AI&ML**

**Faculty Profile**



1.	Name:	Mr. Sachin A Urabinahatti
2.	Date of Birth:	06/09/1986
3.	Unique ID:	
4.	Education Qualification:	MTech (Computer Science & Engineering)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	11 Nil Nil Nil
6.	Area of Specialization:	Image Processing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	C Programming, Object-Oriented Programming with C++, Data Structures, Software Engineering, Computer Algorithms, Database Management Systems, Ad-Hoc Wireless Networks, Machine Learning.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D. (Completed/Ongoing):	11  Completed Ongoing
9.	Project Carried out:	40+
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	11
13.	No. of books published with details:	Nil

**Signature:**

**Date: 08/01/2024**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**



**BRANCH: AI & ML**

**Faculty Profile**

	<b>Name:</b>	<b>SHOBHIT TEMBHRE</b>
	<b>Date of Birth:</b>	<b>05-05-1994</b>
	<b>Unique ID:</b>	
	<b>Education Qualification:</b>	<b>BE, M.TECH</b>
	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	a. Teaching- 4.10 Years b. Research- 0 c. Industry- 0 d. Others- 0
	<b>Area of Specialization:</b>	<b>Machine learning and information security</b>
	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<b>DBMS, DAA, MAD, Data Structures</b>
	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	<b>0</b>
	<b>Project Carried out:</b>	<b>0</b>
	<b>Patents (Filed / Granted):</b>	<b>0</b>



	Technology Transfer:	
	Research Publications (No. of papers published in National / International Journals/Conferences):	NA
	No. of books published with details:	NA

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2024

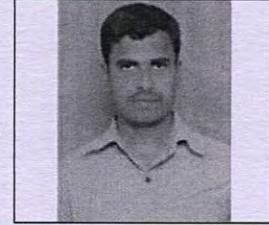
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**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Information Science& Engineering**

**Faculty Profile**



1.	Name:	Dr. KANTHARAJU V
2.	Date of Birth:	14/11/1983
3.	Unique ID:	13866
4.	Education Qualification:	BE, M.Tech, Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	19 years 06 years NIL NIL
6.	Area of Specialization:	Wireless Sensor Networks, IoT, Big Data Analytics
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	C, Unix Shell Programming, Unix System Programming, Python, Dataware housing, Data mining, Software engineering, File Structures, Internet of Things, Principles of AI, Cloud computing, Big Data Analytics
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL 15 NIL NIL
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	15
13.	No. of books published with details:	NIL

Signature: 

Date: 29/01/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064**

**BRANCH: Artificial Intelligence and Machine Learning**

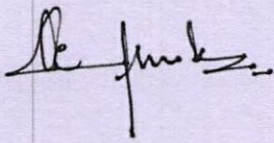
**Faculty Profile**



1.	<b>Name:</b>	Chidananda K
2.	<b>Date of Birth:</b>	15-07-1990
3.	<b>Unique ID:</b>	
4.	<b>Education Qualification:</b>	BE, M.Tech, Ph.D(Pursuing)
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	a. 1.10 Years b. Nil c. Nil d. Nil
6.	<b>Area of Specialization:</b>	Machine Learning
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	Undergraduate: 1. Values Ethics and Gender Culture 2. Information Retrieval Systems Postgraduate: 1. Anomaly Detection Algorithms
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	a. 9 International Conference 6 International Journals  b. Completed c. Ongoing
9.	<b>Project Carried out:</b>	Nil
10.	<b>Patents (Filed / Granted):</b>	4 Patents Filed and Published
11.	<b>Technology Transfer:</b>	Nil
12.	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	6 International Journals 9 International Conference
13.	<b>No. of books published with details:</b>	4 Books Published: 1. "SPEECH RECOGNITION ON DEEP LEARNING - MATLAB", LAP LAMBERT Academic Publishing, ISBN: 978-620-3-47104-5, 2021.



- |  |  |  |
|--|--|--|
|  |  | <ol style="list-style-type: none"><li>2. "Fault Detection and Isolation in Industrial Processes Based on RNN", LAP LAMBERT Academic Publishing, ISBN: 978-620-3-92775-7, 2021.</li><li>3. "Dropout Technique for Image Classification", LAP LAMBERT Academic Publishing, ISBN: 978-620-3-93199-8, 2021.</li><li>4. "Big Data Analytics", LAP LAMBERT Academic Publishing, ISBN: 978-620-4-20954-8, 2021.</li></ol> |
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Date:



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**BRANCH: AI & ML**

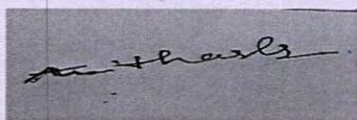
**Faculty Profile**



1.	Name:	Amitha S K
2.	Date of Birth:	13/02/88
3.	Unique ID:	
4.	Education Qualification:	M.TECH,PH.D(PURSUING)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	9 YEARS NIL NIL NIL
6.	Area of Specialization:	CPU-GPU VIRTUALIZATION
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	UG <ul style="list-style-type: none"> <li>• Database Management System.</li> <li>• Unix.</li> <li>• Data structure.</li> <li>• Microprocessor.</li> <li>• Computer organization.</li> <li>• C – Programming.</li> <li>• Analysis and design of algorithm.</li> <li>• Theory of Computation.</li> <li>• Operating System.</li> </ul>
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL  NIL NIL
9.	Project Carried out:	NO
10.	Patents (Filed / Granted):	NO



11. Technology Transfer:	NO
12. Research Publications (No. of papers published in National / International Journals/Conferences):	7
13. No. of books published with details:	NIL



Signature:

23/05/2024

Date:



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560119**

**BRANCH: AI & ML**



**Faculty Profile**

1.	Name:	Balaraju G
2.	Date of Birth:	12-06-1990
3.	Unique ID:	
4.	Education Qualification:	B.E, M.Tech, [Ph.D]
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 12 years b. Nil c. Nil d. Nil
6.	Area of Specialization:	Machine Learning
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	a. Data Structures b. Python Programming c. Machine Learning d. Design and Analysis of Algorithms e. Computer Organization and Architecture f. Information and Network Security g. Object Oriented Programming with Java h. Programming with C
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	5 (Filed & published)
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	1 Q2 rated journal 6 IEEE conference with Scopus Index citation 1 ICCIML Conference with Scopus Index citation.  Total 6
13.	No. of books published with details:	Nil

Signature: \_\_\_\_\_

Date: 13/03/2025



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**  
**BRANCH: Artificial Intelligence and Machine Learning**



### Faculty Profile

1.	Name:	<b>Mayuri K P</b>
2.	Date of Birth:	<b>15.07.1988</b>
3.	Unique ID:	<b>1-4847199718</b>
4.	Education Qualification:	<b>B.E, M.Tech, (Ph.D.)</b>
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	<b>Teaching : 12.5 years</b>
6.	Area of Specialization:	<b>Computer Science and Engineering</b>
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	<b>UG Courses:</b> C Programming, Data mining and data warehousing, Design and analysis of Algorithms, Software Architecture, Data structures, System modelling and Simulation, Automata Theory and Computability, System software and Compiler design, operating systems, Python programming, web programming and applications, Machine Learning, Research methodology.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	<b>No. of papers published in International Conferences: 01</b> <b>International journals: 03</b> <b>Master degree: Completed</b> <b>Ph.D : Ongoing</b>
9.	Project Carried out:	<b>NIL</b>
10.	Patents (Filed / Granted):	<b>NIL</b>
11.	Technology Transfer:	<b>NIL</b>
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	<b>papers published in International Journals: 03</b>
13.	No. of books published with details:	<b>NIL</b>

Signature:

Date: 12.02.2025



# BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

YELAHANKA, BANGALORE - 560064

BRANCH: Artificial Intelligence & Machine Learning



## Faculty Profile

Kavitha D

1.	Name:	Kavitha D
2.	Date of Birth:	26/06/87
3.	Unique ID:	585182501944
4.	Education Qualification:	BE(CSE) , MTech(CNE), PhD(Pursuing),
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	6.9 Years 3 Years - -
6.	Area of Specialization:	IoT & 5G networks
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	C Programming, Java Programming, Operating System, Computer Networks, CNS, AI, Python Programming
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	Nil
10.	Patents (Filed / Granted):	Nil
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	3
13.	No. of books published with details:	1- Computer Graphics in Kindle edition

Signature:

Date: 20/03/2025



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**

**YELAHANKA, BANGALORE - 560064**

**BRANCH: ARTIFICIAL INTELLIGENCE AND MACHINE  
LEARNING**

**Faculty Profile**



1.	Name:	SHRUTHI S
2.	Date of Birth:	18/10/1991
3.	Unique ID:	605401768534
4.	Education Qualification:	BE, MTECH, (PHD) in Computer Science and Engineering
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	Teaching:8 Research: NIL Industry: NIL Others: NIL
6.	Area of Specialization:	Machine Learning and Image Processing
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Problem Solving through programming, Machine learning, Software Engineering, Management and Entrepreneurship for IT Industry, Operating systems, Storage Area Network, Database Management System, Artificial Intelligence and Machine learning, Data Mining and Data Warehousing, Information network security, Cryptography, Big Data Analytics, Object Oriented Modeling and Design & Design, Data Structure and Application Python and Analysis of Algorithm.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL
9.	Project Carried out:	15 Projects Guided for UG Students
10.	Patents (Filed / Granted):	3(Filed)
11.	Technology Transfer:	NIL



	Research Publications (No. of papers published in National / International Journals/Conferences):	National Conferences:3 International Conferences:11 International Journals:18
13.	No. of books published with details:	"Machine learning using python" in Scientific International Publishing House (SIPH) with ISBN NO:978-93-5757-892-9 in the year 2023.

Signature: Shruthi S

Date:20/03/2025



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

**BRANCH: Dept of AI & ML**

**Faculty Profile**



1.	Name:	Megha S
2.	Date of Birth:	24/02/1995
3.	Unique ID:	
4.	Education Qualification:	M.Tech, (Ph.D persuing)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	5.5 years
6.	Area of Specialization:	Computer Science and Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Computer Science and Engineering
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	Nil
9.	Project Carried out:	
10.	Patents (Filed / Granted):	2 Filed
11.	Technology Transfer:	Nil
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	2 conference, 4 journal
13.	No. of books published with details:	Nil

**Signature:**

**Date: 13/2/2025**



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**

**YELAHANKA, BANGALORE - 560064**

**Artificial Intelligence and Machine Learning**

**BRANCH: .....**

**Faculty Profile**



1.	Name:	ABHISHEK K L
2.	Date of Birth:	10/06/1992
3.	Unique ID:	
4.	Education Qualification:	B.E M.Tech (PhD)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a. 7.5years b. 2 years
6.	Area of Specialization:	Computer Network Engineering, Deep Learning, IoT, DevOps
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Data Structures, IoT, DevOps, Web Programming, Blockchain Technology, Computer Networks.
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	
9.	Project Carried out:	
10.	Patents (Filed / Granted):	
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	10
13.	No. of books published with details:	



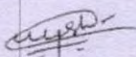
**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**YELAHANKA, BANGALORE - 560064**

BRANCH: ...AIML.....

**Faculty Profile**



1.	Name:	UMESH T
2.	Date of Birth:	14-06-1988
3.	Unique ID:	Requested VTU ID: BYAI00023064 AICTE id: -
4.	Education Qualification:	M. Tech in CSE
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a) 1 c) 1
6.	Area of Specialization:	Database System , cloud and Cyber security,
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	1) Introduction to Python programming 2) Database Management system 3) Full stack development: Django
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	b) Masters - Completed c) Ph.D- Ongoing
9.	Project Carried out:	-
10.	Patents (Filed / Granted):	-
11.	Technology Transfer:	-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	-
13.	No. of books published with details:	-

  
Signature:

Date: 21-03-2025



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENTYELAHANKA,  
BANGALORE - 560064**

**BRANCH: Computer Science and Business systems**

**Faculty Profile**



1.	<b>Name:</b>	<b>Dr. Vishwa Kiran S</b>
2.	<b>Date of Birth:</b>	<b>26/09/1977</b>
3.	<b>Unique ID:</b>	
4.	<b>Education Qualification:</b>	<b>B.E in Electronics and Communication M Tech in Computer Science and Engineering PhD in Computer Science and Engineering</b>
5.	<b>Work Experience:</b> a. Teaching: b. Research: c. Industry: d. Others:	<b>10 3 15</b>
6.	<b>Area of Specialization:</b>	<b>Embedded Systems, Internet of Things, Data Science</b>
7.	<b>Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:</b>	<b>C Programming, Unix System Programming Python Programming Java Programming C# Programming Android Application Development Internet of Things</b>
8.	<b>Research Guidance (No. of Students)</b> a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	<b>a. 8 b. Completed c. Completed</b>
9.	<b>Project Carried out:</b>	<b>Single Board Computer Development</b>
	<b>Patents (Filed / Granted):</b>	<b>3</b>
10.	<b>Technology Transfer:</b>	
	<b>Research Publications (No. of papers published in National / International Journals/Conferences):</b>	<b>8</b>
11.	<b>No. of books published with details:</b>	<b>Nil</b>



Signature:

Date:



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

YELAHANKA, BANGALORE - 560064

BRANCH: Computer Science & Engineering *Bulbnd System*

Faculty Profile



1.	Name:	Dr. Archana R A
2.	Date of Birth:	15-02-1986
3.	Unique ID:	1-7427599656
4.	Education Qualification:	B.E/M.Tech/Ph.D
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	a.14yrs b.7yrs c.1yr -
6.	Area of Specialization:	Big Data Security
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	VLSI Design, Optical Networks, Unix Shell Programming, Unix System Programming, C Programming, Operating system, Computer Networks, Data Communication, DBMS
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	-Nil-
9.	Project Carried out:	-Nil-
10.	Patents (Filed / Granted):	-Nil-
11.	Technology Transfer:	-Nil-
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	17
13.	No. of books published with details:	-Nil-

*Signature*  
Signature:

Date: 22/1/24



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
YELAHANKA, BANGALORE - 560064

BRANCH: Artificial Intelligence and Machine Learning

C9B8

Faculty Profile



1.	Name:	PRADEEPKUMAR G M
2.	Date of Birth:	22-03-1988
3.	Unique ID:	1-1487171193
4.	Education Qualification:	B.E, M.tech,(Ph.D.)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	11.5 years Nil Nil Nil
6.	Area of Specialization:	Computer Science and Engineering
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	C program, Java, Python ,DBMS
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	-- -- -- --
9.	Project Carried out:	--
10.	Patents (Filed / Granted):	01-Published
11.	Technology Transfer:	
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	08
13.	No. of books published with details:	--

Signature:

Date:08/01/2024



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**

**YELAHANKA, BANGALORE - 560064**

**BRANCH: Computer Science and Business Systems**

**Faculty Profile**



1.	Name:	UDAYAPRASAD P K
2.	Date of Birth:	13/02/1996
3.	Unique ID:	Aadhar Card: 9051 1780 0897 VTU ID: 1BYCB0024678
4.	Education Qualification:	M.Tech (Ph. D)
5.	Work Experience: a. Teaching: b. Research: c. Industry: d. Others:	3.6 Years 2.6 Years 1 Years
6.	Area of Specialization:	IoT, AI & ML, Networking
7.	Course taught at Diploma / Post Diploma / Undergraduate / Postgraduate / Post Graduate Diploma Level:	Machine learning, Programming, Data structures, Computer networks
8.	Research Guidance (No. of Students) a. No. of papers published in National / International Journals / Conferences: b. Master (Completed/Ongoing): c. Ph.D (Completed/Ongoing):	NIL  13
9.	Project Carried out:	NIL
10.	Patents (Filed / Granted):	NIL
11.	Technology Transfer:	NIL
12.	Research Publications (No. of papers published in National / International Journals/Conferences):	13
13.	No. of books published with details:	NIL

**Signature: Udayaprasad P K**

**Date: 20/03/2025**





# BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

Autonomous Institute affiliated to Visvesvaraya Technological University Belagavi, Karnataka, India  
NBA Accredited UG Programmes in CSE, ECE, ETE, ME & EEE and PG programme in MCA & M.Tech.(CSE)  
NAAC Accredited with 'A' Grade; Approved by AICTE, New Delhi

Ref: BMSIT&M/2024-2025/1032

Date: 08.08.2024

The Director  
BMS Educational Trust  
Bull Temple Road,  
Bengaluru - 560 019.

Sir,

**REVISED**

Sub: Sri. B S Narayan Memorial Scholarship  
Ref: Your email dated 30.07.2024

With reference to the above, we are forwarding herewith the following **5 (five)** names of the students for award of Sri. B S Narayan Memorial Scholarship for poor and meritorious students on the occasion of Remembrance Day of late Sri. B. S. Narayan, Donor Trustee.

## UG

Sl. No.	Dept.	Name	USN	Quota	Overall CGPA	Parents Occupation	Parents annual income
1	ECE	B Meghana	1BY20EC038	CET	9.28	Driver	65000
2	CSE	Brundaja D N	1BY20CS041	CET	9.13	Weaver	30000

## PG - MBA

Sl. No.	Dept.	Name	USN	Quota	Overall CGPA	Parents Occupation	Parents annual income
3	MBA	Nishchita Ganesh Gudigar	1BY22BA028	CET	9.13	Carpentry	80000

## PG - MCA

Sl. No.	Dept.	Name	USN	Quota	Overall CGPA	Parents Occupation	Parents annual income
4	MCA	Soundarya	1BY22MC050	CET	8.91	Coolie	40000

## M.Tech - Cyber Security

Sl. No.	Dept.	Name	USN	Quota	Overall CGPA	Parents Occupation	Parents annual income
5	M.Tech Cyber	Beerappa	1BY22SCR01	CET	8.76	Farmer	32000

This is for your kind consideration and needful.

Thanking you,

PRINCIPAL

*Vision: To emerge as one of the finest technical institutions of higher learning, to develop engineering Professionals who are technically competent, ethical and environment friendly for betterment of the society.*

Post Box No. 6443, Avalahalli, Doddaballapur Main Road, Yelahanka, Bengaluru - 560 064, India

Phone: Office: + 91 80 6873 0429/6873 0444/2952 1171 | Fax: +91 80 6873 0444 | email : principal@bmsit.in | Website : https://bmsit.ac.in



**BMS Institute of Technology & Management**  
Avalahalli, Bangalore - 560064

**Late Sri. B. M. Sreenivasaiah Merit Cum Means Scholarship for the year 2022 - 23**

Sl. No	Dept/ Branch	Name of the students	USN	CGPS/ Average%	Annual Income
1	EC	INCHARA M ✓	1BY22EC042 ✓	9.5	12000
2	EC	CHARITHRA V ✓	1BY21EC032 ✓	9.5	85000
3	EC	B MEGHANA ✓	1BY20EC038 ✓	9.46	65000
4	EC	DEEKSHITH SWAMY S M G ✓	1BY19EC043 ✓	9.44	50000
5	CS	APPAJI B ✓	1BY22CS026 ✓	9.2	30000
6	CS	MD SAMEER ✓	1BY21CS220 ✓	9.5	80000
7	CS	NITHIN R SWAMY ✓	1BY20CS129 ✓	9	90000
	CS	NIL			
8	IS	LAKSHMI PRIYA PADHIHARI ✓	1BY22IS072 ✓	9.42	80000
9	IS	KUSUMA N ✓	1BY21IS071 ✓	9.14	30000
10	IS	TEJASWINI K S ✓	1BY20IS183 ✓	9.1	30000
11	IS	VANDANA D ✓	1BY19IS176 ✓	9.21	50000
12	ME	DHANUSH N ✓	1BY22ME011 ✓	9.3	85000
13	ME	MANISH N ✓	1BY22ME412 ✓	8.95	70000
14	ME	SIDDAIAH ✓	1BY21ME411 ✓	8.54	95000
15	ME	THARUN GOWDA M ✓	1BY19ME050 ✓	9.33	13000
16	EE	SRINIVAS S ✓	1BY22EE053 ✓	7.95	12000
17	EE	VARSHA K S ✓	1BY22EE415 ✓	8.55	25000
18	EE	DIVYASHREE B S ✓	1BY20EE013 ✓	8.25	11000
19	EE	PRATHIBA M ✓	1BY19EE041 ✓	9.55	75000
20	ET	BHAVANA S ✓	1BY22ET012 ✓	9.3	30000
21	ET	R VENKATESH ✓	1BY21ET033 ✓	9.65	98000
22	ET	DEEPTHI S GOWDA ✓	1BY20ET022 ✓	8.33	90000
23	ET	PURUSHOTHAM REDDY ✓	1BY19ET039 ✓	9.33	12000
24	CV	KRISHNA ✓	1BY23CV415 ✓	8.85	70000
25	CV	DARSHAN MARUTI KHAVANI ✓	1BY22CV400 ✓	9.1	40000
26	CV	BOOMIKA K V ✓	1BY20CV005 ✓	8.91	95000
27	CV	MADHAN KUMAR J ✓	1BY19CV019 ✓	9.67	95000
28	AI	SANJANA B R ✓	1BY22AI092 ✓	8.79	18000
29	AI	ANAND RAMACHANDRA BHAT ✓	1BY21AI005 ✓	9.14	40000
30	AI	JEEVANA SHRAVYA M ✓	1BY20AI020 ✓	9.83	11000
31	AI	AKANKSH RAO S R ✓	1BY19AI007 ✓	9.54	11000

**PRINCIPAL**

**BMS Inst. of Tech. & Mgmt.**  
Doddaballapur Main Road

Avalahalli, Yelahanka, B'lore-64



Phone: 26611636

DHARMAPRAKASHA RAJAKARYAPRASAKTA

## B. M. Sreenivasaiah Educational Trust

Post Box No.1908, Bull Temple Road,  
Bengaluru - 560 019.

Ref: ET/057/2024-25

Date: 30.07.2024

To,

All Principals of all Colleges;  
All Directors;

Dear Sir/Madam,

### Sub: Sri. B. S. Narayan Memorial Scholarship

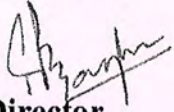
As you are aware that **Sri. B. S. Narayan Memorial Scholarship** will be awarded every year on **23<sup>rd</sup> August**, on the occasion of the **Remembrance Day of Late Sri. B. S. Narayan, Donor Trustee**. The same will be awarded at BMS Trust Office on **Friday, 23<sup>rd</sup> August, 2024 at 9.00 AM.**, this year also.

These Scholarships will carry a Cash Award, amounting to Rs.15,000/- each, to be awarded to the poor and meritorious students, whose annual income is less than Rs.4.5 Lakhs. The Principals and Directors of all the Colleges are requested to forward two names as per the earlier procedure for the said Scholarship for the year 2024-25, before close of the office hours i.e., 9<sup>th</sup> August, 2024 positively.

No names will be accepted after 9<sup>th</sup> August, 2024.

This is for your necessary information and immediate action please.

Regards,



**Director,**  
**BMS Educational Trust,**  
**B.M.S. Educational Trust**  
**CO Bangalore - 560 019.**

The Principal, BMSCE -

Is requested to direct the concerned person to make necessary arrangements for the function.

\$ for O.S - Admission  
Vamra





**APPROVAL PROCESS 2024-25**

**Extension of Approval (EOA) - Corrigendum**

F.No. South-West/1-43664536384/2024/EOA/Corrigendum-1

Date of Approval: 30-Jun-2024

To,

The Principal Secretary (Hr. & Tech Education)  
Govt. of Karnataka, K. G.S., 6th Floor,  
M.S. Building, R. N. 645, Dr. B. R. Ambedkar Road,  
Bangalore-560001



**Sub: Extension of Approval for the Academic Year 2024-25**

EOA Issued on

F.No. South-West/1-  
43664536384/2024/EOA

27-May-2024

Corrigendum 1

F.No. South-West/1-  
43664536384/2024/EOA/Corrigendum-1

30-Jun-2024

Ref: Online application of the Institution submitted for Extension of Approval for the Academic Year 2024-25

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Education), Powers delegated in AICTE ACT 1987, (No 52 of 1987) chapter II - u/s 2(g) to regulate Technical and subsequent Regulations of AICTE, I am directed to convey the approval to:

Permanent Id	1-4152591	Application Id	1-43664536384
Name of the Institution	BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT	Name of the Society/Trust	BMS EDUCATIONAL TRUST
Institution Address	POST BOX NO.6443, AVALAHALLI, DODDABALLAPURA MAIN ROAD, YELAHANKA, BANGALORE - 560064., BANGALORE, BANGALORE URBAN, Karnataka, 560064	Society/Trust Address	POST BOX NO. 1908, BULL TEMPLE ROAD, BASAVANGUDI, BANGALORE-19, BASAVANGUDI, BANGALORE URBAN, Karnataka, 560019
Institution Type	Private-Self Financing	Region	South-West
Year of Establishment	2002		

**To conduct following Programs/Courses with the Intake indicated below for the Academic Year 2024-25**

Level	Program	Course	Affiliating Body (University /Body)	Intake Approved for 2023-24	Intake Approved for 2024-25	NRI Approval Status	FN / Gulf quota/ OCI/ Approval Status
UNDER GRADUATE	ENGINEERING AND TECHNOLOGY	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	Visvesvaraya Technological University, Belgaum	180	360	No	Yes

*Registered*  
*HA* *21/7/24*



Level	Program	Course	Affiliating Body (University /Body)	Intake Approved for 2023-24	Intake Approved for 2024-25	NRI Approval Status	FN / Gulf quota/ OCI/ Approval Status
UNDER GRADUATE	ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	Visvesvaraya Technological University, Belgaum	60	60	No	Yes
UNDER GRADUATE	ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND BUSINESS SYSTEMS	Visvesvaraya Technological University, Belgaum	60	60	No	No
UNDER GRADUATE	ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	Visvesvaraya Technological University, Belgaum	240	900^	No	Yes
UNDER GRADUATE	ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	Visvesvaraya Technological University, Belgaum	60	60	No	Yes
UNDER GRADUATE	ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATION ENGINEERING	Visvesvaraya Technological University, Belgaum	120	180^	No	Yes
UNDER GRADUATE	ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	Visvesvaraya Technological University, Belgaum	60	60	No	Yes
POST GRADUATE	ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	Visvesvaraya Technological University, Belgaum	18	18	No	No
POST GRADUATE	COMPUTER APPLICATIONS	MASTER OF COMPUTER APPLICATIONS	Visvesvaraya Technological University, Belgaum	120	120	No	Yes
POST GRADUATE	MANAGEMENT	MBA	Visvesvaraya Technological University, Belgaum	120	120	No	No
POST GRADUATE	ENGINEERING AND TECHNOLOGY	CYBER SECURITY	Visvesvaraya Technological University, Belgaum	18	18	No	No

^Intake after Merging of Course



**Course(s) Approved for Merger with other Course(s) for Academic Year 2024-25**

Level	Program	Course	Affiliating Body (Univ/Body)	Course Merged With
UNDER GRADUATE	ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATION ENGINEERING	Visvesvaraya Technological University, Belgaum	ELECTRONICS AND COMMUNICATION ENGINEERING
UNDER GRADUATE	ENGINEERING AND TECHNOLOGY	INFORMATION SCIENCE AND ENGINEERING	Visvesvaraya Technological University, Belgaum	COMPUTER SCIENCE AND ENGINEERING

All AICTE approved Institutions are empowered to nurture ecosystems for Skilling (through Vocational courses) via making effective use of existing infrastructure facilities and human resources.

**It is mandatory to comply with all the essential requirements as given in APH 2024-25 to 2027 (Chapter-VI)**

The Institution/ University is having the following deficiencies as per the online application submitted to AICTE and the same shall be complied within One years from the date of issue of this EoA.

Deficiencies Noted based on Self Disclosure	
Particulars	Deficiency
1. Faculty Deficiency	Yes

\*Please refer Deficiency Report for details



## **Important Instructions**

1. **Corrigendum for:**
  1. Change in Approved Intake
2. As per mandatory Disclosure of APH 2024-27(Annexure-18, page180) Institutions must disclose the following information submitted to Council at the Prominent location on its website.
  - i. Department wise availability of Infrastructure along with approved courses and intake approved by the Council.
  - ii. Faculty details: Department wise: Name& Designation of the faculty members/teaching staff along with their qualification, tenure of service in your organization, total experience, Institution should also disclose Student Faculty Ratio, Cadre Ratio.
  - iii. Additionally Audited Financial Statements for last 3 Financial years.
3. Reservation Policy of the Central Government (Including EWS) / Respective State Government/ UT as the case shall be applicable to all the Programmes. The concerned State Government/ UT Admission authority shall decide Modalities of Admission.
4. The Institution offering courses earlier in the Regular Shift, First Shift, Second Shift/Part Time are now amalgamated as total intake and shall have to fulfil all facilities such as Infrastructure, Faculty and other requirements as per the norms specified in the Approval Process Handbook 2024-25 to 2027 for the Total Approved Intake.
5. In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the **Executive Council / General Council as available on the record of AICTE shall be final and binding.**
6. All AICTE institutions are highly encouraged to get NBA/NAAC accreditation. All eligible AICTE institutions are thoroughly encouraged to participate in NIRF ranking process.
7. Deemed to be University: Institutions Deemed to be Universities (Running Technical Education Programmes), it is mandatory to have AICTE approval from the Academic Year 2018-19 in compliance of the Hon'ble Supreme Court Order dated 03-11-2017 passed in CA No.17869- 17870 /2017.
8. AICTE Approved Institutes are encouraged to utilize SWAYAM PLUS Courses up-to 40%
9. Internship is mandatory for all admitted students.
10. AICTE Approved Institutes are encouraged to make efficient use of the flagship schemes like:
  - a. Parakh: Student Gap analysis portal bases services.
  - b. Students Scholarship schemes like Pragati, Saksham, Swanath, ADF, etc.
  - c. Course in Indian Languages.
  - d. ATAL FDPs: Faculty training for Emerging areas and cutting edge Technologies.
  - e. Augmenting Utilization of Research Assets (AURA).
  - f. Smart India Hackathon: World's largest Open Innovation Platform.

**Prof.Rajive Kumar**  
**Member Secretary, AICTE**

Copy to:

1. **The Director Of Technical Education\*\*, Karnataka**
2. **The Registrar\*\*,**



Visvesvaraya Technological University, Belgaum

3. **The Principal / Director,**  
BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT  
Post Box No.6443, Avalahalli,  
Doddaballapura Main Road,  
Yelahanka, Bangalore - 560064.,  
Bangalore,Bangalore Urban,  
Karnataka,560064
4. **The Secretary / Chairman,**  
POST BOX NO. 1908, BULL TEMPLE ROAD, BASAVANGUDI, BANGALORE-19  
BASAVANGUDI,BANGALORE URBAN  
Karnataka,560019
5. **Guard File(AICTE)**

Note: Validity of the Course details may be verified at <http://www.aicte-india.org/>

\*\* Individual Approval letter copy will not be communicated through Post/Email. However, a consolidated list of Approved Institutions(bulk) may be downloaded from the respective login id's.

*This is a computer generated Statement. No signature Required*



# BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT (AUTONOMOUS), YELAHANKA, BANGALORE-560064


Reported status for the academic year 2024-25

SL. No.	Branch	CET				CET (SNQ)			CET-J&K	AICTE J&K PMSSS	Comedk			Management quota					Grand Total			
		Total Intake	Intake	Reported	Vacancy (Intake-Reported)	Intake	Reported	Vacancy (Intake-Reported)			Intake	Reported	Vacancy (Intake-Reported)	Regular Intake (A)	COMEDK unfilled seat (B)	KEA unfilled seat (C)	Total Intake (A+B+C)	Reported	Vacancy (Intake-Reported)	Total Intake (excluding J&K, AICTE J&K PMSSS & SNQ)	Total Admitted (excluding J&K, AICTE J&K PMSSS & SNQ)	Vacancy (excluding J&K, AICTE J&K PMSSS & SNQ)
1	ECE	180	81	81	0	9	9	0	0	0	54	42	12	45	12	0	57	57	0	180	180	0
2	CSE	900	405	403	2	45	45	0	0	2	270	225	45	225	45	2	272	272	0	900	900	0
3	ME	60	27	25	2	3	3	0	0	0	18	3	15	15	15	2	32	32	0	60	60	0
4	EEE	60	27	27	0	3	3	0	0	1	18	11	7	15	7	0	22	22	0	60	60	0
5	CV	60	27	24	3	3	3	0	0	0	18	1	17	15	17	3	35	32	3	60	57	3
6	AI&ML	360	162	162	0	18	18	0	0	1	108	82	26	90	26	0	116	116	0	360	360	0
7	CSBS	60	27	26	1	3	3	0	0	0	18	15	3	15	3	1	19	19	0	60	60	0
Total		1680	756	748	8	84	84	0	0	4	504	379	125	420	125	8	553	550	3	1680	1677	3

SL. No.	Branch	DCET		
		Intake	Reported	Vacancy (Intake-Reported)
1	ECE	12	12	0
2	CSE	24	24	0
3	IS	24	23	1
4	ME	6	6	0
5	EE	6	6	0
6	ET	6	5	1
7	CV	6	6	0
8	CB	6	6	0
9	AI	18	18	0
Total		108	106	2

PIO			
Branch	Intake	Reported	Vacancy (Intake-Reported)
ECE	27	3	24
CSE	135	73	62
ME	9	0	9
EEE	9	0	9
CV	9	0	9
AI&ML	54	10	44
CSBS	0	0	0
Total	243	86	157

SL. No.	Branch	PGCET			Management Quota					Grand Total		
		Intake	Reported	Vacancy	Regulat Intake (A)	KEA unfilled seat (B)	Total Intake (A+B)	Reported	Vacancy	Total Intake	Total Admitted	Total Vacancy
1	MCA	60	59	1	60	1	61	40	21	120	99	21
2	MBA	60	56	4	60	4	64	30	34	120	86	34
3	M.Tech-SCS	15	11	4	3	4	7	3	4	18	14	4
4	M.Tech-SCR	14	10	4	4	4	8	8	0	18	18	0
Total		149	136	13	127	13	140	81	59	276	217	59

  
**PRINCIPAL**  
**BMS Inst. of Tech. & Mgmt.**  
**Doddaballapur Main Road**  
**Avalahalli, Yelahanka, B'lore-64**



BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT (AUTONOMOUS), YELAHANKA, BANGALORE-560064

Admission status for the academic year 2023-24

SL. No.	Branch	CET			CET (SNQ)			CET-J&K	AICTE J&K PMSSS	Comed-K			Management quota						Grand Total		
		Intake	Reported	Vacancy (Intake-Reported)	Intake	Reported	Vacancy (Intake-Reported)			Intake	Reported	Vacancy (Intake-Reported)	Regular Intake (A)	COMEDK unfilled seat (B)	KEA unfilled seat (C)	Total Intake (A+B+C)	Reported	Vacancy (Intake-Reported)	Total Intake (excluding J&K, AICTE J&K PMSSS & SNQ)	Total Admitted (excluding J&K, AICTE J&K PMSSS & SNQ)	Vacancy (excluding J&K, AICTE J&K PMSSS & SNQ)
1	ECE	54	53	1	6	6	0	0	0	36	34	2	30	2	1	33	33	0	120	120	0
2	CSE	108	102	6	12	10	2	0	1	72	59	13	60	13	6	79	79	0	240	240	0
3	ISE	108	105	3	12	11	1	0	1	72	66	6	60	6	3	69	69	0	240	240	0
4	ME	27	26	1	3	3	0	0	0	18	9	9	15	9	1	25	25	0	60	60	0
5	EEE	27	27	0	3	3	0	0	1	18	11	7	15	7	0	22	22	0	60	60	0
6	ETE	27	27	0	3	3	0	0	0	18	13	5	15	5	0	20	20	0	60	60	0
7	CV	27	24	3	3	3	0	0	2	18	6	12	15	12	3	30	30	0	60	60	0
8	AI&ML	81	78	3	9	9	0	0	1	54	44	10	45	10	3	58	58	0	180	180	0
9	CSBS	27	27	0	3	3	0	0	0	18	14	4	15	4	0	19	19	0	60	60	0
Total		486	469	17	54	51	3	0	6	324	256	68	270	68	17	355	355	0	1080	1080	0

SL. No.	Branch	DCET - Lateral Entry				Vacancy (Intake-Reported)	Branch	PIO		
		Intake	Surrender	Total Intake	Reported			Intake	Reported	Vacancy (Intake-Reported)
1	ECE	12	1	13	13	0	ECE	18	0	18
2	CSE	18	0	18	18	0	CSE	36	19	17
3	ISE	18	0	18	18	0	ISE	36	4	32
4	ME	6	19	25	24	1	ME	9	0	9
5	EEE	6	0	6	6	0	EEE	9	1	8
6	ET	6	0	6	6	0	ET	9	0	9
7	CV	6	27	33	32	1	CV	9	3	6
8	AI&ML	12	0	12	12	0	AI&ML	27	4	23
Total		84	47	131	129	2	Total	153	31	122

SL. No.	Branch	PGCET			Management Quota					Grand Total		
		Intake	Reported	Vacancy	Regulat Intake (A)	KEA unfilled seat (B)	Total Intake (A+B)	Reported	Vacancy	Total Intake	Total Admitted	Total Vacancy
1	MCA	60	60	0	60	0	60	51	9	120	111	9
2	MBA	60	54	6	60	6	66	60	6	120	114	6
3	M.Tech - SCS	14	11	3	4	3	7	4	3	18	15	3
4	M.Tech - Cy.Sec	15	8	7	3	7	10	2	8	18	10	8
Total		149	133	16	127	16	143	117	26	276	250	26



**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT (AUTONOMOUS), YELAHANKA, BANGALORE-560064**

Reported status for the academic year 2022-23

SL. No.	Branch	CET			CET (SNO)			CET-J&K	AICTE J&K PMSSS	Comed-K			Management quota						Grand Total		
		Intake	Reported	Vacancy (Intake-Reported)	Intake	Reported	Vacancy (Intake-Reported)			Intake	Reported	Vacancy (Intake-Reported)	Regular Intake (A)	COMEDK unfilled seat (B)	KEA unfilled seat (C)	Total Intake (A+B+C)	Reported	Vacancy (Intake-Reported)	Total Intake (excluding J&K, AICTE J&K PMSSS & SNO)	Total Admitted (excluding J&K, AICTE J&K PMSSS & SNO)	Vacancy (excluding J&K, AICTE J&K PMSSS & SNO)
1	ECE	54	45	9	6	6	0	0	0	36	30	6	30	6	8	44	44	0	120	119	1
2	CSE	81	70	11	9	9	0	1	1	54	53	1	45	1	11	57	57	0	180	180	0
3	ISE	81	73	8	9	9	0	0	1	54	47	7	45	7	8	60	60	0	180	180	0
4	ME	27	21	6	3	3	0	0	0	18	1	17	15	17	6	38	19	19	60	41	19
5	EEE	27	27	0	3	3	0	0	0	18	4	14	15	14	0	29	29	0	60	60	0
6	ETE	27	26	1	3	3	0	0	0	18	5	13	15	13	1	29	29	0	60	60	0
7	CV	27	23	4	3	3	0	0	1	18	0	18	15	18	4	37	10	27	60	33	27
8	AI&ML	54	43	11	6	6	0	0	2	36	32	4	30	4	11	45	45	0	120	120	0
Total		378	328	50	42	42	0	1	5	252	172	80	210	80	49	339	293	46	840	793	47

SL. No.	Branch	DCET - Lateral Entry				Vacancy (Intake-Reported)	Branch	PIO		
		Intake	Surrender	Total Intake	Reported			Intake	Reported	Vacancy (Intake-Reported)
1	ECE	18	0	18	18	0	ECE	18	1	17
2	CSE	18	0	18	18	0	CSE	27	17	10
3	ISE	18	0	18	18	0	ISE	27	6	21
4	ME	6	23	29	29	0	ME	9	2	7
5	EEE	6	10	16	16	0	EEE	9	0	9
6	ET	6	9	15	11	4	ET	9	0	9
7	CV	6	35	41	12	29	CV	9	1	8
8	AI&ML	6	0	6	6	0	AI&ML	18	1	17
Total		84	77	161	128	33	Total	126	28	98

SL. No.	Branch	PGCET			Management Quota					Grand Total		
		Intake	Reported	Vacancy	Regular Intake (A)	KEA unfilled seat (B)	Total Intake (A+B)	Allotted	Vacancy	Total Intake	Total Admitted	Total Vacancy
1	MCA	30	30	0	30	0	30	30	0	60	60	0
2	MBA	30	28	2	30	2	32	32	0	60	60	0
3	M.Tech - SCS	14	1	13	4	13	17	0	17	18	1	17
4	M.Tech - Cy.Sec	15	1	14	3	14	17	0	17	18	1	17
Total		89	60	29	67	29	96	62	34	156	122	34



**BMS Institute of Technology and Management**

Yelahanka, Bengaluru - 560064.

**Merit List of applications received for Regular Management quota  
seats for the AY 2024-25**

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YCS088	DANDU SUDHESHA SHIVANI	CSE	12th	99.17	Y
2	YCS070	SHIVANI SHENOY	CSE	12th	96.00	Y
3	YCS042	HARIPRIYA M S	CSE	12th	95.33	Y
4	YCS135	P V TANUSHA	CSE	12th	94.67	Y
5	YCS122	VINUTH	CSE	12th	93.67	Y
6	YCS203	GIRIDHAR KEMBAL K V	CSE	12th	93.33	Y
7	YCS073	KUPPURU LAHITHA REDDY	CSE	12th	92.83	Y
8	YCS005	BHUVANA K	CSE	12th	92.33	Y
9	YCS059	JEEVIKA N	CSE	12th	92.33	Y
10	YCS142	RIYA RAJ	CSE	12th	92.00	Y
11	YCS054	MAYANK MIDIGESI	CSE	12th	91.67	Y
12	YCS058	PULAKUNTA HANSIKA REDDY	CSE	12th	91.50	Y
13	YCS139	GAVARA LOHIT GANESH NAIDU	CSE	12th	91.43	Y
14	YCS158	SHREYA R	CSE	12th	91.33	Y
15	YCS071	HARSHAPRIYA R	CSE	12th	91.00	Y
16	YCS079	ZUHA FATHIMA	CSE	12th	91.00	Y
17	YCS055	UME AIMAN	CSE	12th	90.67	Y
18	YCS019	MAANYA R S	CSE	12th	90.33	Y
19	YCS043	RUSHIL SAI R	CSE	12th	90.33	Y
20	YCS068	TRISHA REDDY C	CSE	12th	90.33	Y
21	YCS144	K S MANAS	CSE	12th	90.33	Y
22	YCS112	PRAJNA SAHA	CSE	12th	90.00	Y
23	YCS208	PRAGYA SINGH	CSE	12th	89.67	Y
24	YCS018	STUTHI PRATHAP	CSE	12th	89.33	Y
25	YCS134	K H KEERTHANA	CSE	12th	89.33	Y
26	YCS106	SAMARTHA N K	CSE	12th	88.67	Y
27	YCS051	MADHVESH S	CSE	12th	88.67	Y
28	YCS053	SAMRIDHI KAMBOJ	CSE	12th	88.33	Y
29	YCS136	DUSHYANTH GOWDA M	CSE	12th	88.33	Y
30	YCS194	AYUSH Y A	CSE	12th	88.33	Y
31	YCS031	AMOGHA SIMHA	CSE	12th	88.00	Y
32	YCS084	P MIDHUN KRISHNA	CSE	12th	88.00	Y
33	YCS119	YESHWANTH GOWDA C P	CSE	12th	88.00	Y
34	YCS123	CHALLA GREESHMANTH	CSE	12th	88.00	Y



Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
35	YCS193	VEER PATEL	CSE	12th	87.67	Y
36	YCS033	SRUSHTI ANILKUMAR SHELLIKERI	CSE	12th	87.67	Y
37	YCS188	SHAIK MAHAMMAD NAWAZ	CSE	12th	87.50	Y
38	YCS026	VAMKEEPURAM SIVA SOWRAB	CSE	12th	87.33	Y
39	YCS113	NEERUGATTU MOHAMMED TALHA	CSE	12th	87.33	Y
40	YCS090	TEJAS H K	CSE	12th	87.33	Y
41	YCS030	V AISHWARYA	CSE	12th	87.00	Y
42	YCS093	PAVAMANA M N	CSE	12th	86.33	Y
43	YCS097	CHANDANA P	CSE	12th	86.00	Y
44	YCS176	THEJAS NIRMAL	CSE	12th	85.67	Y
45	YCS177	C NISHITHA	CSE	12th	85.67	Y
46	YCS165	GAJJALA MANVITHA REDDY	CSE	12th	85.33	Y
47	YCS190	RACHITHA B	CSE	12th	85.00	Y
48	YCS109	BHUVI HANSIKA KONDARAJU	CSE	12th	84.33	Y
49	YCS179	APOORVA D	CSE	12th	84.33	Y
50	YCS196	DASARI CHANDU PRAKASH	CSE	12th	84.00	Y
51	YCS008	THEJAS BHAT	CSE	12th	83.67	Y
52	YCS081	SUNGALA LITHYA	CSE	12th	83.67	Y
53	YCS214	ADITYA SHREEDHARA	CSE	12th	83.33	Y
54	YCS046	N YUVA SREENIVAS	CSE	12th	83.00	Y
55	YCS117	SHASHANK	CSE	12th	83.00	Y
56	YCS163	MAHEER HUSSAIN H J	CSE	12th	82.67	Y
57	YCS007	PEDDINENI VENKATA PRANEESH	CSE	12th	82.33	Y
58	YCS094	SYED OWAIS	CSE	12th	82.33	Y
59	YCS108	NITHISH SAGAR DAS	CSE	12th	82.33	Y
60	YCS161	TUHIN MECH	CSE	12th	82.33	Y
61	YCS002	SMARAN SHASHI	CSE	12th	82.33	Y
62	YCS101	KETHA SAI KARTHIK	CSE	12th	82.00	Y
63	YCS156	ARYAN AVADOOT SATHAYE	CSE	12th	82.00	Y
64	YCS178	MESHWAS PATEL	CSE	12th	82.00	Y
65	YCS057	MILAN SAMPATH	CSE	12th	81.67	Y
66	YCS110	MANISH L	CSE	12th	81.67	Y
67	YCS137	KALYAN R	CSE	12th	81.67	Y
68	YCS044	M HARSHITHA REDDY	CSE	12th	81.50	Y
69	YCS032	ARAVIND M BHOVI	CSE	12th	81.33	Y
70	YCS041	KUNTAPPAGARI RENUKA	CSE	12th	81.00	Y
71	YCS115	DHANUSH M	CSE	12th	81.00	Y



Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
72	YCS151	RISHI KUMAR GOWDA	CSE	12th	81.00	Y
73	YCS186	SHREYAS S	CSE	12th	80.67	Y
74	YCS125	LOLAA M H	CSE	12th	80.33	Y
75	YCS091	OSHEEN NAGPAL	CSE	12th	80.33	Y
76	YCS029	SPANDANA S	CSE	12th	80.00	Y
77	YCS064	HARSHINI K V	CSE	12th	80.00	Y
78	YCS130	MOHAMMED AKHIL HUSSAIN	CSE	12th	80.00	Y
79	YCS175	SAANVI CHOUDHARY	CSE	12th	80.00	Y
80	YCS217	CHINMAYEE S PUJAR	CSE	12th	80.00	Y
81	YCS140	SRUJAN S RAO	CSE	12th	79.67	Y
82	YCS202	FATIMAH ZAHRA	CSE	12th	79.67	Y
83	YCS021	ARYAN SUJAY KUMAR U K	CSE	12th	79.33	Y
84	YCS027	NIRMITHA SHASHIDHAR	CSE	12th	79.33	Y
85	YCS038	REVANASIDDAPPA DURGAD	CSE	12th	79.33	Y
86	YCS171	VELPURI RAHUL KUMAR	CSE	12th	79.33	Y
87	YCS218	SAURAV KUMAR	CSE	12th	79.33	Y
88	YCS003	PRAGYAN HOTA	CSE	12th	79.00	Y
89	YCS056	TANEESHA JAGADISH	CSE	12th	79.00	Y
90	YCS121	SHANKARGOUDA	CSE	12th	79.00	Y
91	YCS127	RAGHUNANDANA S L	CSE	12th	79.00	Y
92	YCS065	BRINDA R	CSE	12th	78.33	Y
93	YCS107	B JISHNU HARSHITH SASTRY	CSE	12th	78.00	Y
94	YCS086	VIVEK S	CSE	12th	77.67	Y
95	YCS167	V AKSHAYA	CSE	12th	77.00	Y
96	YCS098	YATHIN P PATEL	CSE	12th	76.67	Y
97	YCS215	MAYANK JHUN JHUNWALA	CSE	12th	76.50	Y
98	YCS181	ALLADA JAYANTH	CSE	12th	76.33	Y
99	YCS145	KHUSHI BIRADAR	CSE	12th	76.00	Y
100	YCS210	PRIYANSSHI BOMB	CSE	12th	76.00	Y
101	YCS014	POOJITHA J	CSE	12th	75.67	Y
102	YCS153	MITHUN H R	CSE	12th	75.33	Y
103	YCS199	C JHANAVI	CSE	12th	75.33	Y
104	YCS017	PARTH PRASHANT MANE	CSE	12th	75.00	Y
105	YCS082	MONISH B	CSE	12th	75.00	Y
106	YCS001	HITESH Y S	CSE	12th	74.67	Y
107	YCS104	MANOGJNA KUMMAMURU	CSE	12th	74.67	Y
108	YCS220	AARYAN NARESHKUMAR VANIK	CSE	12th	74.67	Y



Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
109	YCS035	SUNIDHI D K	CSE	12th	74.33	Y
110	YCS085	TUSHAR MOONKA	CSE	12th	74.00	Y
111	YCS063	KANISKA RAJ	CSE	12th	73.67	Y
112	YCS015	C SRIKAR KRISHNA	CSE	12th	73.33	Y
113	YCS049	RACHANA PRASHANT SHENDE	CSE	12th	73.33	Y
114	YCS128	MOHITHA RAGHURAJU	CSE	12th	73.33	Y
115	YCS006	SHAUN JOHN VICTOR	CSE	12th	73.00	Y
116	YCS195	GARIMA RANA	CSE	12th	73.00	Y
117	YCS221	KRISHNA CHARAN P	CSE	12th	72.67	Y
118	YCS099	GAUTHAM RAJ M	CSE	12th	72.67	Y
119	YCS010	MOHAMMED ANAS TIMIRI	CSE	12th	72.00	Y
120	YCS096	SHASHANK SRIRAM	CSE	12th	72.00	Y
121	YCS174	ASHISH CHOUBEY	CSE	12th	72.00	Y
122	YCS045	GAZANFAR MOIN	CSE	12th	71.67	Y
123	YCS060	KOUSTUBH SHARAT JAISWAL	CSE	12th	71.67	Y
124	YCS209	RAUNAK SINGH	CSE	12th	71.67	Y
125	YCS141	BHANUPRAKASH	CSE	12th	71.33	Y
126	YCS069	CHARAN S REDDY	CSE	12th	71.00	Y
127	YCS124	CHIRAG GARG	CSE	12th	71.00	Y
128	YCS192	SHREYAS SANTOSH NAIK	CSE	12th	70.67	Y
129	YCS022	DEBANWITA DUTTA	CSE	12th	70.67	Y
130	YCS224	INESH SRIVASTAV	CSE	12th	70.33	Y
131	YCS126	P M MANOGNA	CSE	12th	69.67	Y
132	YCS146	R MANAS REDDY	CSE	12th	69.67	Y
133	YCS089	C GURU ISHITHA REDDY	CSE	12th	69.67	Y
134	YCS048	NISHAN BABU S B	CSE	12th	69.00	Y
135	YCS172	DHRUV SINGH	CSE	12th	69.00	Y
136	YCS024	VAISHNAVI H	CSE	12th	68.67	Y
137	YCS116	AKSHIT TYAGI	CSE	12th	68.67	Y
138	YCS133	PRATHAM B B	CSE	12th	68.67	Y
139	YCS185	ANANYA PRIYADARSHINI	CSE	12th	68.67	Y
140	YCS092	AKANKSHA RAJ	CSE	12th	68.33	Y
141	YCS197	VARNITHA S Y	CSE	12th	68.33	Y
142	YCS036	MATLA ROHITH REDDY	CSE	12th	68.00	Y
143	YCS102	GREESHMA U	CSE	12th	67.33	Y
144	YCS050	AYUSH PURI	CSE	12th	67.00	Y
145	YCS131	HIRAVE SUMIT SANTOSH	CSE	12th	67.00	Y



Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
146	YCS152	BHUVAN V	CSE	12th	67.00	Y
147	YCS004	LOHITAKSH NARENDRA	CSE	12th	66.67	Y
148	YCS173	J B NIDHISH	CSE	12th	66.67	Y
149	YCS095	ARIJIT CHAKRABORTY	CSE	12th	66.33	Y
150	YCS023	NAIDU HEMANTH KUMAR	CSE	12th	66.33	Y
151	YCS083	K H PRADYUMNA	CSE	12th	66.00	Y
152	YCS198	CHINMAYI SIRI P R	CSE	12th	66.00	Y
153	YCS087	VALASA REDDY ACHYUTHA KRISHNA REDDY	CSE	12th	65.50	Y
154	YCS200	DARSH MISHRA	CSE	12th	65.00	Y
155	YCS157	HARSHITH MATHEW	CSE	12th	64.67	Y
156	YCS047	SONAL NAGARAJ	CSE	12th	64.33	Y
157	YCS129	SUDEEPTO ROY CHOUDHARY	CSE	12th	64.33	Y
158	YCS028	PRABHJOT SINGH	CSE	12th	64.33	Y
159	YCS168	MURAMREDDY DEEPAK REDDY	CSE	12th	64.33	Y
160	YCS012	VIGNESH VELLORE VENKATESH	CSE	12th	64.00	Y
161	YCS154	GNANA PRIYA K R	CSE	12th	64.00	Y
162	YCS148	MANYA RUNGTA	CSE	12th	63.67	Y
163	YCS162	M CHARAN	CSE	12th	63.00	Y
164	YCS062	TANISH RAO R	CSE	12th	62.67	Y
165	YCS205	YASHIKA MEHTA	CSE	12th	62.33	Y
166	YCS191	DEVANSH JINDAL	CSE	12th	62.33	Y
167	YCS016	CHETHAN T S	CSE	12th	62.00	Y
168	YCS080	UTKARSH RAJ	CSE	12th	62.00	Y
169	YCS149	SAUMAY MATHUR	CSE	12th	62.00	Y
170	YCS077	ADITYA ANAND SINGH	CSE	12th	61.67	Y
171	YCS160	GORLA KOMAL	CSE	12th	61.67	Y
172	YCS052	DHRUV PRAVEEN PAWADSHETTAR	CSE	12th	61.33	Y
173	YCS166	AKSHITA VIJAY	CSE	12th	61.00	Y
174	YCS072	VINYAS KARUGUNDA THANDAVESHWARABABU	CSE	12th	60.67	Y
175	YCS040	RAHUL BHARDWAJ	CSE	12th	60.33	Y
176	YCS170	CHARAAN KUMAR P	CSE	12th	60.33	Y
177	YCS189	LAKSHAYA GARG	CSE	12th	59.67	Y
178	YCS020	DRASHTI MARADIA	CSE	12th	59.67	Y
179	YCS114	GARLANKA NAGA DHANUSH	CSE	12th	59.67	Y
180	YCS206	ANANT KUMAR PAL	CSE	12th	59.67	Y
181	YCS067	SAHIL KHANNA	CSE	12th	59.00	Y
182	YCS138	K P SOMAIAH	CSE	12th	59.00	Y



Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
183	YCS100	DASARI GEETHIKA	CSE	12th	58.67	Y
184	YCS180	P M SHEETAL	CSE	12th	58.33	Y
185	YCS207	DHRUV JAIN	CSE	12th	58.33	Y
186	YCS120	KUNAL RAI	CSE	12th	58.33	Y
187	YCS143	NIKHITA V	CSE	12th	58.33	Y
188	YCS013	KEERTHANA N	CSE	12th	58.00	Y
189	YCS184	YUVA KIRAN C	CSE	12th	58.00	Y
190	YCS159	SAHIL DAGAR	CSE	12th	57.67	Y
191	YCS078	PRATYUSH RAJ	CSE	12th	57.67	Y
192	YCS147	RUCHI SAO	CSE	12th	57.67	Y
193	YCS201	SHREYANSH SAURABH	CSE	12th	57.67	Y
194	YCS034	PRANAV RAKESH KANYADI	CSE	12th	57.00	Y
195	YCS118	ASHUTOSH SHARMA	CSE	12th	56.67	Y
196	YCS155	RANBEER ROY	CSE	12th	56.67	Y
197	YCS150	CHAITRA SHREE Y S	CSE	12th	56.67	Y
198	YCS187	POLINENI VENKAT KARTHIK	CSE	12th	56.67	Y
199	YCS225	MADDURU SAI KARTHIK	CSE	12th	56.67	Y
200	YCS009	SAAKSHI VIKRAM	CSE	12th	56.33	Y
201	YCS039	VIBHOR HAIKERWAL	CSE	12th	56.33	Y
202	YCS111	ANIKETH GUPTA	CSE	12th	56.33	Y
203	YCS169	LUZAIN SARA MANSOOR	CSE	12th	56.33	Y
204	YCS066	HRIDYANSH MUKHERJEE	CSE	12th	56.00	Y
205	YCS105	PRITHVI PRATAP DEV	CSE	12th	56.00	Y
206	YCS182	P NIKHIL REDDY	CSE	12th	55.67	Y
207	YCS037	SUMANTH NARAYAN	CSE	12th	55.67	Y
208	YCS164	NAMAN MISHRA	CSE	12th	55.67	Y
209	YCS219	ARJO BAKSHI	CSE	12th	55.67	Y
210	YCS222	SAMITH REDDY S	CSE	12th	55.00	Y
211	YCS074	YARATAPALLI MANASWIN REDDY	CSE	12th	54.67	Y
212	YCS211	TEJUS	CSE	12th	54.67	Y
213	YCS216	VIVEK KUMAR	CSE	12th	54.33	Y
214	YCS025	PRITHVI BHARATH REDDY	CSE	12th	54.00	Y
215	YCS076	ADARSH KUMAR PATHAK	CSE	12th	54.00	Y
216	YCS212	ANJALI SINGH	CSE	12th	53.67	Y
217	YCS061	PEYYALA JAHNAVI	CSE	12th	53.33	Y
218	YCS132	PRATHAM PARGAONKAR	CSE	12th	52.00	Y
219	YCS223	HARSHITHA G	CSE	12th	52.00	Y



Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
220	YCS183	AYUSH RAJ	CSE	12th	51.33	Y
221	YCS075	RISHAV RAJ	CSE	12th	50.67	Y
222	YCS103	VARSHA B S	CSE	12th	50.67	Y
223	YCS011	PIYUSH NARAYAN	CSE	12th	50.67	Y
224	YCS213	BAIBHAV JHA	CSE	12th	50.67	Y
225	YCS204	KRISHNENDU ROY	CSE	12th	46.67	Y



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**Avalahalli, Yelahanka, B'lore-64**





## BMS Institute of Technology and Management

Yelahanka, Bengaluru - 560064.

Merit List of applications received for Regular Management quota  
seats for the AY 2024-25

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YAI019	MONISHA B A	AI	12th	96.00	Y
2	YAI062	GURURAJ REDDY P	AI	12th	95.33	Y
3	YAI023	EDDULA SAMYUKTHA	AI	12th	91.33	Y
4	YAI002	KULDEEP SINH JADEJA	AI	12th	91.00	Y
5	YAI018	MANISH KUMAR U	AI	12th	91.00	Y
6	YAI064	K AVINASH	AI	12th	90.67	Y
7	YAI031	PUDUGOSULA SAI PUNITH	AI	12th	90.33	Y
8	YAI009	VARSHA N	AI	12th	89.67	Y
9	YAI033	PEDDIREDDY NAVADEEP REDDY	AI	12th	89.50	Y
10	YAI029	VARUN R	AI	12th	89.33	Y
11	YAI089	ASHISH SHARMA	AI	12th	89.33	Y
12	YAI057	VIPPARLA SRISUDARSHAN	AI	12th	89.00	Y
13	YAI038	SYED MOINUDDIN A	AI	12th	87.67	Y
14	YAI065	PRAVEEN P	AI	12th	87.67	Y
15	YAI088	GUNDA THARUN TEJ	AI	12th	87.00	Y
16	YAI087	BHARGAVI DESHPANDE	AI	12th	86.67	Y
17	YAI060	AMAN K M	AI	12th	86.67	Y
18	YAI085	ADITYA JAMANE	AI	12th	86.67	Y
19	YAI022	MANISH K V	AI	12th	85.67	Y
20	YAI047	SHREYAS R	AI	12th	85.33	Y
21	YAI010	S V NANDAN	AI	12th	85.00	Y
22	YAI063	S SHRAVANTH REDDY	AI	12th	85.00	Y
23	YAI015	HITESH M	AI	12th	84.67	Y
24	YAI074	PRIYANSHU R BHAGAT	AI	12th	83.83	Y
25	YAI067	JIGYASHMAN HAZARIKA	AI	12th	83.67	Y
26	YAI021	PRANAMYA GOPALKRISHNA HEGDE	AI	12th	83.33	Y
27	YAI052	YENNAM LOURDU KOUSHIK REDDY	AI	12th	82.67	Y
28	YAI083	DHYAN SHANKAR N G	AI	12th	82.67	Y
29	YAI032	D H ADARSHINI	AI	12th	81.67	Y
30	YAI077	NITHIN GOWDA	AI	12th	79.33	Y
31	YAI056	Y P ROHITH	AI	12th	79.00	Y



Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
32	YAI012	REDDY MAHESH GOUD	AI	12th	78.50	Y
33	YAI044	ARCHITA KUMARI	AI	12th	78.33	Y
34	YAI001	VARNIKA K R	AI	12th	77.67	Y
35	YAI051	S TEJASVI	AI	12th	77.00	Y
36	YAI090	KARANAM SHAMITHA	AI	12th	76.83	Y
37	YAI011	PRATEEK N S	AI	12th	76.67	Y
38	YAI041	PENUMATCHA CHANDRA SUMA KRISHNA	AI	12th	76.67	Y
39	YAI073	KAMALESH D M	AI	12th	76.67	Y
40	YAI035	ABHAY R	AI	12th	76.33	Y
41	YAI039	GOKUL ANAND	AI	12th	76.33	Y
42	YAI042	CHAITANYA D	AI	12th	76.33	Y
43	YAI078	HIMANSHU JAISWAL	AI	12th	76.33	Y
44	YAI049	PRANAV UTHAPPA P M	AI	12th	76.00	Y
45	YAI081	TOTA NIKHILESWAR	AI	12th	75.33	Y
46	YAI071	B NITEESH	AI	12th	75.00	Y
47	YAI040	P CHIRANTH RAJ	AI	12th	74.33	Y
48	YAI054	SUCHIT S RANADEV	AI	12th	73.33	Y
49	YAI017	B C YASHAS RAJ	AI	12th	71.67	Y
50	YAI082	SARTHAK J	AI	12th	71.33	Y
51	YAI069	NISHU KUMAR	AI	12th	71.00	Y
52	YAI006	KRUTHI R	AI	12th	70.67	Y
53	YAI053	HITESH G V	AI	12th	70.33	Y
54	YAI028	J SURIYA	AI	12th	69.67	Y
55	YAI034	CHARVI G	AI	12th	69.33	Y
56	YAI030	SHREYAS BIDIAR	AI	12th	69.00	Y
57	YAI027	DHEEKSHA N	AI	12th	68.67	Y
58	YAI075	SUPRATIK SANGRAM	AI	12th	68.67	Y
59	YAI076	HAMSASHREE	AI	12th	68.67	Y
60	YAI037	LAWRENCE PRADEEP F	AI	12th	67.33	Y
61	YAI045	S MOURYA ROOPESH REDDY	AI	12th	67.33	Y
62	YAI005	AISHANI DAS GOSWAMI	AI	12th	66.67	Y
63	YAI024	DEEPESH S	AI	12th	65.33	Y
64	YAI007	PRINCE KUMAR	AI	12th	65.00	Y
65	YAI025	ASHWIN AIYAPPA K B	AI	12th	64.00	Y



Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
66	YAI013	KRISHIV DEEPAK	AI	12th	63.67	Y
67	YAI046	MR KARTHIK MADHAV	AI	12th	63.67	Y
68	YAI084	MOHAMMAD AFLAH S	AI	12th	63.00	Y
69	YAI072	AISHWARYA HOMBAL	AI	12th	62.67	Y
70	YAI016	KISHOR J	AI	12th	62.33	Y
71	YAI058	RITIKA GIRISH KULKARNI	AI	12th	61.67	Y
72	YAI050	GANESH C	AI	12th	61.00	Y
73	YAI055	ROHAN SUDEESH CHALAKUZH	AI	12th	59.33	Y
74	YAI080	BILLAVA NISHKA GOPAL	AI	12th	59.25	Y
75	YAI014	RYAN SHARMA	AI	12th	58.67	Y
76	YAI079	NANDINI AGRAWAL	AI	12th	57.67	Y
77	YAI026	SOHAN SURESH PAI	AI	12th	56.33	Y
78	YAI020	ASHIKA SHEKAR	AI	12th	55.33	Y
79	YAI068	GOUTHAM K R	AI	12th	54.00	Y
80	YAI043	VISHAL PRAKASH NIDAMANOOR	AI	12th	53.67	Y
81	YAI059	ADARSH NAIK	AI	12th	53.67	Y
82	YAI048	SANIVARAPU VENKATA MANOJ KUMAR REDDY	AI	12th	52.67	Y
83	YAI003	AYUSH KUMAR	AI	12th	52.33	Y
84	YAI061	VANSH RAJ SHARMA	AI	12th	52.33	Y
85	YAI066	ARYAN PRASAD DAS	AI	12th	51.67	Y
86	YAI086	ABHIK SARAF	AI	12th	51.67	Y
87	YAI004	NIKITA SURESH NANJAN	AI	12th	50.67	Y
88	YAI036	RAUNAK RAJ	AI	12th	49.67	Y
89	YAI070	YESHWIN J	AI	12th	49.00	Y
90	YAI008	MOHAMMED ARHAM ABRAR	AI	12th	48.00	Y

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**Avalahalli, Yelahanka, B'lore-64**



BMS Institute of Technology and Management

Yelahanka, Bengaluru - 560064.

**Merit List of applications received for Regular Management quota  
seats for the AY 2024-25**

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YME005	ANISH CHETRI	ME	12th	90.67	Y
2	YME006	KARTHIK GOPAL HALLIYUR	ME	12th	87.33	Y
3	YME011	RITHVIK R	ME	12th	86.00	Y
4	YME010	PRANAV JAYAN R S	ME	12th	82.33	Y
5	YME008	AASHISH S BADIGER	ME	12th	81.67	Y
6	YME014	ROHIT SUNDAR	ME	12th	78.00	Y
7	YME007	AATIF MOHIDEEN	ME	12th	70.33	Y
8	YME003	SAMARTH M HULAMANI	ME	12th	68.67	Y
9	YME004	VIVEK D B	ME	12th	68.00	Y
10	YME009	MARUVADA SREE LAKSHMI VARSHITHA	ME	12th	66.33	Y
11	YME002	VARUN H V	ME	12th	64.33	Y
12	YME015	MOHAMMED ASIM ASHPAK SAYED	ME	12th	60.33	Y
13	YME013	THEJAS SRINIVAS	ME	12th	59.00	Y
14	YME012	PUNITH M	ME	12th	53.67	Y
15	YME001	MOHITH M	ME	12th	47.67	Y

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**BMS Institute of Technology and Management**

Yelahanka, Bengaluru - 560064.

**Merit List of applications received for Regular Management quota  
seats for the AY 2024-25**

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YEC019	P ACHYUTH	ECE	12th	98.33	Y
2	YEC028	JEEVAN L	ECE	12th	96.00	Y
3	YEC016	AMIRISETTY VENKATA MOUNISH	ECE	12th	95.17	Y
4	YEC041	SHREYA A HANGAL	ECE	12th	94.00	Y
5	YEC044	NIKHIL K	ECE	12th	93.67	Y
6	YEC009	PRANATHI RAJEEV GIRIMAJI	ECE	12th	92.00	Y
7	YEC029	MISHAEL THOMAS M	ECE	12th	91.00	Y
8	YEC037	KIRTHANA J LOKESH	ECE	12th	90.00	Y
9	YEC034	NAGESH DINESH PALEKAR	ECE	12th	89.67	Y
10	YEC033	V NANDA KISHORE NAIK	ECE	12th	89.33	Y
11	YEC026	ANVITHA SEELAVANTH MATH	ECE	12th	87.67	Y
12	YEC015	THANUSHREE B S	ECE	12th	87.00	Y
13	YEC017	ABHITHA ROHITH	ECE	12th	85.33	Y
14	YEC011	PRATHAM M GADAL	ECE	12th	84.67	Y
15	YEC012	BAID PRAKASH FULORIA	ECE	12th	82.00	Y
16	YEC030	ABHINAV SURESH	ECE	12th	82.00	Y
17	YEC005	SHUBHAM VISHAL INJATKAR	ECE	12th	80.33	Y
18	YEC020	SAMIKSHA S	ECE	12th	80.33	Y
19	YEC027	NAVNEET ARUN	ECE	12th	78.00	Y
20	YEC002	POLINENI MAYANK	ECE	12th	77.17	Y
21	YEC042	MAKARLA RANVITHA	ECE	12th	76.67	Y
22	YEC018	VANAMA SAI HIRANMAYI	ECE	12th	76.00	Y
23	YEC032	MEHAL BHAGAT	ECE	12th	75.67	Y
24	YEC031	VAISHNAVI B K	ECE	12th	75.00	Y
25	YEC035	ANVITA SINGH	ECE	12th	75.00	Y
26	YEC045	MANVANTH A YADAV	ECE	12th	75.00	Y
27	YEC036	SHANE ALAN S	ECE	12th	74.33	Y
28	YEC013	RUDRAKSH SINGH	ECE	12th	74.00	Y
29	YEC021	KASINADHUNI VENKATA SATHVIK	ECE	12th	71.67	Y
30	YEC024	MANUSHREE DV	ECE	12th	70.00	Y



Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
31	YEC025	ROHIT NEGI	ECE	12th	69.00	Y
32	YEC040	CHIRAG GHOSH	ECE	12th	68.67	Y
33	YEC004	LOCHAN K	ECE	12th	67.00	Y
34	YEC001	SUNKARA MUNEERA FARHEEN	ECE	12th	66.33	Y
35	YEC003	MANSI GURUPRASAD	ECE	12th	65.67	Y
36	YEC023	AVIRAL BISHT	ECE	12th	65.00	Y
37	YEC006	B MANAS REDDY	ECE	12th	64.00	Y
38	YEC043	ANANYA DASH	ECE	12th	64.00	Y
39	YEC007	PARINITHA V	ECE	12th	63.33	Y
40	YEC039	ADITYA HARISH JOSHI	ECE	12th	59.67	Y
41	YEC008	SAI TEJAS M N	ECE	12th	57.67	Y
42	YEC010	MOHAMMED ZAHID SHARIFF	ECE	12th	57.67	Y
43	YEC038	AJAY GOWDA K L	ECE	12th	57.00	Y
44	YEC022	DIVIT SHARMA	ECE	12th	55.33	Y
45	YEC014	N ABHI NANDAN REDDY	ECE	12th	54.33	Y

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BMS Institute of Technology and Management

Yelahanka, Bengaluru - 560064.

Merit List of applications received for Regular Management quota  
seats for the AY 2024-25

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YEE005	DEONA BRAGANZA	EEE	12th	87.00	Y
2	YEE013	MANJULA RANI P N	EEE	12th	77.67	Y
3	YEE004	ARJUN RAGHU	EEE	12th	75.00	Y
4	YEE003	DALAVAI SAI HARSHITH	EEE	12th	73.83	Y
5	YEE001	MRINAL MURUGESHA	EEE	12th	71.33	Y
6	YEE015	ADITI MURALIDHAR	EEE	12th	71.33	Y
7	YEE011	SUBRAHMANYA VIRENDRA ANTREDI	EEE	12th	71.00	Y
8	YEE007	ROHAN MUDGAL	EEE	12th	69.33	Y
9	YEE010	R THRIVIKRAM	EEE	12th	67.33	Y
10	YEE012	FULZELE SARTHAK RAJENDRA	EEE	12th	65.33	Y
11	YEE014	ABHYUDAY AKASI	EEE	12th	64.00	Y
12	YEE008	BALA VENKATA SAI VINAY MANYALA	EEE	12th	57.33	Y
13	YEE006	ABHINAV S	EEE	12th	56.33	Y
14	YEE009	H S K LOHITH SHRIRAM	EEE	12th	56.00	Y
15	YEE002	SHREYAS G V	EEE	12th	52.67	Y

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BMS Institute of Technology and Management

Yelahanka, Bengaluru - 560064.

Merit List of applications received for Regular Management quota  
seats for the AY 2024-25

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YCV003	BALAJI P	CV	12th	78.67	Y
2	YCV005	BHAARATH VEDHANTH B K R M	CV	12th	72.33	Y
3	YCV001	YASHWANTH J GOWDA	CV	12th	71.33	Y
4	YCV006	ANAGH MANIVARNAN	CV	12th	71.33	Y
5	YCV009	HARSHAVARDHAN N Y	CV	12th	67.00	Y
6	YCV012	VIHAN KUNDARGI	CV	12th	67.00	Y
7	YCV008	SRI MANISHA RAMISETTY	CV	12th	63.00	Y
8	YCV013	DHANUSH GOWDA N	CV	12th	63.00	Y
9	YCV002	VINAY KUMAR	CV	12th	58.67	Y
10	YCV014	DEV PRAKASH CHINMAY K	CV	12th	57.00	Y
11	YCV010	ASHANK ADITHYA S	CV	12th	56.67	Y
12	YCV007	ABHISHEK THAKUR	CV	12th	56.33	Y
13	YCV004	MAYUR KUMAR A	CV	12th	53.00	Y
14	YCV015	ABHISHEK	CV	12th	52.67	Y
15	YCV011	HARSHITH R	CV	12th	51.33	Y

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BMS Institute of Technology and Management

Yelahanka, Bengaluru - 560064.

Merit List of applications received for Regular Management quota  
seats for the AY 2024-25

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YCB011	NIRANTH ARVIND	CB	12th	89.33	Y
2	YCB006	TANYASRI E Y	CB	12th	86.00	Y
3	YCB008	ANIRUDH S KASHYAP	CB	12th	77.67	Y
4	YCB014	MIHIR GOVIND	CB	12th	71.33	Y
5	YCB002	VIKASINI SIVABALAN	CB	12th	67.67	Y
6	YCB005	DHIMAHAI RAI	CB	12th	67.33	Y
7	YCB007	PRIYANKA H NAVALE	CB	12th	67.00	Y
8	YCB010	ROUNAK SAMANTA	CB	12th	65.67	Y
9	YCB003	MONISH SRI RAMA SAI MAMILLAPALLI	CB	12th	64.00	Y
10	YCB012	AYUSH KUMAR	CB	12th	64.00	Y
11	YCB004	MUSKAN SINGH	CB	12th	63.67	Y
12	YCB001	PRIYANSHU SHEKHAR	CB	12th	61.00	Y
13	YCB009	NANDI R	CB	12th	57.00	Y
14	YCB015	RAHUL N MURTHY	CB	12th	57.00	Y
15	YCB013	TANUSH JONNADULA	CB	12th	56.00	Y

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BMS Institute of Technology and Management

Yelahanka, Bengaluru - 560064.

Merit List of applications received for Management quota - COMED-K Unfilled  
seats for the AY 2024-25

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YKCB003	NAMRATHA C N	CB	12th	85.33	Y
2	YKCB001	DHEERAJ K	CB	12th	73.00	Y
3	YKCB002	MOHAMMAD UMAIR FAIYAZ	CB	12th	49.00	Y

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BMS Institute of Technology and Management

Yelahanka, Bengaluru - 560064.

Merit List of applications received for Management quota - COMED-K Unfilled  
seats for the AY 2024-25

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YKEE007	ABHIRAMA S ADIGA	EE	12th	92.00	Y
2	YKEE004	ANANYA S DIWAKAR	EE	12th	86.00	Y
3	YKEE006	NEMITHA V	EE	12th	81.33	Y
4	YKEE003	MAHANTESHWARA U	EE	12th	79.67	Y
5	YKEE001	PRATHYUSH B	EE	12th	61.33	Y
6	YKEE002	VANSHIKA SATRUGHAN BISWAL	EE	12th	56.67	Y
7	YKEE005	KUMAR RAJ A N	EE	12th	52.67	Y

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## BMS Institute of Technology and Management

Yelahanka, Bengaluru - 560064.

Merit List of applications received for Management quota - COMED-K Unfilled  
seats for the AY 2024-25

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YKEC003	SAMEER KEDILAYA	ECE	12th	97.33	Y
2	YKEC004	NAVYA S	ECE	12th	94.33	Y
3	YKEC008	POORVIKA S JAVALI	ECE	12th	82.67	Y
4	YKEC010	RITHESH S	ECE	12th	75.00	Y
5	YKEC009	NIHARIKA MYDUKUR	ECE	12th	71.33	Y
6	YKEC011	PRAJWAL SRINATH	ECE	12th	68.67	Y
7	YKEC002	ARNAV PANIYA	ECE	12th	68.67	Y
8	YKEC001	TANVI SAI VELLA	ECE	12th	68.00	Y
9	YKEC005	DHRUV SWAROOP	ECE	12th	65.33	Y
10	YKEC012	KAPPA SIDHARTHA KRISHNA	ECE	12th	63.00	Y
11	YKEC007	HASINI K V	ECE	12th	58.67	Y
12	YKEC006	NITIN RAJ	ECE	12th	52.67	Y

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seats for the AY 2024-25

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YKME013	AKSHAY KAMATH	ME	12th	88.00	Y
2	YKME007	YAKSHITH M KRISHNA	ME	12th	86.67	Y
3	YKME002	SAI PRAJWAL J	ME	12th	76.67	Y
4	YKME003	KISHAN B S	ME	12th	70.00	Y
5	YKME004	HARIHARAN N	ME	12th	63.33	Y
6	YKME008	BHAGYESH S	ME	12th	59.33	Y
7	YKME006	AARON JOEL JONATHAN	ME	12th	58.67	Y
8	YKME005	MANOJ REDDY M L	ME	12th	58.00	Y
9	YKME001	HRISHEEL S KELLAPPA	ME	12th	58.00	Y
10	YKME011	SUPRATIKSHA N	ME	12th	57.67	Y
11	YKME014	HIMANSHU D KOLCHAR	ME	12th	57.00	Y
12	YKME015	TANISH SARKAR	ME	12th	56.00	Y
13	YKME010	ARJUN LIVIK J P	ME	12th	55.33	Y
14	YKME009	SHALINI SINGH	ME	12th	54.33	Y
15	YKME012	SAI TEJAS MANTHA	ME	12th	52.67	Y

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Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YKCV008	BOGATHI HARSHITHA REDDY	CV	12th	93.00	Y
2	YKCV015	PRIYANSHU KARMAKAR	CV	12th	93.00	Y
3	YKCV016	GOLLAPALLI HARSHA VARDHAN REDDY	CV	12th	86.00	Y
4	YKCV010	BHARATH M	CV	12th	80.00	Y
5	YKCV014	SIMRAN SINGH	CV	12th	76.00	Y
6	YKCV012	ANKIT KUMAR	CV	12th	73.67	Y
7	YKCV009	SHAILESH M	CV	12th	72.67	Y
8	YKCV013	L R PRAKRUTHI	CV	12th	71.67	Y
9	YKCV006	SANJAY GANESH M	CV	12th	62.67	Y
10	YKCV002	TANMAY AKASH	CV	12th	61.33	Y
11	YKCV003	MANISH RAMAIAH V S	CV	12th	60.00	Y
12	YKCV004	SHIKTA ROY	CV	12th	58.67	Y
13	YKCV001	ISHAAN RAJ	CV	12th	56.33	Y
14	YKCV007	HARSHAVARDHAN N	CV	12th	56.33	Y
15	YKCV005	SAGAR R	CV	12th	52.33	Y
16	YKCV011	RAKSHITHA M S	CV	12th	51.33	Y
17	YKCV017	ASHRAM PANDEY	CV	12th	51.00	Y

  
Signature with seal of the Principal  
**PRINCIPAL**  
**BMS Inst.of Tech.& Mgmt.**  
**Doddaballapur Main Road**  
**Avalahalli, Yelahanka, B'lore-64**



BMS Institute of Technology and Management

Yelahanka, Bengaluru - 560064.

Merit List of applications received for Management quota - COMED-K Unfilled  
seats for the AY 2024-25

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YKAI021	SAKSHAM KULKARNI	AI	12th	92.33	Y
2	YKAI016	R KUSUM RAJU	AI	12th	92.00	Y
3	YKAI023	VARSHINI K S	AI	12th	91.67	Y
4	YKAI018	RISHIKESH V REDDY	AI	12th	88.33	Y
5	YKAI008	AYAANA AHMED	AI	12th	84.33	Y
6	YKAI006	AARAV VATSH	AI	12th	80.00	Y
7	YKAI017	NAGA MOKSHA K R	AI	12th	80.00	Y
8	YKAI025	SAI PUNIT N	AI	12th	77.67	Y
9	YKAI001	B T NUTAN REDDY	AI	12th	77.00	Y
10	YKAI002	K N HEM SAGAR	AI	12th	77.00	Y
11	YKAI013	ANIKEAT YADAV	AI	12th	75.67	Y
12	YKAI005	ASHWINI KALLESH	AI	12th	75.33	Y
13	YKAI022	SISIR RAJ	AI	12th	73.33	Y
14	YKAI010	BHOOMI GUPTA	AI	12th	71.67	Y
15	YKAI003	ANUBHAV	AI	12th	69.00	Y
16	YKAI020	INAMALA RESHMANTH RAJU	AI	12th	68.00	Y
17	YKAI009	AKANKSHA KUMARI	AI	12th	67.67	Y
18	YKAI012	NIDHI DWIVEDI	AI	12th	65.33	Y
19	YKAI004	AYUSH YADAV	AI	12th	65.00	Y
20	YKAI007	N SHREYAS ADITHYA	AI	12th	63.67	Y
21	YKAI024	VAIBHAV DADE	AI	12th	63.00	Y
22	YKAI019	SONALI N GOWDA	AI	12th	62.33	Y
23	YKAI011	ANKUR PRATIK	AI	12th	62.00	Y
24	YKAI015	DEEPAK KUMAR	AI	12th	54.67	Y
25	YKAI014	ASMI KUMARI	AI	12th	51.00	Y
26	YKAI026	MAYANK PRAKASH	AI	12th	49.67	Y

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**BMS Institute of Technology and Management**


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seats for the AY 2024-25**

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YKCS003	MOURYA MANJUNATH GAONKAR	CSE	12th	95.00	Y
2	YKCS040	SANNIDHI NAVEEN KAMATH	CSE	12th	94.00	Y
3	YKCS020	GIRIDHAR VAISHNAV	CSE	12th	93.33	Y
4	YKCS039	ANAGHA RAJA	CSE	12th	92.00	Y
5	YKCS027	PAVAN S	CSE	12th	89.00	Y
6	YKCS005	NANDAN R GOWDA	CSE	12th	88.67	Y
7	YKCS021	PAILA DIVYESH REDDY	CSE	12th	88.17	Y
8	YKCS028	RISHAV KUMAR SINGH	CSE	12th	87.00	Y
9	YKCS041	DISHA	CSE	12th	86.33	Y
10	YKCS033	M N NAVYASREE	CSE	12th	83.67	Y
11	YKCS015	MANNAVA PRANATHI	CSE	12th	83.00	Y
12	YKCS016	LEKHA S	CSE	12th	82.33	Y
13	YKCS002	DEBANGSHU BANERJEE	CSE	12th	80.00	Y
14	YKCS036	DEEPAK KUMAR S	CSE	12th	79.67	Y
15	YKCS043	SHREEHASRHA	CSE	12th	79.67	Y
16	YKCS044	SARAH CHRISTINA M	CSE	12th	78.33	Y
17	YKCS018	PRATIK RAUNAK	CSE	12th	77.67	Y
18	YKCS004	SOUMYA SHASHIDHAR DODDAMANI	CSE	12th	77.00	Y
19	YKCS006	SOHAN S VARKHEDI	CSE	12th	77.00	Y
20	YKCS022	TANMAY JAYENDRA MAHADIK	CSE	12th	74.33	Y
21	YKCS045	BHAVYA SREE PEDDA	CSE	12th	73.67	Y
22	YKCS001	NISHCHAL N	CSE	12th	73.67	Y
23	YKCS029	VARUN YAMANUR	CSE	12th	73.00	Y
24	YKCS034	RAKSHITHA S REDDY	CSE	12th	69.33	Y
25	YKCS008	Y AKASH NAIDU	CSE	12th	67.33	Y
26	YKCS009	JATIN RAMEJA	CSE	12th	67.33	Y
27	YKCS017	SIDDHARTH RAJ	CSE	12th	66.67	Y
28	YKCS030	VARSHINI K N	CSE	12th	64.00	Y



Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
29	YKCS037	ZECHARIAH FERNANDEZ	CSE	12th	64.00	Y
30	YKCS023	AARAV SINGH	CSE	12th	63.33	Y
31	YKCS012	VAIBHAVA KRISHNAA A R	CSE	12th	62.67	Y
32	YKCS007	MALINI R	CSE	12th	61.00	Y
33	YKCS026	DEBAYAN GHOSH	CSE	12th	61.00	Y
34	YKCS019	AMBUJ JHA	CSE	12th	60.00	Y
35	YKCS038	HARSHAVARTHAN K R	CSE	12th	58.67	Y
36	YKCS014	ARNIK MAJUMDAR	CSE	12th	57.33	Y
37	YKCS035	BHAVESH DALAL	CSE	12th	57.33	Y
38	YKCS011	DHRUV MALHOTRA	CSE	12th	56.33	Y
39	YKCS042	SURYAKANT SINGH	CSE	12th	56.33	Y
40	YKCS031	ASHISH RANJAN	CSE	12th	53.00	Y
41	YKCS013	ARIN THAKUR	CSE	12th	51.67	Y
42	YKCS010	VATSALYA SARAF	CSE	12th	51.00	Y
43	YKCS024	PANKAJ	CSE	12th	51.00	Y
44	YKCS025	AASHISH RAJ	CSE	12th	50.67	Y
45	YKCS032	ARYAN P HIEMATH	CSE	12th	46.33	Y

  
 Signature with seal of the Principal  
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**BMS Institute of Technology and Management**

Yelahanka, Bengaluru - 560064.

Merit List of applications received for Management quota - KEA Unfilled  
seats for the AY 2024-25

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YCCS001	CHAITANYA HOSAMANI	CS	12th	84.67	Y
2	YCCS002	ABHINAV PRASUN	CS	12th	49.67	Y

  
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BMS Institute of Technology and Management

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Merit List of applications received for Management quota - KEA Unfilled  
seats for the AY 2024-25

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YCME001	LIKHITH S	ME	12th	59.67	Y
2	YCME002	ANDREW TOM JACOB	ME	12th	48.33	Y

Signature with seal of the Principal

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BMS Institute of Technology and Management

Yelahanka, Bengaluru - 560064.

Merit List of applications received for Management quota - KEA Unfilled  
seats for the AY 2022-23

Sl. No.	Application No.	Name of the student	Name of the Branch	Merit Criteria	Merit Criteria Marks / Percentage	Selected (Y/N)
1	YCCB001	FAIZAN SUBHAN	CB	12th	55.00	Y

Signature with seal of the Principal

**PRINCIPAL**

**BMS Inst.of Tech.& Mgmt.**

**Doddaballapur Main Road**

**Avalahalli, Yelahanka, B'lore-64**





# ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

("ವಿ ಟಿ ಯು ಅಧಿನಿಯಮ 1994"ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

(State University of Government of Karnataka Established as per the VTU Act, 1994)

Phone : 0831-2498100 / 2405468

Fax : 0831-2405467

Email : registrar@vtu.ac.in

Web : https://vtu.ac.in

Prof. B. E. Rangaswamy, Ph.D.  
REGISTRAR

REF: VTU/BGM/BoS/AC/2024-25 5601

DATE: 29 JAN 2025

### Revised-NOTIFICATION

**Subject:** Tentative Academic Calendar of 1<sup>st</sup> semester of  
B.E./B.Tech./B.Des./B.Plan./B.Arch./BBA/BCA/B.Sc., (Hons), programs  
for academic year 2024-25 regarding...

**Reference:** The approval Hon'ble Vice-Chancellor, dated: 28.01.2025

The updated Academic Calendar of the 1<sup>st</sup> semester of B.E. /B.Tech./ B. Des., /B. Plan., / B. Arch., / BBA/ BCA/B. Sc.,(Hons) , programs, for the academic year 2024-25 are notified as mentioned below;

B.E./B.Tech./ B.Des /B.Plan/ B.Arch/ BBA/ BCA./B.Sc(Hons)		
	Previous dates	Revised Dates
Commencement of the Semester	17.09.2024	-----
Students Induction Programs	17.09.2024 To 27.09.2024	-----
Commencement of Classes	28.09.2024	-----
Last Working day of the Semester	27.01.2025	06.02.2025
Practical / Viva- Examination	28.01.2025 To 06.02.2025	03.03.2025 To 13.03.2025
Theory Examinations	07.02.2025 To 05.03.2025	07.02.2025 To 28.02.2025
Commencement of NEXT Semester	10.03.2025	17.03.2025

**Please Note:**

- Notification regarding the Calendar of Events relating to the conduct of University Examinations will be issued by the Registrar (Evaluation) from time to time.

*R*



- Autonomous Colleges must adhere to the Academic Calendar as well. Any modifications to the academic terms and examination schedule that Autonomous Colleges choose to make can only be made with the University's concurrence.
- If any suggestions/clarification please email-**registrar@vtu.ac.in**

The Principals of Non-Autonomous, Constituent, and Autonomous Engineering Colleges and chairpersons of the University departments are hereby informed to bring the academic calendar to the notice of all concerned.

*R* 27/01/25 *BE*  
**REGISTRAR**  
*7.*

**To,**

1. The Principals of all Non-autonomous/ constituent /Autonomous Engineering Colleges under the ambit of VTU Belagavi.
2. The chairperson, of the Department of Mechanical Engineering /Civil Engineering /Computer Science and Engineering& Communication Electronics Engineering of the University.

**Copy to.**

1. To the Hon'ble Vice-Chancellor through the secretary to VC, VTU Belagavi for information
2. The Registrar (Evaluation), VTU Belagavi for information and needful.
3. The Regional Directors (I/c) of all the regional offices of VTU for circulation.
4. The Director ITI SMU, VTU Belagavi for information and to make arrangements to upload the Academic Calendar on the VTU web portal.
5. The Director of Physical Education, VTU Belagavi for information
6. The Director, Central Placement Cell, VTU Belagavi for information
7. The Special Officer Library, VTU Belagavi for information
8. Office copy



Laboratory Details

Programme Name	Department	Level	Course	Is it Research Lab for PG Course?	Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	ADE	CRO, Function Generators, Logics Analyser	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	No	AI&ML LAB	iNTEL cORE - i7 Computers	No	BSN Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	ANALOG & DIGITAL COMMUNICATION LAB	CRO, Power Supply DPSK & QPSK Kit, Linear IC tester, Line coding kit, OFC Kit	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	ANALOG ELECTRONIC	Cathode ray Oscilloscope signal generator (3 mhz), DC Power Supply (multi Ch) Fixed power supply	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATION ENGINEERING	No	ANALOG ELECTRONICS LAB-TE	Cathode Ray Oscilloscope, Signal Generator(3mhz), Dc Power Supply(Multi Ch) Fixed Power Supply, Digi	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	APPLIED ENGINEERING GEOLOGY LAB	Minerals, Rocks, Dip And Strike Models, Folds models, Faults models,Unconfirmit models, Aimil Deep	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No	BASIC ELECTRICAL LAB	Auto transformer OC.SC.test panels, star/delta connection test panel etc	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	BASIC MATERIAL TESTING LAB	Tile Tesing Machine, Crashing Machines, Flexural tesing Machine,	No	LAB Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	CAD LAB	Intel I7- 8700(8th Gen) CPU 32GHz 16GB ram , 512 SSD, 1 TB hard disk , 2GB Nvidia Graphics card, m	No	BSN Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	CAED LAB	As per norms	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	CAMA LAB	AS PER NORMS	No	ACADEMIC BLOCK	BLOCK I	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	CAMD LAB	AS PER NORMS	No	ACADEMIC BLOCK	BLOCK I	Laboratory



Programme Name	Department	Level	Course	Is it Research Lab for PG Course?	Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
ENGINEERING AND TECHNOLOGY	FIRST YEAR/OTHER	POST GRADUATE		Yes	CAMR LAB	FIIR, Uv Visible, Roman Spectrometer. Dielectric, contt, Furrances	No	BSN Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATION ENGINEERING	No	CCN LAB	12 switch (24 port) cabinet mount & lan conection	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	CCP LAB	Intel (R) core (TM) i7-CPU, 3.60 GH3 - Computers	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	CIM & AUTOMATION	As per norms	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	CNC MACHINE SHOP	As per norms	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	CONCRETE LAB	"Compression testing machine (3000kN) Vicat Apparatus, Auto Clave Apparatus,Vibration Machine, Vibra	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No	CONTROL SYSTEM LAB & CIRCUIT SIMULATION	OSCILLOSCOPE SIGNAL GENERATORS TESTING KITS	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No	D C MACHINE LAB/TIM LAB ELECTRICAL MACHINES LAB 1&2	DC shut generator panel, DC shut motor with panel, Swim burne's test kit	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	No	DATA SCIENCE LAB	Intel Core-i7 Computers	No	BSN Block	block II	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	DBMS / ADA LAB / NETWORK LAB / MICROPROCESSOR LAB	Intel (R) core Quad-CPU-2.83 - Computers	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	INFORMATION TECHNOLOGY	UNDER GRADUATE	INFORMATION SCIENCE AND ENGINEERING	No	DBMS LAB, MACHINE LEARNING LAB, SOFTWARE TESTING LAB, WEB LAB, PROJECT WORK LAB TIMBERNERS LEE LAB	Computers, Antivirus s/w, UPS, Patch Panel, Switches	No	BS Narayan Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	INFORMATION TECHNOLOGY	UNDER GRADUATE	INFORMATION SCIENCE AND ENGINEERING	No	DENNIS LITCHI LAB 211 (2ND FLR)	Computers (35), patch Pond DC Lab, DS Lab.	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	DESIGN LAB	As per norms	No	Lab Block	Block III	Laboratory



Programme Name	Department	Level	Course	Is it Research Lab for PG Course?		Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No		DIGITAL COMMUNICATION LAB	Communication Kit (PAM, PWM, PPM), Fiber optic communication trainer kit, Microwave test bench, Micr	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATION ENGINEERING	No		DIGITAL ELECTRONICS LAB-TE	Digital IC Trainer Kits IC tester	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No		DIGITAL SIGNAL PROCESSING LAB	Projector, smart board, digital display system, DSP starter kit MAT lab software, simulink	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No		DIGITAL SYSTEM DESIGN LAB	Digital IC trainer kits, IC tester	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No		EC LAB	As per norms	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No		ELECTRONIC DEVICES & INSTRUMENTATION LAB	CRO, Dual power supply, Single power supply, function generator, MM, Multi output power supply, DSO	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	FIRST YEAR/OTHER	UNDER GRADUATE		No		ENGINEERING CHEMISTRY LAB	Conductivity Meter, Ph Meter, Potentio Meter, fume Cupboard, Hot Air Oven, Colori Meter,	No	BS Narayan Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	FIRST YEAR/OTHER	UNDER GRADUATE		No		ENGINEERING PHYSICS LAB I	Spectrometer, Travelling Microscope B H curve setup, zener, No LCR, Transistor kit, Ultrasonic interfer		BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	FIRST YEAR/OTHER	UNDER GRADUATE		No		ENGINEERING PHYSICS LAB II	Laser Diffraction Optical Fiber Expt Kit MI Expt Kit Spring Contant Kit	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No		ENVIRONMENTAL ENGG LAB	Hot air oven,Muffle furnace, Digital pH meter with electrode, Electronic Balance, Digital photoelect	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	Yes		F&F LAB	As per norms	No	Workshop	Block V	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No		FM LAB	As per norms	No	Lab Block	Block III	Laboratory
ENGINEERING AND	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No		GEOTECHNICAL ENGG LAB	Hydrometer with glass measuring cylinder,	No	Lab Block	Block III	Laboratory



Programme Name	Department	Level	Course	Is it Research Lab for PG Course?	Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
TECHNOLOGY						Heavy Compaction Test Apparatus, Hydraulic Ejector Motrari				
ENGINEERING AND TECHNOLOGY	INFORMATION TECHNOLOGY	UNDER GRADUATE	INFORMATION SCIENCE AND ENGINEERING	No	GUIDO VAN ROSSUM LAB	Computers, Patch pavel swithes UPS Network switches Mobile application lab, OOP using JAVA lab, Proj	No	B S Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No	HDL LAB - TE	Computers, server, UPS 20 KVA with, Lead Acid 12V/ 80aH batteries, Projector, FPGA trainer kit & in	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	HDL LAB VIVADO SOFTWARE	Nexys boards HDL kits, Interfacing kits zyna boards	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	HHM LAB	Pelton turbine , Kaplan turbine, Hydrology bench and rainfall , Masonry hydraulic flume (10m):	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	HIGHWAY MATERIALS LAB	Crushing Apparatus, Impact Test Apparatus,Cylindrial mould with tamping rod,Flash & Fire Point ,Ring	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	HMT LAB	As per norms	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	INDUSTRY ATTACHED ENGINE LAB	As per norms	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	No	IOT LAB	CRO, Function Generators, Logic Analyzer, Jetson Cards Monitors	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	JOHN MCARTHY LAB	40 PC	No	BS Narayan Block	Block II	Laboratory
COMPUTER APPLICATIONS	MASTER OF COMPUTER APPLICATIONS	POST GRADUATE	MCA	No	KALPANA CHAWLA LAB	HP Intel Core i5-20, HP Intel Core i7-20, Total of 40 High end Computers with Structured LAN & Furni	No	LAB Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No	LD LAB	Trainer kits, IC's IC lesterset, patch cards, etc	No	Academic Block	Block I	Laboratory



Programme Name		Department	Level	Course	Is it Research Lab for PG Course?	Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No		LIC & COMMUNICATION LAB	CRO, Powe supply multi output power supply function generator decade resistance box (DRB) Decade cap	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No		LIC & COMMUNICATION LAB AC + LIC LAB + ANALOG CIRCUITS LAB	CRO, Power supply, Multi output power supply, function generator, Decade resistance box (DRB), Decad	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	INFORMATION TECHNOLOGY	UNDER GRADUATE	INFORMATION SCIENCE AND ENGINEERING	No		LINUS TORBOLDS LAB	Computers, Patch panel, Switches, UPS, Networks switches, CPL, DS Lab, Network lab	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	Yes		M&M LAB	As per norms	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	POST GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No		M.TECH - IOT LAB	IOT Kits + intel i7 systems + Microprocessor equipments	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	Yes		M/C SHOP	As per norms	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No		MICRO-CONTROLLER LAB	Nvoton Arm Controller kits with Accessories	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No		MICROCONTROLLER LAB	Computers, server microcontroller kits interfacing kits (8 types) & MSP430 microcontrollers	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No		MICROCONTROLLERS LAB DSP, C-PROG, C++	Microcontroller Kits Interfacing Modules, Computers	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No		MICROPROCESSOR LAB 1	Microprocessor 8086 kits, PCI Add on cords, No 7 type interfacing kits	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No		MICROWAVE & ANTENNA LAB	CRO, MW & A equipments, MW&A equipments-ledger PG 12-19, 10kva ups microwave test bench micro	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	Yes		MT LAB	As per norms	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS	No		PE & OP AMP LIC LAB AEC LAB	Static characteristics 06 IGBT MOSFET,	No	Academic Block	Block I	Laboratory



Programme Name	Department	Level	Course	Is it Research Lab for PG Course?	Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
TECHNOLOGY	ENGINEERING		ENGINEERING			SCR modules, AC voltage controller, Investor chopper, Sig etc				
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	POWER ELECTRONICS LAB	Experminetal Modules, Trigger circuits, DC motor, AC motor, Universal motor PC-7	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No	PROJECT/R&D LAB	Computers, Texas Instruments Innovation Centre, Software Defined Radio, IoT Kits, Network Switch & N	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No	PSS / CAED LAB	20 kva ups with batteries, Computer Systems-24 Nos.	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	R&D LAB	Wi-comm. T, Ansys Software, My DAC, My RIO PC-10, Spectrum Analyzer, VNA, all in one bio sensing R&D	No	Academic Block	Block I	Laboratory
MANAGEMENT	MASTERS IN BUSINESS ADMINISTRATION	POST GRADUATE	MBA	No	RATAN TATA LAB	39 computer systems and one 76 inch touch enabled computer display.	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No	RELAY & HV LAB	70KVAC/100 KVDC test unit, 150 kv, 225j, 5 stage impulse generator HV Driver Negative sequence UU/OU	No	Academic Block	Block I	Laboratory
COMPUTER APPLICATIONS	MASTER OF COMPUTER APPLICATIONS	POST GRADUATE	MCA	No	SAVITRIBAI PHULE LAB	Integrated Computer Lab with structured LAN and Furniture.	No	LAB Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	SHANKUNTALA DEVI CMPUTER LAB 1 & 2 DAE LAB, DDCO LAB	Intel (R) - Core 7 + 8700 processor - Computer	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	SP LAB	DSP kits, Computer Matlab Software PC-21, Lab view	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	SURVEY LAB	Electronic Total station, vernier transit theodolite, dumpy level, auto level, tilting level, precis	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	SYSTEM PROGRAMMING LAB	Intel Core i7 - 9700 CPU, 30H3, 16GB RAM systems	No	BS Narayan Block	Block II	Laboratory



Programme Name	Department	Level	Course	Is it Research Lab for PG Course?	Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	VLSI LAB	VLSI software, Computers PC-20	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	WEB/SYSTEMS PROGRAMMING LABORATORY	Intel core i7 - 4790 CPU, 3.60 GH3 - Systems	No	BS Narayan Block	Block II	Laboratory





# KAREKAR & ASSOCIATES

ARCHITECTS, INTERIOR DESIGNERS & STRUCTURAL ENGINEERING CONSULTANTS

# 282, Karekars, Ground Floor, 14th Cross, HIG Dollars Colony, RMV 2nd Stage, Bangalore-560 094.

Phone : +91-80-2341 0909, E-mail : meghal\_sk@karekars.in Website : www.karekars.in

25<sup>th</sup> January 2024

## CERTIFICATE

This is to certify that as per building code regulation, a barrier free environment created at BMSIT&M campus by providing RCC ramps, toilet/rest room, dining facilities besides road & Sport facilities for physically challenged & elderly people.

For KAREKAR AND ASSOCIATES

*Manisha Karekar*

Ar. MANISHA KAREKAR  
CA No.CA/86/10063









## ACADEMIC BLOCK

### BMSIT & M

- LABORATORY BLOCK →
- CAREER DEVELOPMENT CENTRE →
- BICEF →
- FOOD COURT →
- BADMINTON COURT →
- MBA MCA →
- S.S. NARAYAN AUDITORIUM →
- GUESTS HOSTELS →
- LIBRARY BOOK CENTRE →











**Office of the Director General of Police**  
Commandant General, Home Guards &  
Director of Civil Defence and  
Director General Karnataka State Fire &  
Emergency Services

No. 1, Annaswamy Mudaliar Road  
Bangalore - 560 042



Phone : 25570733  
: 22971501  
Fax : 22971512

The Principal  
BMS Institute of Technology & Management,  
Avalahalli, Yalahanka  
Bangalore - 560 064

Dear Sir,

Sub: Fire Safety Compliance Certificate.  
Ref: Your Letter Dated: 21/07/2017

A periodical inspection of fire safety compliance in respect of all buildings of your institutions constructed in survey nos. 53, 53/1, 2, 54, 55, 56/3, 57, 115, 116/2, 3 and 118 of Avalahalli village has been conducted by the department of fire and emergency services. These include the Academic block, the Library block, the Administrative block, the Lab blocks and the Hostel buildings.

During the inspection, it is found that the institution has taken all steps to install and maintain the fire safety equipment. Further it is certified that the institute has complied with all safety norms. Continuing that the institute should organize training at least 40% of their staff in fire protection and control measures from RA R A Mundkan Fire and Emergency Services Academy Bangalore within 6 months.

Yours faithfully

*(Signature)*

*27/7/17*  
Director General of Police  
And Director General,  
Karnataka Fire & Emergency Services





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# 282, Karekars, Ground Floor, 14th Cross, HIG Dollars Colony, RMV 2nd Stage, Bangalore-560 094.

Phone : +91-80-2341 0909, E-mail : meghal\_sk@karekars.in Website : www.karekars.in

Date: 25/01/2024

## FIRE SAFETY CERTIFICATE

The BMSIT Hostel for Boys Block-C, total height of the building being less than 21mtrs, is compliant for Fire Safety as per NBC 2016, Part 4, Table 7, Residential Buildings Group A Division C subdivision(A-3), (5mtrs and above but not exceeding 35mtrs in height).

Necessary Fire extinguishers, First Aid Hose Reel, Down comer, Automatic Sprinkler system in Basement, Manual operated Electronic Fire Alarm system, Terrace tank and Pump of 15HP to supply pressurized water for all floors is provided as per the NBC.

The building is safe against Fire and necessary precautions have been installed as per the National Building Code 2016.

For KAREKAR & ASSOCIATES

*Manisha Karekar*

Ar. MANISHA KAREKAR  
CA No. CA/86/10063





**Office of the Director General  
of Police**

Commandant General, Home Guards &  
Director of Civil Defence and Director  
General Karnataka State Fire &  
Emergency Services  
No. 1, Annaswamy Mudaliar Road  
Bangalore - 560 042



Phone : 25570733

: 22971501

Fax : 22971512

**KARNATAKA STATE FIRE & EMERGENCY SERVICES  
ACKNOWLEDGEMENT RECEIPT****REQUEST FOR NO OBJECTION CERTIFICATE**Receipt Date **31/01/2024 15:29**

Application Number : KSFES-9733/23-24  
Application Name : Request for No Objection Certificate  
Applicant Name : BMS Educational Trust  
Building Usage Purpose : Mixed Occupany

**Project Details**

Project Name : Educational Building with Hostel Building  
Builder Name : BMS Educational Trust  
Architect Name : SWAROOP DEVAIAH KL

Site Address : BMS Institute of Technolonlogy & Management,  
Situatd in Sy.Nos.53, 54, 55, 56/2, 56/3, 57/1, 115,  
116/2B, 116/3, 116/3A, 116/4 & 118/2 of Avalahalli  
Village, Yelahanka Hobli, Doddaballapur Main Road,  
Bangalore., Karnataka, BANGALORE, Bangalore North,  
560064

Pincode : 560064

\* Please note that you will recieve a docket number against your application once  
it is accepted and taken for further processing. Docket Number can be used for all  
future correspondences

ಪೊಲೀಸ್ ಮಹಾ  
ನಿರ್ದೇಶಕರು



ಮಹಾ ಸಮಾದೇಷ್ವರು, ಗೃಹ  
ರಕ್ಷಕರ, ನಿರ್ದೇಶಕರು, ಪೌರರಕ್ಷಣೆ,  
ಮಹಾ ನಿರ್ದೇಶಕರು ಅಗ್ನಿಶಾಮಕ  
ಮತ್ತು ತುರ್ತು ಸೇವೆಗಳ ಹಾಗೂ  
ಮಹಾ ನಿರ್ದೇಶಕರು,  
ಎಸ್.ಡಿ.ಆರ್.ಎಫ್ ರವರ ಕಛೇರಿ,  
ನಂ.1 ಅಣ್ಣಾಸ್ವಾಮಿ ಮೊದಲಿಯರ್  
ರಸ್ತೆ, ಬೆಂಗಳೂರು 560 042



ದೂರವಾಣಿ :22570733  
: 22971501  
ಫ್ಯಾಕ್ : 22971512

## ಕರ್ನಾಟಕ ರಾಜ್ಯ ಅಗ್ನಿಶಾಮಕ ಮತ್ತು ತುರ್ತು ಸೇವೆಗಳು ಸ್ವೀಕೃತಿ ರಸೀದಿ

### ವಿನಂತಿಯನ್ನು ಎನ್‌ಒಸಿ

ಸ್ವೀಕೃತಿ ದಿನಾಂಕ 31/01/2024 15:29

ಅರ್ಜಿ ಸಂಖ್ಯೆ : KSFES-9733/23-24  
ಅಪ್ಪಿಕೇಶನ್ ಹೆಸರು : ವಿನಂತಿಯನ್ನು ಎನ್‌ಒಸಿ  
ಅರ್ಜಿದಾರರ ಹೆಸರು : BMS Educational Trust  
ಕಟ್ಟಡ ಬಳಕೆ ಉದ್ದೇಶ : ಮಿಶ್ರ ವಾಸ್ತವ

### ಪ್ರಾಜೆಕ್ಟ್ ಡೀಟೇಲ್ಸ್

ಪ್ರಾಜೆಕ್ಟ್ ಹೆಸರು : Educational Building with Hostel Building  
ಬಿಲ್ಡರ್ ಹೆಸರು : BMS Educational Trust  
ವಾಸ್ತುಶಿಲ್ಪಿ ಹೆಸರು : SWAROOP DEVAIAH KL

BMS Institute of Technolonlogy & Management, Situated  
in Sy.Nos.53, 54, 55, 56/2, 56/3, 57/1, 115, 116/2B, 116/3,  
ಸೈಟ್ ವಿಳಾಸ : 116/3A, 116/4 & 118/2 of Avalahalli Village, Yelahanka  
Hobli, Doddaballapur Main Road, Bangalore., Karnataka,  
BANGALORE, Bangalore North, 560064

ಪಿನ್ ಕೋಡ್ : 560064

\* ಮತ್ತಷ್ಟು ಪ್ರಕ್ರಿಯೆಗೆ ಅಂಗೀಕರಿಸಲ್ಪಟ್ಟಾಗ ಮತ್ತು ತೆಗೆದುಕೊಂಡ ನಂತರ ನೀವು ನಿಮ್ಮ ಅಪ್ಪಿಕೇಶನ್  
ವಿರುದ್ಧವಾಗಿ ಡಾಕುಮೆಂಟ್ ಸಂಖ್ಯೆಯನ್ನು ಸ್ವೀಕರಿಸುತ್ತೀರಿ ಎಂಬುದನ್ನು ದಯವಿಟ್ಟು ಗಮನಿಸಿ. ಎಲ್ಲಾ ಭವಿಷ್ಯದ  
ಸಂಬಂಧಗಳಿಗೆ ಡಾಕುಮೆಂಟ್ ಸಂಖ್ಯೆಯನ್ನು ಬಳಸಬಹುದು

\*\* ಇದು ವ್ಯವಸ್ಥೆಯು ಡಾಕುಮೆಂಟ್ ಅನ್ನು ರಚಿಸಿದೆ ಇದು ವ್ಯವಸ್ಥೆಯು ಡಾಕುಮೆಂಟ್ ಅನ್ನು ರಚಿಸಿದೆ



**Office of the Director  
General of Police**

Commandant General, Home  
Guards & Director of Civil Defence  
and Director General Karnataka  
State Fire & Emergency Services  
No. 1, Annaswamy Mudaliar Road  
Bangalore - 560 042



Phone : 25570733  
: 22971501  
Fax : 22971512

**KARNATAKA STATE FIRE & EMERGENCY SERVICES**
**NO OBJECTION CERTIFICATE**

No. KSFES/GBC(1)/045

Docket No. KSFES/NOC/035/2024

Dated : 10/07/2024 16:50

To,

Commissioner,  
Bengaluru Development Authority,  
Kumara Park West,  
T.Chowdaiah Road,  
Bengaluru-560020.

Sir

Sub : Issue of No Objection Certificate for the construction of Mixed Occupany building at BMS Institute of Technolonlogy & Management, Situated in Sy.Nos.53, 54, 55, 56/2, 56/3, 57/1, 115, 116/2B, 116/3, 116/3A, 116/4 & 118/2 of Avalahalli Village, Yelahanka Hobli, Doddaballapur Main Road, Bangalore., Bangalore North, BANGALORE - 560064

Ref:

1. Letter dated 31/01/2024 of the Authorized Signatory, BMS Educational Trust Post Box No.1908, Bull Temple Road, Bengaluru., Bangalore South, BANGALORE - 560019

With reference to the letter of the BMS Educational Trust Post Box No.1908, Bull Temple Road, Bengaluru., Bangalore South, BANGALORE - 560019 cited above, the of this department has inspected the site of proposed Mixed Occupany buildings at BMS Institute of Technolonlogy & Management, Situated in Sy.Nos.53, 54, 55, 56/2, 56/3, 57/1, 115, 116/2B, 116/3, 116/3A, 116/4 & 118/2 of Avalahalli Village, Yelahanka Hobli, Doddaballapur Main Road, Bangalore., Bangalore North, BANGALORE - 560064 on 11/06/2024 02:05 with reference to the drawings furnished by the builder and the details are as follows:

Part-A: General Building requirements.		
1	Address of the applicant	The Authorized Signatory, BMS Education Trust, Post Box no. 1908, Bull Temple Road, Bengaluru – 560 019.
2	Address of the Premises.	Sy.nos. 118/2, 116/2B, 116/3, 116/3A, 116/4, 56/2, 53, 56/3, 115, 54, 55, 57/1, BMS Institute for Technology, Avalahalli, Yelahanka, Bengaluru – 560 064.
3	Number of Buildings.	2 Buildings i.e. Building-1 with 4 Blocks i.e. Girls Hostel, Admin Block, Civil Lab Block & Lab Block-2 - all the blocks are interconnected by connecting corridors.  Building-2 with 2 Blocks i.e. BMSSA Block-1 & BMSSA Block-2 – both the blocks are interconnected by connecting corridors.
4	Number of floors.	<b>Building-1</b> <b>Girls Hostel:</b> Proposed 2 common basements, ground & 10 upper floors. <b>Admin Block:</b> Proposed 2 common basements, ground & 6 upper floors. <b>Civil Lab Block:</b> Existing: Ground & 5 upper floors. Proposed: 6 <sup>th</sup> & 7 <sup>th</sup> floor. <b>Lab Block-2:</b> Proposed ground & 3 upper floors.  <b>Building-2</b> <b>BMSSA Block-1:</b> Existing: Ground & 4 upper floors.  <b>BMSSA Block-2:</b>



		Existing: Basement, ground & 1 <sup>st</sup> floor. Proposed: 2 <sup>nd</sup> floor to 7 <sup>th</sup> floor.
5	<p>Type of Occupancy <b>Part 4, Fire and Life Safety of Part-IV of NBC of 2016 clause 2.46</b></p> <p>Occupancy or Use Group:— The principal occupancy for which a building or a part of a building is used or intended to be used; for the purpose of classification of a building according to the occupancy, an occupancy shall be deemed to include subsidiary occupancies which are contingent upon it.</p> <p><b>Part 4, Fire and Life Safety of Part-IV of NBC of 2016 clause 3.1.2 classification of Educational Buildings.</b></p> <p><b>3.1.2 Group B Educational Building</b></p> <p>These shall include any building used for school, college, other training institutions involving assembly for instruction, education or recreation for not less than 20 students Buildings and structures under Group B shall be further subdivided as follows:</p> <p><b>Sub division B-1:</b> Schools upto senior secondary level.</p> <p><b>Sub division B-2:</b> All other / training institutions.</p> <p>a. Sub division B-1 Schools up to senior secondary level – This subdivision shall include any building or a group of buildings under single management which is used for students not less than 20 in number.</p> <p>b. Subdivision B-2 All others / training institutions – This subdivision shall include any building or a group of buildings under single management which is used for students not less than 100 in number.</p> <p>In the case of temporary buildings/structure which are utilized for educational purposes, the provisions of 3.2.5.3 shall apply.</p> <p>If residential accommodation is provided in the schools / institutions that portion of occupancy shall be classified as a building in Subdivision B1.</p> <p><b>Part 4, Fire and Life Safety of Part-IV of NBC of 2016 clause 3.1.2 classification of residential buildings.</b></p> <p><b>3.1.2 Group A Residential Buildings</b></p> <p>These shall include any building in which sleeping accommodation is provided for normal residential purposes with or without cooking or dining or both facilities, except any building classified under Group C.</p> <p><b>Subdivision A-3 Dormitories</b> — These shall include any building in which group sleeping accommodation is provided, with or without dining facilities for persons who are not members of the same family, in one room or a series of closely associated rooms under joint occupancy and single management, for example, school and college dormitories, students and other hostels and military barracks.</p>	<p><b>Group B Educational Building (Sub division B-2)</b></p> <p><b>Group A Residential Buildings (Subdivision A-3 Dormitories building)</b></p>
		<p><b>Building-1</b></p> <p><b>Girls Hostel Block &amp; Admin Block</b></p> <p>Common basement-2 : For parking 77 cars &amp; two wheelers and 1 Electrical room.</p> <p>Common basement-1 : For parking 67 cars &amp; two wheelers and 1 Electrical room.</p> <p><b>Girls Hostel Block</b></p> <p>Ground floor : 1 Entry lobby, 1 Lounge/ Waiting area, 20 Rooms, 1 Warden room, 1 Electrical room &amp; 1 Fire command centre.</p> <p>1<sup>st</sup> floor : 21 Rooms, 1 Lounge, 1 Kitchen/Dining room &amp; 1 Electrical room.</p> <p>2<sup>nd</sup> floor : 21 Rooms, 1 Lounge, 1 Kitchen/Dining/TV room &amp; 1 Electrical room.</p> <p>3<sup>rd</sup> floor : 21 Rooms, 1 Lounge, 1 Kitchen/Dining/TV room &amp; 1 Electrical room.</p> <p>4<sup>th</sup> floor : 21 Rooms, 1 Lounge, 1 Kitchen/Dining/TV room &amp; 1 Electrical room.</p>



6 Floor wise details of the occupancy

5 <sup>th</sup> floor	21 Rooms, 1 Lounge, 1 Kitchen/Dining/TV room & 1 Electrical room.
6 <sup>th</sup> floor	21 Rooms, 1 Lounge, 1 Gym/TV room & 1 Electrical room.
7 <sup>th</sup> floor to 10 <sup>th</sup> floor	21 Rooms, 1 Lounge, 1 Gym/Indoor games & 1 Electrical room on each floor
Terrace floor	Staircase head rooms, Lift machine rooms & Overhead tanks.
<b>Admin Block</b>	
Ground floor	1 Entry lobby, 1 Officer area, 1 Board room, 3 Office rooms, 1 Trust office, 1 Electrical/ Server room, 1 Electrical room & 1 Fire command centre.
1 <sup>st</sup> floor	3 Class rooms, 3 Office rooms & 2 Electrical rooms.
2 <sup>nd</sup> floor	3 Class rooms, 2 Lobby area, 2 Laboratory, 2 Office room & 2 Electrical rooms.
3 <sup>rd</sup> floor	3 Class rooms, 2 Lobby area, 2 Laboratory, 2 Office room & 2 Electrical rooms.
4 <sup>th</sup> floor	3 Class rooms, 2 Lobby area, 1 Laboratory, 1 Lab Instructor room, 2 Office room, 2 Electrical rooms & 1 Refuge area.
5 <sup>th</sup> floor	1 Auditorium, 1 Refreshment, 2 Refuge areas & 1 Electrical room.
6 <sup>th</sup> floor	Upper portion of Auditorium, 1 Refreshment, 1 Spill out area & 1 Electrical room.
Terrace floor	Staircase head rooms, Lift machine rooms & Overhead tanks.
<b>Civil Lab Block</b>	
<b>Existing floors</b>	
Ground floor	2 Entrance lobby, 1 Structure lab, 1 Survey store, 1 Highway lab, 1 Material Testing lab, 1 Geo technical lab, 1 Office, 1 Fluid mechanics, 2 Concrete lab, 1 Electrical room & 1 Fire command centre.
1 <sup>st</sup> floor	1 CAD lab, 1 Surveying lab, 1 GIS lab, 1 Geology lab, 1 Building services lab, 1 Environmental lab, 1 Drawing hall & 1 Electrical room.
2 <sup>nd</sup> , 3 <sup>rd</sup> & 4 <sup>th</sup> floor	1 Structural lab, 1 CAD lab, 1 Surveying lab, 1 GIS lab, 1 Geology lab, 1 Building services lab, 1 Environmental lab, 1 Drawing hall & 1 Electrical room on each floor.
5 <sup>th</sup> floor	6 Class rooms, 5 Rooms, 1 Seminar hall, 1 Staff room, 2 Student spill over area, 6 Staff cabins, 1 Visitors hall, 1 HOD office, 1 Meeting hall, 1 Pantry & 2 Electrical rooms.
<b>Proposed floors</b>	
6 <sup>th</sup> floor & 7 <sup>th</sup> floor	6 Class rooms, 5 Rooms, 1 Seminar hall, 1 Staff room, 2 Student spill over area, 6 Staff cabins, 1 Visitors hall, 1 HOD office, 1 Meeting hall, 1 Pantry & 2 Electrical rooms on each floor.
Terrace floor	Staircase head rooms, Lift machine rooms & Overhead tanks.
<b>Lab Block-2</b>	
Ground floor	1 Entry lobby, 2 Labs, 1 Staff room



		<p style="text-align: center;">4</p> <p>Ground floor : &amp; 1 Fire command centre.</p> <p>1<sup>st</sup> floor : 1 Entry lobby, 2 Sports rooms &amp; 1 Staff room.</p> <p>2<sup>nd</sup> floor : 1 Entry lobby, 4 Class rooms &amp; 1 Staff room.</p> <p>3<sup>rd</sup> floor : 1 Entry lobby, 4 Class rooms &amp; 1 Staff room.</p> <p>Terrace floor : Staircase head rooms, Lift machine rooms &amp; Overhead tanks.</p> <p><b><u>Building-2</u></b></p> <p><b><u>BMSSA Block-1</u></b></p> <p><b>Existing floors</b></p> <p>Ground floor : 1 Bank, 1 Accounts office, 1 Principal room, 1 Board room, 1 Chairman room, 1 Clinic &amp; 1 Fire command centre.</p> <p>1<sup>st</sup> floor : 2 Class rooms, 1 Discussion room, 1 Library &amp; 1 Staff room.</p> <p>2<sup>nd</sup> floor : 1 Bank, 1 Accounts office, 1 Principal room, 1 Board room, 1 Chairman room, 1 Clinic &amp; 1 Class room.</p> <p>3<sup>rd</sup> floor : 1 Class room, 2 Staff rooms, 1 Discussion room, 1 Visitors lounge, 1 Board room, 1 Chairman room &amp; 1 Pantry.</p> <p>4<sup>th</sup> floor : 1 Class room, 2 Staff rooms, 1 Discussion room, 1 Visitors lounge, 1 Board room, 1 Chairman room &amp; 1 Pantry.</p> <p>Terrace floor : Staircase head rooms, Lift machine rooms &amp; Overhead tanks.</p> <p><b><u>BMSSA Block-2</u></b></p> <p><b>Existing floors</b></p> <p>Basement : For parking 32 cars, 1 Communication room, 1 UPS room &amp; 1 Electrical room.</p> <p>Ground floor : 1 Entrance lobby, 1 Workshop, 1 Class room, 3 Studio rooms, 1 Material library, 1 Seminar hall &amp; 1 Fire command centre.</p> <p>1<sup>st</sup> floor : 2 Workshop, 2 Exhibition rooms, 1 Open discussion exhibition area, 1 Student room &amp; 1 Art studio.</p> <p><b>Proposed floors</b></p> <p>2<sup>nd</sup> &amp; 4<sup>th</sup> floor : 6 Class rooms on each floor.</p> <p>3<sup>rd</sup> floor : 2 Workshop, 2 Exhibition rooms, 1 Open discussion exhibition area, 1 Student room &amp; 1 Art studio.</p> <p>5<sup>th</sup> floor to 7<sup>th</sup> floor : 6 Class rooms &amp; 1 Open discussion exhibition area on each floor.</p> <p>Terrace floor : Staircase head rooms, Lift machine rooms &amp; Overhead tanks.</p>
7	<p>Height of the building.</p> <p><b>As per Part 3 Development Control Rules and General Building Requirements clause 2.10 of NBC 2016</b></p> <p><b>Building, Height of</b> – 2.10 Building, Height of — The vertical distance measured in the case of flat roofs, from the average level of the ground around and contiguous to the building or as decided by the Authority to the terrace of last liveable floor of the building adjacent to the external walls; and in the case of pitched roofs, up to the point where the external surface of the outer wall intersects the finished surface of the sloping roof; and in the case of gables facing the road, the mid-point between the eaves level and the ridge. Architectural features serving no other function except that of decoration shall be excluded for the purpose of measuring heights.</p>	<p>Building-1 with 4 Blocks i.e. Girls Hostel, Admin Block, Civil Lab Block &amp; Lab Block-2 - all the blocks are interconnected by connecting corridor is maximum 34.05 Mtrs.</p> <p><b><u>Building-1</u></b></p> <p>Girls Hostel: 34.05 Mtrs.</p> <p>Admin Block: 29.85 Mtrs.</p> <p>Civil Lab Block: 29.85 Mtrs.</p> <p>Lab Block: 14.85 Mtrs.</p> <p>Building-2 with 2 Blocks i.e. BMSSA Block-1 &amp; BMSSA Block-2 – both the blocks are interconnected by connecting corridors is maximum 29.95 Mtrs.</p> <p><b><u>Building-2</u></b></p> <p>BMSSA Block-1: 18.45 Mtrs.</p> <p>BMSSA Block-2: 29.95 Mtrs.</p>



8	<p>Site Area.  <b>As per Part 3 Development Control Rules and General Building Requirements clause 2.75 of NBC</b>  <b>Site (Plot)</b> — A parcel (piece) of land enclosed by definite boundaries.</p>	85,549.89 Sq.Mtrs.
9	Built up area of each floor	<p><b><u>Building-1</u></b>  <b>Girls Hostel Block &amp; Admin Block</b></p> <p>Common basement-2 : 4,241.42 Sq.Mtrs.</p> <p>Common basement-1 : 4,241.42 Sq.Mtrs.</p> <p><b>Girls Hostel Block</b></p> <p>Ground floor : 1,393.08 Sq.Mtrs.  1<sup>st</sup> floor : 1,428.26 Sq.Mtrs.  2<sup>nd</sup> floor : 1,512.70 Sq.Mtrs.  3<sup>rd</sup> floor : 1,512.70 Sq.Mtrs.  4<sup>th</sup> floor : 1,512.70 Sq.Mtrs.  5<sup>th</sup> floor : 1,442.53 Sq.Mtrs.  6<sup>th</sup> floor : 1,442.53 Sq.Mtrs.  7<sup>th</sup> floor : 1,442.53 Sq.Mtrs.  8<sup>th</sup> floor : 1,442.53 Sq.Mtrs.  9<sup>th</sup> floor : 1,442.53 Sq.Mtrs.  10<sup>th</sup> floor : 1,442.53 Sq.Mtrs.  Terrace floor : 56.88 Sq.Mtrs.</p> <p><b><u>Admin Block</u></b></p> <p>Ground floor : 1,575.27 Sq.Mtrs.  1<sup>st</sup> floor : 1,594.18 Sq.Mtrs.  2<sup>nd</sup> floor : 1,866.61 Sq.Mtrs.  3<sup>rd</sup> floor : 1,806.10 Sq.Mtrs.  4<sup>th</sup> floor : 1,806.10 Sq.Mtrs.  5<sup>th</sup> floor : 2,353.02 Sq.Mtrs.  6<sup>th</sup> floor : 544.74 Sq.Mtrs.  Terrace floor : 86.75 Sq.Mtrs.</p> <p><b><u>Civil Lab Block</u></b>  <b>Existing floors</b></p> <p>Ground floor : 2,849.00 Sq.Mtrs.  1<sup>st</sup> floor : 2,471.00 Sq.Mtrs.  2<sup>nd</sup> floor : 2,849.00 Sq.Mtrs.  3<sup>rd</sup> floor : 2,849.00 Sq.Mtrs.  4<sup>th</sup> floor : 2,849.00 Sq.Mtrs.  5<sup>th</sup> floor : 2,849.00 Sq.Mtrs.</p> <p><b>Proposed floors</b></p> <p>6<sup>th</sup> floor : 2,849.00 Sq.Mtrs.  7<sup>th</sup> floor : 2,849.00 Sq.Mtrs.  Terrace floor : 160.00 Sq.Mtrs.</p> <p><b><u>Lab Block-2</u></b></p> <p>Ground floor : 548.00 Sq.Mtrs.  1<sup>st</sup> floor : 548.00 Sq.Mtrs.  2<sup>nd</sup> floor : 553.00 Sq.Mtrs.  3<sup>rd</sup> floor : 553.00 Sq.Mtrs.  Terrace floor : 40.30 Sq.Mtrs.</p> <p><b><u>Building-2</u></b>  <b>BMSSA Block-1</b>  <b>Existing floors</b></p> <p>Ground floor : 909.10 Sq.Mtrs.  1<sup>st</sup> floor : 826.52 Sq.Mtrs.  2<sup>nd</sup> floor : 814.86 Sq.Mtrs.</p>



		3 <sup>rd</sup> floor : 814.86 Sq.Mtrs. 4 <sup>th</sup> floor : 814.86 Sq.Mtrs. Terrace floor : 70.00 Sq.Mtrs. <b>BMSSA Block-2</b> <b>Existing floors</b> Basement : 1,419.00 Sq.Mtrs. Ground floor : 1,447.00 Sq.Mtrs. 1 <sup>st</sup> floor : 1,447.00 Sq.Mtrs. <b>Proposed floors</b> 2 <sup>nd</sup> floor : 1,447.00 Sq.Mtrs. 3 <sup>rd</sup> floor : 1,447.00 Sq.Mtrs. 4 <sup>th</sup> floor : 1,447.00 Sq.Mtrs. 5 <sup>th</sup> floor : 1,447.00 Sq.Mtrs. 6 <sup>th</sup> floor : 1,447.00 Sq.Mtrs. 7 <sup>th</sup> floor : 1,447.00 Sq.Mtrs. Terrace floor : 40.29 Sq.Mtrs.
10	Total Built-up area.	<b>78,288.90 Sq.Mtrs.</b>
11	Surrounding Properties.	
	East	East: 27.00 Mtrs. wide Doddaballapur main road.
	West	West: Private vacant land.
	North	North: Private vacant land & Temple.
	South	South: BDA Layout.
	B. Structural details indicating the fire prevention, fire fighting and evacuation measures to be indicated in the drawings	
1	Width of the road to which the building abuts and whether it is hard surfaced to carry the weight of 45000 kgs. <b>As per Part 3 Development Control Rules and General Building Requirements clause 2.83 of NBC 2016</b> <b>Street :</b> Any means of access, namely, highway, street, lane, pathway, alley, stairway, passageway, carriageway, footway, square, place or bridge, whether a thoroughfare or not, over which the public have a right of passage or access or have passed and had access uninterruptedly for a specified period, whether existing or proposed in any scheme, and includes all bunds, channels, ditches, storm-water drains, culverts, footpaths, sidewalks, traffic islands, roadside trees and hedges, retaining walls, fences, barriers and railings within the street lines.	<b>Name of the Road:</b> The premises is abutting Doddaballapur main road located on the eastern side.  <b>Width of the Road:</b> 27.00 Mtrs.  <b>Type of Road :</b> Asphalted road.  <b>Is road a Dead end:</b> No.
2	Number of entrances and width of each entrance to the premises & height clearance over the entrance. <b>As per Part 3 Development Control Rules and General Building Requirements clause 4.6 (d) of NBC 2016</b> 1) The main entrance to the plot shall be of adequate width to allow easy access to the fire engine and in no case shall it measure less than 6 m. 2) The entrance gate shall fold back against the compound wall of the premises, thus leaving the exterior access way within the plot free for movement of fire tender. 3) If the main entrance at the boundary wall is built over, the minimum clearance shall be 4.5 m. <b>As per Part 3 Development Control Rules and General Building Requirements clause 4.6 of NBC 2016</b> a) The width of the main street on which the building abuts shall not be less than 12 m and one end of this street shall join another street not less than 12 m in width. b) The road shall not terminate in a dead end; except in the case of residential building, up to a height of 30 m.	<b>Main entrance width:</b> Provided 2 entry/ exits each of 7.00 mtrs. width & proposed to provide one entry/exit of 6.00 Mtrs. width from 27.00 Mtrs. wide Doddaballapur main road located on the eastern side.  <b>Is Entrance gate provisioned:</b> Yes.  <b>Is any Parabola planned :</b> Arch over the existing entrances have been provided with a height clearance of minimum 6.00 Mtrs.
	Width of open space (Setbacks) <b>As per Part 3 Development Control Rules and General Building Requirements of NBC 2016</b> <b>Clause 2.57 Open Space:</b> — An area, forming an integral part of the plot, left open to the sky. NOTE — The open space shall be the minimum distance measured between the front, rear and side of the building and the respective plot boundaries. <b>2.58 Open Space, Front</b> — An open space across the front of	



a plot between the building line and front boundary of the plot.

**2.59 Open Space, Rear** — An open space across the rear of a plot between the rear of the building and the rear boundary of the plot.

**2.60 Open Space, Side** — An open space across the side of the plot between the side of the building and the side boundary of the plot.

**As per Part 3 Development Control Rules and General Building Requirements clause of NBC 2016 Table 4 Side and Rear Open spaces to be left around the Building (Clause 8.2.3.1)**

Sl No.	Height of the Building	Side and rear open spaces to be left around the building
1.	10	3
2.	15	5
3.	18	6
4.	21	7
5.	24	8
6.	27	9
7.	30	10
8.	35	11
9.	40	12
10.	45	13
11.	50	14
12.	55	16
13.	70	17
14.	120	18
15.	Above 120	20

**NOTES:**

**1** For buildings above 24 m in height, there shall be a minimum front open space of 6 m.

**2.** Where rooms do not derive light and ventilation from the exterior open space, the width of such exterior open space as given in col 3 may be reduced by 1 m subject to a minimum of 3 m and a maximum of 8 m. No further projections shall be permitted.

**3.** If the length or depth of the building exceeds 40 m, add to col (3) ten percent of length or depth of building minus 4.0 m subject to maximum requirement of 20 m.

**As per Part 3 Development Control Rules and General Building Requirements clause of NBC 2016**

**Clause 4.6 (C):**

1) The approach to the building and open spaces on all its sides shall be not less than 6 m in width, and a turning radius of minimum 9 m shall be provided for fire tender movement of fire tenders weighing up to 45 t.

2) The same shall be hard surface capable of taking the mass of fire tender, weighing up to 45 t minimum. For heavier fire tenders, the minimum width, turning radius and the hard surface capable of taking the fire tender loads shall be as per the requirement laid down by the Fire Department. The layout for the open space for fire tender movement shall be done in consultation with the Chief Fire Officer of the city, which shall be kept free of obstructions and shall be motorable. The compulsory open spaces around the building shall not be used for parking.

3) If the main entrance at the boundary wall is built over, the minimum clearance shall be 4.5 m.

***Proposed height of Building-1 with 4 Blocks i.e. Girls Hostel, Admin Block, Civil Lab Block & Lab Block-2 - interconnected by connecting bridges is maximum 34.05 Mtrs.***

**Setback space left:**

Front (East) Minimum 12.00 Mtrs.

Rear (West) Minimum 11.00 Mtrs.

Side (North) Minimum 11.00 Mtrs.

Side (South) Minimum 12.00 Mtrs.

**Driveway space left:** Proposed to provide minimum 8.00 Mtrs wide fire driveway all around the building from the building line with a turning radius of 9.00 Mtrs. for the easy movement of fire vehicles.

***Proposed height of Building-2 with 2 Blocks i.e. BMSSA Block-1 & BMSSA Block-2 - interconnected by connecting bridge is maximum 29.95 Mtrs.***

**Setback space left:**

Front (North) Minimum 10.27 Mtrs.

Rear (South) 10.00 Mtrs.

Side (East) Minimum 10.80 Mtrs.

Side (West) Minimum 10.22 Mtrs.

**Driveway space left:** Proposed to provide minimum 6.00 Mtrs wide fire driveway all around the building from the building line with a turning radius of 9.00 Mtrs. for the easy movement of fire vehicles.



Width of means of access

**As per Part 3 Development Control Rules and General Building Requirements of NBC 2016**

**Clause 4.3.1 Width of Means of Access**

For all assembly buildings like, theatres, cinema houses assembly halls, stadia; educational buildings; markets, hospitals; industrial buildings and other buildings which attract large crowd, the means of access shall not be less than the following:

Sl no.	Width of means of access	Length of means of access
(1)	(2)	(3)
i.	12.0	200
ii.	15.0	400
iii.	18.00	600
iv.	24.00	Above 600

Further, in no case shall the means of access be lesser in width than the internal accessways in layouts and subdivision.

**Clause 4.3 Width of Means of Access**

4

The residential plots shall abut on a public means of access like street/road which is 12mtrs wide.

Plots which do not abut on a street/road shall abut/front on a means of access, the width and other requirements of which shall be as given in Table 1.

**Table 1 Width and Length of Means of Access (Clause 4.3)**

Sl no.	Width of means of access	Length of means of access
(1)	(2)	(3)
i.	6.0	75
ii.	7.5	150
iii.	9.0	250
iv.	12.0	400
v.	18.0	1000
vi.	24.0	Above 1000

**Note:** If the development is only on one side of the means of access, the prescribed widths may be reduced by 1 m in each case.

In no case, development on plots shall be permitted unless it is accessible by a public street of width not less than 6 m.

**Street/ Road width:-** 27.00 Mtrs. wide Doddaballapur main road.

The premises is directly abutting 27.00 Mtrs. wide Doddaballapur main road located on the eastern side through internal driveway.

Arrangement for parking the cars and ramps.

**As per Part 3 Development Control Rules and General Building Requirements of NBC 2016**

Provision has been made to park 77 cars in basement-2, 67 cars in basement-1 parking area of Building-1 (Girls Hostel Block & Admin Block), 32 cars at basement parking area of BMSSA Block-2 of Building-2 & 488 cars at different locations in the premises.

**No. of Ramps:-**

**Building-1 (Girls Hostel Block & Admin Block):** Proposed to provide 2 ramps from ground floor for the cars to reach basement-1 parking area & 2 ramps from basement-1 for the cars to reach basement-2 parking area.

**Building-2**

**BMSSA Block-2:** Proposed to provide one entry/ exit through ramp cum driveway located on the southern side of the building.

**Type of Ramp:-**



5	<p>Clause 2.63: Parking Space — An area enclosed or unenclosed, covered or open, sufficient in size to park vehicles, together with a drive-way connecting the parking space with a street or alley and permitting ingress and egress of the vehicles.</p> <p><b>Note: As per Clause 3.10) of ZR 2007 of BDA</b></p> <p><b>Ramps</b></p> <p>Provision for ramp shall have a minimum width of 3.5 m and a slope of not less than 1 in 12 or 1 in 10 and 1 in 8 in special cases. The ramp and the driveway in the basement shall be provided after leaving a clear gap of minimum 2.0 m from the common property line/ set back line. The slope of the ramp shall commence from 1.5 m of the edge of property line.</p>	<p><b>Building-1 (Girls Hostel Block &amp; Admin Block):</b> One way ramp.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-2:</b> One way ramp.</p> <p><b>Ramp width:-</b></p> <p><b>Building-1 (Girls Hostel Block &amp; Admin Block):</b> Each of 3.66 Mtrs.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-2:</b> Entry/exit of 6.00 Mtrs.</p> <p><b>Location of Ramp:-</b></p> <p><b>Building-1 (Girls Hostel Block &amp; Admin Block):</b> Ramps are located on the northern side of the building.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-2:</b> one entry/ exit to basement through ramp cum driveway is located on the southern side of the building.</p> <p><b>Gradation : 1:8.</b></p>
6	<p>Staircases.</p> <p><b>As per NBC 2016, Part 4, Fire and Life Safety clause 4.4.2.4.3 Staircases,</b></p> <p>As mentioned in <b>Part 4, Fire and Life Safety clause 1.2 All buildings,shall have a minimum of two staircases.</b></p> <p>The provisions of this Part are applicable to,</p> <p>a) all high rise buildings; where any of these buildings have floor area more than 500 m<sup>2</sup> on any one or more floors;</p> <p>6) Buildings with two basements or more, or with one basement of area more than 500 m<sup>2</sup> unless otherwise mentioned specifically in the provisions.</p> <p>The minimum width of tread without nosing shall be 300 mm for staircase of Business buildings. The treads shall be constructed and maintained in a manner to prevent slipping. The maximum height of riser shall be 150 mm. The number of risers shall be limited to 12 per flight. The staircases may be internal staircases or external staircases.</p> <p><b>4.4.2.4.3.2 Internal staircases</b></p> <p>The internal staircases may be constructed with an external wall, or otherwise, and shall comply with the following:</p> <p>a) Internal stairs shall be constructed of non- combustible materials throughout, and shall have fire resistant rating of minimum 120 min.</p> <p>b) A staircase shall not be arranged round a lift shaft.</p> <p>c) Exits shall not be used as a portion of a supply, return or exhaust air system serving adjoining areas. Any opening(s) shall not be permitted in walls or in doors, separating exits from adjoining areas.</p> <p>d) No flue chimney, electromechanical equipment, air conditioning units, gas piping or electrical panels shall be allowed in the stairway.</p> <p>e) Notwithstanding the detailed provision for exits in accordance with 4.2 and 4.3, <b>the following minimum width shall be provided for staircases for respective occupancies:</b></p> <p><b>1) Educational (B) : 1.50 m.</b></p> <p><b>2) Residential (A3) : 1.25 mtrs.</b></p> <p>f) A handrail shall be provided on one side of the staircase of width less than 1 500 mm, and on both sides of the staircase of width 1 500mm and more. The projection of handrail(s) in the staircase width shall not be more than 115 mm.</p> <p>h) The design of staircase shall also take into account the following:</p> <p>1) The minimum headroom in a passage under the landing of a staircase and under the staircase shall be 2.2 m</p> <p>2) Access to exit staircase shall be through a fire door of a minimum 120 min fire resistance rating.</p>	<p><b>No. of staircases:-</b></p> <p>—</p> <p><b>Building-1</b></p> <p><b>Girls Hostel:</b> 03 staircases.</p> <p><b>Admin Block:</b> 05 staircases.</p> <p><b>Civil Lab Block:</b> 03 staircases.</p> <p><b>Lab Block:</b> 02 staircases.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-1:</b> 03 staircases.</p> <p><b>BMSSA Block-2:</b> 03 staircases.</p> <p><b>Floor area:-</b></p> <p><b>Building-1</b></p> <p><b>Girls Hostel:</b> 1,512.70 Sq.Mtrs.</p> <p><b>Admin Block:</b> 2,353.02 Sq.Mtrs.</p> <p><b>Civil Lab Block:</b> 2,849.00 Sq.Mtrs.</p> <p><b>Lab Block:</b> 553.00 Sq.Mtrs.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-1:</b> 909.10 Sq.Mtrs.</p> <p><b>BMSSA Block-2:</b> 1,447.00 Sq.Mtrs.</p> <p><b>No. of Basement:-</b></p> <p><b>Building-1 (Girls Hostel Block &amp; Admin Block):</b> 2 basements.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-2:</b> One basement.</p> <p><b>Area of Basement:-</b></p> <p><b>Building-1 (Girls Hostel Block &amp; Admin Block):</b></p> <p>Lower basement: 4,241.42 Sq.Mtrs.</p> <p>Upper basement: 4,241.42 Sq.Mtrs.</p>



	<p>3) No living space, store or other fire risk shall open directly into staircases.</p> <p>4) The exit (including staircases) shall be continuous from refuge floors or terrace level, as applicable, to the level of exit discharge.</p> <p>5) No electrical shafts/air conditioning ducts or gas pipes, etc, shall pass through or open in the staircases.</p> <p>6) Lifts shall not open in staircase.</p> <p>7) No combustible material shall be used for decoration/wall panelling in the staircase.</p> <p>8) Beams/columns and other building features shall not reduce the head room/ width of the staircase.</p> <p>9) The floor indication board, indicating the location/designated number of staircase, respective floor number and direction to exit discharge shall be placed inside the staircase, on the wall nearest to the fire door. It shall be of size not less than 300 mm × 200 mm (see Fig. 9).</p> <p>10) Individual floors shall be prominently indicated on the wall outside the staircase and facing it.</p> <p><b>11) All staircases shall terminate at the level of exit discharge. The access to the basement shall be by a separate staircase.</b></p> <p><b>12) Scissors type staircases shall not be treated as part of exit.</b></p>	<p><b>Building-2</b></p> <p><b>BMSSA Block-2:</b> 1,419.00 Sq.Mtrs.</p> <p><b>Fire Rating:</b> 120 Min.</p> <p><b>Stairs around Lift:</b> No.</p> <p><b>Stairs are clear from any other service routings:</b> Yes.</p> <p>-</p> <p><b>No other service is taken inside the stairs:</b> Yes.</p> <p><b>Fire door rating:</b> 120 Min.</p> <p><b>Fire Signage board:</b> Yes.</p> <p>-</p> <p><b>Staircase terminated at Ground level:</b></p> <p><b>Building-1 (Girls Hostel Block &amp; Admin Block):</b> All the staircases are terminated at ground floor &amp; 6 separate staircases are proposed to reach basement parking area.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-2:</b> All the staircases are terminated at ground floor &amp; 2 separate staircases are proposed to reach basement parking area.</p>
7	Staircase Size	
	<p>a. Width of the staircases.</p> <p><b>As per Clause 4.4.2.4.3.2 of Part 4 Fire and Life Safety of NBC 2016</b> The following minimum width shall be provided for:</p> <ol style="list-style-type: none"> <li><b>Educational : 1.50 m</b></li> <li><b>Residential (A): 1.25 mtrs.</b></li> </ol>	<p><b>Building-1</b></p> <p><b>Girls Hostel:</b> Each of 1.50 Mtrs.</p> <p><b>Admin Block:</b> 3 each of 1.50 Mtrs. &amp; 2 each of 1.80 Mtrs.</p> <p><b>Civil Lab Block:</b> 2 each of 1.80 Mtrs. &amp; another of 2.00 Mtrs.</p> <p><b>Lab Block:</b> Each of 1.50 Mtrs.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-1:</b> Each of 1.50 Mtrs.</p> <p><b>BMSSA Block-2:</b> 2 each of 1.50 Mtrs. &amp; another of 1.80 Mtrs.</p>
	<p>b. Width of treads</p> <p><b>As per clause 4.4.2.4.3.1 of Part 4 Fire and Life Safety of NBC 2016:</b> The minimum width of tread without nosing shall be 300 mm for staircase of Educational buildings &amp; 250 mm for staircase of Residential Buildings.</p>	300 mm.
	<p>c. Height of riser.</p> <p><b>As per clause 4.4.2.4.3.1 of Part 4 Fire and Life Safety of NBC 2016 :</b> The maximum height of riser shall be 150 mm for staircase of Educational buildings &amp; 190 mm for staircase of Residential buildings.</p>	150 mm.
	<p>d. Number of risers in a flight</p> <p><b>As per clause 4.4.2.4.3.1 of Part 4 Fire and Life Safety of NBC 2016:</b> The number of risers shall be limited to 12 per flight.</p>	Maximum 12 risers per flight.
	<p>e. Height of hand rails</p> <p><b>As per clause 4.4.2.4.3.2 (f) of Part 4 Fire and Life Safety of NBC 2016:</b> Handrails shall be provided at a height of 1 000 mm to be measured from the base of the middle of the treads to the top of the handrails. Balusters/railing shall be provided such that the width of staircase does not reduce.</p>	1.00 Mtr.
	<p>f. Head room clearance</p> <p><b>As per Part 3 Development Control Rules and General Building Requirements clause 2.70 of NBC 2016</b></p> <p><b>As per clause 4.4.2.4.3.2 (h) (1) of Part 4 Fire and Life Safety of NBC 2016:</b></p> <p>The minimum headroom in a passage under the landing of a staircase and under the staircase shall be 2.2 m.</p>	<p><b>Building-1</b></p> <p><b>Girls Hostel:</b> Minimum 3.00 Mtrs.</p> <p><b>Admin Block:</b> Minimum 3.60 Mtrs.</p> <p><b>Civil Lab Block:</b> Minimum 2.65 Mtrs.</p> <p><b>Lab Block:</b> Minimum 3.60 Mtrs.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-1:</b> Minimum 2.80 Mtrs.</p> <p><b>BMSSA Block-2:</b> Minimum 3.60 Mtrs.</p>
	<p>Fire Tower</p> <p><b>As per Part-4, NBC 2016, 2.24 Firefighting Shaft (Fire</b></p>	



8	<p><b>Tower)</b> -An enclosed shaft having protected area of 120 min fire resistance rating comprising protected lobby, staircase and fireman's lift, connected directly to exit discharge or through exit passageway with 120 min fire resistant wall at the level of exit discharge to exit discharge. These shall also serve the purpose of exit requirement/ strategy for the occupants. The respective floors shall be approachable from fire-fighting shaft enabling the fire fighters to access the floor and also enabling the fire fighters to assist in evacuation through fireman's lift. The firefighting shaft shall be equipped with 120 min fire doors. The firefighting shaft shall be equipped with firemen talk back, wet riser and landing valve in its lobby, to fight fire by fire fighters (see Fig. 2 for a typical fire fighting shaft).</p>	<p><b>Proposed to provide one Fire Tower in Girls hostel, one Fire Tower in Admin Block, 2 Fire Tower in Civil Lab Block, one Fire Tower in BMSSA Block-1 &amp; one Fire Tower in BMSSA Block-2 as per 2.24 Fire shaft (Fire Tower) Part-4 of NBC-2016.</b></p>														
9	<p>Travel Distance</p> <p><b>Travel Distance:</b> — The distance to be travelled from any point in a building to a protected exit or external escape route or final exit measured along the line of travel.</p> <p><b>Table 5 Travel Distance (Based on Occupancy and Construction Type) (Clauses 4.4.2.1 and 4.4.2.2) of Part 4 Of NBC 2016.</b></p> <table><tr><th rowspan="2">Sl No</th><th rowspan="2">Occupancy Group</th><th colspan="2">Maximum Travel distance</th></tr><tr><th>Type 1 &amp; 2</th><th>Type 3 and 4</th></tr><tr><td>1.</td><td>i. Educational</td><td>30.00</td><td>22.50</td></tr><tr><td></td><td>ii. Residential (Group A)</td><td>30.00</td><td>22.50</td></tr></table> <p>Notes:</p> <p>1. For fully sprinklered building, the travel distance may be increased by 50 percent of the values specified.</p> <p>Ramp shall not be counted as an exit in case of basement below the first basement in car parking.</p>	Sl No	Occupancy Group	Maximum Travel distance		Type 1 & 2	Type 3 and 4	1.	i. Educational	30.00	22.50		ii. Residential (Group A)	30.00	22.50	<p><b>Building-1</b></p> <p><b>Girls Hostel &amp; Admin Block:</b> Maximum 29.00 Mtrs. from the farthest point to the staircases in basement.</p> <p><b>Girls Hostel:</b> Maximum 28.00 Mtrs. from the farthest point and maximum 14.20 Mtrs. from the dead end of the corridor to the staircases in upper floors.</p> <p><b>Admin Block:</b> Maximum 29.30 Mtrs. from the farthest point and maximum 6.00 Mtrs. from the dead end of the corridor to the staircases in upper floors.</p> <p><b>Civil Lab Block:</b> Maximum 30.00 Mtrs. from the farthest point and maximum 14.20 Mtrs. from the dead end of the corridor to the staircases in upper floors.</p> <p><b>Lab Block:</b> Maximum 25.18 Mtrs. from the farthest point and maximum 6.00 Mtrs. from the dead end of the corridor to the staircases in upper floors.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-1:</b> Maximum 26.70 Mtrs. from the farthest point to the staircases in basement.</p> <p>Maximum 28.90 Mtrs. from the farthest point and maximum 6.00 Mtrs. from the dead end of the corridor to the staircases in upper floors.</p> <p><b>BMSSA Block-2:</b> Maximum 23.00 Mtrs. from the farthest point and maximum 6.00 Mtrs. from the dead end of the corridor to the staircases in upper floors.</p>
Sl No	Occupancy Group			Maximum Travel distance												
		Type 1 & 2	Type 3 and 4													
1.	i. Educational	30.00	22.50													
	ii. Residential (Group A)	30.00	22.50													
	<p>Number of lifts and capacity.</p> <p><b>Lift:</b> An appliance designed to transport persons or materials between two or more levels in a vertical or substantially vertical direction by means of a guided car or a platform. The word elevator is also synonymously used for lift.</p> <p><b>As per clause 4.15.1 of Part-4 Fire and Life Safety of NBC-2016</b></p> <p>Where applicable, fire lifts shall be provided with a minimum capacity for 8 passengers and fully automated with emergency switch on ground level. In general, buildings 15 m in height or above shall be provided with fire lifts.</p> <p><b>Fire Lifts</b>— Following details shall apply for a fire lift:</p> <p>1) To enable fire services personnel to reach the upper floors with the minimum delay, one fire lift per 1 200 m<sup>2</sup> of floor area shall be provided and shall be available for the exclusive use of the firemen in an emergency.</p> <p>2) The lift shall have a floor area of not less than 1.4 m<sup>2</sup>. It shall have loading capacity of not less than 545 kg (8 persons lift) with automatic closing doors of minimum 0.8 m width.</p> <p>3) The electric supply shall be on a separate service from electric supply mains in a building and the cables run in a route safe from fire, that is, within the lift shaft. Lights and fans in the elevators having wooden panelling or sheet steel construction shall be operated on 24 V supply.</p> <p>4) Fire fighting lift should be provided with a ceiling hatch for use in case of emergency, so that when the car gets stuck up, it shall be easily openable.</p> <p>5) In case of failure of normal electric supply, it shall automatically trip over to alternate supply. Alternatively, the lift shall be so wired that in case of power failure, it comes down at the ground level and comes to stand-still with door open.</p> <p>6) The operation of a fire lift is by a simple toggle or two-button switch situated in a glass-fronted box adjacent to the lift at the entrance level. When the switch is on, landing call-points will become inoperative and the lift will be on car</p>															



10	<p>control only or on a priority control device. When the switch is off, the lift will return to normal working. This lift can be used by the occupants in normal times.</p> <p>7) The words 'Fire Lift' shall be conspicuously displayed in fluorescent paint on the lift landing doors at each floor level.</p> <p>8) The speed of the fire lift shall be such that it can reach the top floor from ground level within 1 min.</p> <p><b>Specification of lifts:</b></p> <p><b>C-1.5 Lifts</b></p> <p>General requirements of lifts shall be as follows:</p> <p>a) Walls of lift enclosures shall have a fire rating of 2 h; lifts shafts shall have a vent at the top of area not less than 0.2 m<sup>2</sup>.</p> <p>b) Lift motor room shall be located preferably on top of the shaft and separated from the shaft by the floor of the room.</p> <p>c) Landing doors in lift enclosures shall have a fire resistance of not less than 1 h.</p> <p>d) The number of lifts in one row for a lift bank shall not exceed 4 and the total number of lifts in the bank (of two rows) shall not exceed 8. A wall of 2 h fire rating shall separate individual shafts in a bank.</p> <p>e) Lift car door shall have a fire resistance rating of half an hour.</p> <p>f) Collapsible gates shall not be permitted for lifts and shall have solid doors with fire resistance of at least 1 h.</p> <p>g) If the lift shaft and lobby is in the core of the building, a positive pressure between 25 and 30 Pa shall be maintained in the lobby and a positive pressure of 50 Pa shall be maintained in the lift shaft. The mechanism for pressurization shall act automatically with the fire alarm; it shall be possible to operate this mechanically also.</p> <p>h) Exit from the lift lobby, if located in the core of the building, shall be through a self closing smoke stop door of half an hour fire resistance.</p> <p>j)Lifts shall not normally communicate with the basement; if, however, lifts are in communication, the lift lobby of the basements shall be pressurized as in (g), with self-closing door as in (h).</p> <p>k) Grounding switch(es), at ground floor level, shall be provided on all the lifts to enable the fire service to ground the lifts.</p> <p>m) Telephone or other communication facilities shall be provided in lift cars for building of 30 m in height and above. Communication system for lifts shall be connected to fire control room for the building.</p> <p>n) Suitable arrangements such as providing slope in the floor of lift lobby, shall be made to prevent water used during fire fighting, etc,at any landing from entering the lift shafts.</p> <p>p) A sign shall be posted and maintained on every floor at or near the lift indicating that in case of fire, occupants shall use the stairs</p> <p>unless instructed otherwise. The sign shall also contain a plan for each floor showing the locations of the stairways.</p> <p>Alternate source of power supply shall be provided for all the lifts through a manually operated changeover switch.</p>	<p><b>Girls Hostel Block:</b> Proposed to provide 3 passenger lifts &amp; one fire man lift, each of 10 passengers capacity (total 4 lifts).</p> <p><b>Admin Block:</b> Proposed to provide 3 passenger lifts each of 10 passengers capacity &amp; one Fire man lift of 13 passengers capacity (total 4 lifts).</p> <p><b>Civil Lab Block:</b> Proposed to provide 2 passenger lifts &amp; 2 fire man lifts, each of 13 passengers capacity (4 lifts).</p> <p><b>Lab Block-2:</b> Proposed to provide one passenger lift of 10 passengers capacity.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-1:</b> Proposed to provide one fireman lift of 10 passengers capacity.</p> <p><b>BMSSA Block-2:</b> Proposed to provide one passenger lift &amp; one fire man lift of 13 passengers capacity (2 lifts).</p> <p>Proposed to provide automatic self closing doors at each lift car and at each landing of 120 min fire resistance capacity.</p>
11	<p><b>Structural material</b></p> <p>RCC materials and brick walls of not less than two hours fire resistance should be used for the construction of structures. Only fire resistant materials or materials treated with fire retardant chemicals, should be used for interior decoration work. While attending the interior decoration the fixed fire fighting systems like sprinklers / risers etc., should not be covered or shifted from their original location</p>	<p>RCC materials and brick walls of not less than two hours fire resistance should be used for the construction of structures. Only fire resistant materials or materials treated with fire retardant chemicals, should be used for interior decoration work. While attending the interior decoration the fixed fire fighting systems like sprinklers / risers etc., should not be covered or shifted from their original location.</p>
	<p><b>Basements:-</b></p> <p><b>12.9.3. The basement shall have the following requirements:</b></p> <p>a) Every basement shall be in every part at least 2.4 m in height from the floor to the underside of the roof slab or ceiling;</p> <p>b) Adequate ventilation shall be provided for the basement. The ventilation requirements shall</p> <p>be the same as required by the particular occupancy</p>	



<p>according to byelaws. Any deficiency may be met by providing adequate mechanical ventilation in the form of blowers, exhaust fans, air conditioning systems, etc;</p> <p>c) The height of the ceiling of any basement shall be minimum 0.9 m and the maximum, 1.2 m above the average surrounding ground level.</p> <p>However, in case of parking, mercantile or business occupancy at ground floor, minimum height of the ceiling of the basement may be 0.3 m above the average surroundings ground level subject to mechanical ventilation being provided (see Fig. 11);</p> <p>d) Adequate arrangements shall be made such that surface drainage does not enter the basement;</p> <p>e) The walls and floors of the basement shall be watertight and be so designed that the effects of the surrounding soil and moisture, if any,</p> <p>are taken into account in design and adequate damp proofing treatment is given;</p> <p>f) The access to the basement shall be separate room the main and alternative staircase providing access and exit from higher floors.</p> <p>Where the staircase is continuous in the case of buildings served by more than one staircase, the same shall be of enclosed type serving as a fire separation from the basement floor and higher floors. Open ramps shall be permitted if they are constructed within the building line subject to the provision of (d);</p> <p>g) Access to basements through ramps shall be permitted subject to provision of (d). The requirements for the ramps shall be in accordance with 4.6.1.3 [see also Fig. 8 (b)];</p> <p>h) For all public buildings and uses including group housing, having basement going up to more than one level, access to all levels shall also be provided through lift. The exit requirements in basements shall comply with the provisions of Part 4 .Fire and Life Safety. of the Code.</p>	<p><b>Building-1</b></p> <p><b>Girls Hostel &amp; Admin Block:</b> All the staircases &amp; lift lobbies below ground floor are proposed to be pressurized &amp; also proposed to provide mechanical ventilation in basements.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-2:</b> Existing basement is naturally ventilated.</p>
<p>Smoke control of exits</p> <p><b>NBC 2016, Part 4, Fire and Life Safety Clause 4.4.2.5 Smoke control of exits)</b> In building design, compartmentation plays a vital part in limiting the spread of fire and smoke. The design should ensure avoidance of spread of smoke to adjacent spaces through the various leakage openings in the compartment enclosure, such as cracks, openings around pipes ducts, airflow grills and doors. In the absence of proper sealing of all these openings, smoke and toxic gases will obstruct the free movement of occupants of the building through the exits. Pressurization of staircases is of great importance for the exclusion of smoke and toxic gases from the protected exit.</p> <p>b) Pressurization is a method adopted for protecting the exits from ingress of smoke, especially in high-rise buildings. In pressurization, air is injected into the staircases, lobbies, etc, as applicable, to raise their pressure slightly above the pressure in adjacent parts of the building. As a result, ingress of smoke or toxic gases into the exits will be prevented. The pressurization of staircases and lift lobbies shall be adopted as given in Table 6. The pressure difference for staircases shall be 50 Pa. Pressure differences for lobbies (or corridors) shall be between 25 Pa and 30 Pa. Further, the pressure differential for enclosed staircase adjacent to such lobby (or corridors) shall be 50 Pa. For enclosed staircases adjacent to non-pressurized lobby (or corridors), the pressure differential shall be 50 Pa.</p> <p>c) Equipment and ductwork for staircase pressurization shall be in accordance with one of the following:</p> <p>1) Directly connected to the stairway by ductwork enclosed in non-combustible construction.</p> <p>2) If ducts used to pressurize the system are passed through shafts and grills are provided at each level, it shall be ensured that hot gases and smoke from the building cannot ingress into the staircases under any circumstances.</p> <p>d) The normal air conditioning system and the pressurization system shall be designed and interfaced to meet the requirements of emergency services. When the emergency pressurization is brought into action, the following changes in the normal air conditioning system shall be effected:</p> <p>1) Any re-circulation of air shall be stopped and all exhaust air vented to atmosphere.</p>	



2) Any air supply to the spaces/areas other than exits shall be stopped.

3) The exhaust system may be continued provided,

i) the positions of the extraction grills permit a general air flow away from the means of egress;

ii) the construction of the ductwork and fans is such that, it will not be rendered inoperable by hot gases and smoke; and

iii) there is no danger of spread of smoke to other floors by the path of the extraction system which can be ensured by keeping the extraction fans running.

e) For pressurized stair enclosure systems, the activation of the systems shall be initiated by signalling from fire alarm panel.

f) Pressurization system shall be integrated and supervised with the automatic/manual fire alarm system for actuation.

g) Wherever pressurized staircase is to be connected to unpressurized area, the two areas shall be segregated by 120 min fire resistant wall.

h) Fresh air intake for pressurization shall be away (at least 4 m) from any of the exhaust outlets/grille.

#### **Clause 12.9.3 (F)**

The access to the basement shall be separate from the main and alternative staircase providing access and exit from higher floors.

Where the staircase is continuous in the case of buildings served by more than one staircase, the same shall be of enclosed type serving as a fire separation from the basement floor and higher floors. Open ramps shall be permitted if they are constructed within the building line subject to the provision of (d);

**Pressurization of staircases & lift lobbies may be recommended as per requirement mentioned in Table-6.**

**As per clause 2.49 of Part 4 Fire and Life Safety of NBC 2016:**

**Pressurization** — The establishment of a pressure difference across a barrier to protect a **stairway, lobby, escape route** or room of a building from smoke penetration.

**Smoke exhaust and Pressurization of areas above ground as per clause 4.6.1 of Part 4 Fire and Life Safety of NBC 2016**

Corridors in exit access (exit access corridor) are created for meeting the requirement of use, privacy and layout in various occupancies. These are most often noted in hospitality, health care occupancies and sleeping accommodations.

Smoke exhaust system having make-up air and exhaust air system or alternatively pressurization system with supply air system for these exit access corridors shall be required.

Smoke exhaust system having make-up air and exhaust air system shall also be required for theatres/auditoria. Such smoke exhaust system shall also be required for large lobbies and which have exit through staircase leading to exit discharge. This would enable eased exit of people through smoke controlled area to exit discharge.

All exit passageway (from exit to exit discharge) shall be pressurized or naturally ventilated. The mechanical pressurization system shall be automatic in action with manual controls in addition. All such exit passageway shall be maintained with integrity for safe means of egress and evacuation. Doors provided in such exit passageway shall be fire rated doors of 120 min rating.

Smoke exhaust system where provided, for above areas and occupancies shall have a minimum of 12 air changes per hour smoke exhaust mechanism. Pressurization system where provided shall have a minimum pressure differential of 25-30 Pa in relationship to other areas.

The smoke exhaust fans in the mechanical ventilation system shall be fire rated, that is, 250°C for 120 min.

For naturally cross-ventilated corridors or corridors with operable windows, such smoke exhaust system or pressurization system will not be required.

**Smoke Exhaust and Pressurization of areas below Ground.**

#### **Building-1**

**Girls Hostel & Admin Block:** All the staircases & lift lobbies below ground floor are proposed to be pressurized & also proposed to provide mechanical ventilation in basements.

All the staircases in each block are proposed to be naturally ventilated.

#### **Building-2**

**BMSSA Block-2:** Existing basement is naturally ventilated.

All the staircases in each block are proposed to be naturally ventilated.



**As per clause 4.6.2 of Part 4 Fire and Life Safety of NBC 2016:**

Each basement shall be separately ventilated. Vents with cross-sectional area (aggregate) not less than 2.5 percent of the floor area spread evenly round the perimeter of the basement shall be provided in the form of grills, or breakable stall board lights or pavement lights or by way of shafts.

Alternatively, a system of mechanical ventilation system may be provided with following requirements:

a) Mechanical ventilation system shall be designed to permit 12 air changes per hour in case of fire or distress call. However, for normal operation, air changes schedule shall be as given in Part 8 'Building Services, Section 3 Air conditioning, Heating and Mechanical Ventilation' of the Code.

b) In multi-level basements, independent air intake and smoke exhaust shafts (masonry or reinforced concrete) for respective basement levels and compartments therein shall be planned with its make-up air and exhaust air fans located on the respective level and in the respective compartment. Alternatively, in multi-level basements, common intake masonry (or reinforced cement concrete) shaft may serve respective compartments aligned at all basement levels. Similarly, common smoke exhaust/outlet masonry (or reinforced cement concrete) shafts may also be planned to serve such compartments at all basement levels. All supply air and exhaust air fans on respective levels shall be installed in fire resisting room of 120 min. Exhaust fans at the respective levels shall be provided with back draft damper connection to the common smoke exhaust shaft ensuring complete isolation and compartmentation of floor isolation to eliminate spread of fire and smoke to the other compartments/floors.

c) Due consideration shall be taken for ensuring proper drainage of such shafts to avoid insanitation condition. Inlets and extracts may be terminated at ground level with stall board or pavement lights as before. Stall board and pavement lights should be in positions easily accessible to the fire brigade and clearly marked 'AIR INLET' or 'SMOKE OUTLET' with an indication of area served at or near the opening.

d) Smoke from any fire in the basement shall not obstruct any exit serving the ground and upper floors of the building.

e) The smoke exhaust fans in the mechanical ventilation system shall be fire rated, that is, 250°C for 120 min.

f) The smoke ventilation of the basement car parking areas shall be through provision of supply and exhaust air ducts duly installed with its supports and connected to supply air and exhaust fans. Alternatively, a system of impulse fans (jet fans) may be used for meeting the requirement of smoke ventilation complying with the following:

1) Structural aspects of beams and other down stands/services shall be taken care of in the planning and provision of the jet fans.

2) Fans shall be fire rated, that is, 250°C for 120 min.

3) Fans shall be adequately supported to enable operations for the duration as above.

4) Power supply panels for the fans shall be located in fire safe zone to ensure continuity of power supply.

5) Power supply cabling shall meet circuit integrity requirement in accordance with accepted standard [4(13)].

The smoke extraction system shall operate on actuation of flow switch actuation of sprinkler system. In addition, a local and/or remote 'manual start-stop control/switch' shall be provided for operations by the fire fighters. Visual indication of the operation status of the fans shall also be provided with the remote control. No system relating to smoke ventilation shall be allowed to interface or cross the transformer area, electrical switchboard, electrical rooms or exits. Smoke exhaust system having make-up air and exhaust air system for areas other than car parking shall be required for common areas and exit access corridor in basements/ underground structures and shall be completely separate and independent of car parking areas and other mechanical areas.

Supply air shall not be less than 5 m from any exhaust discharge openings.

Compartmentation

**As per clause 4.5 of Part 4 Fire and Life Safety of NBC 2016:**



14	<p><b>4.5.1 General</b></p> <p>a) It is important to limit the spread of a fire in any building. The usual method is to use fire barriers. In some instances these barriers need to be penetrated for ductwork, plumbing and electrical systems, and in such cases, use of passive fire protection measures shall be done so that the integrity of these barriers is not compromised.</p> <p>b) Floor(s) shall be compartmented with area as given below.</p> <p>4.5.2 All floors shall be compartmented / zoned with area of each compartment being not more than 750 m<sup>2</sup>. The maximum size of the compartment shall be as follows, in case of sprinklered Basement / Building:</p> <table border="1"> <thead> <tr> <th>Sl No</th><th>Use</th><th>Compartment-ation Area m<sup>2</sup></th></tr> </thead> <tbody> <tr> <td>1.</td><td>Basement car parking</td><td>3000</td></tr> <tr> <td>2.</td><td>Basements (other than car parking)</td><td>2000</td></tr> <tr> <td>3.</td><td>Business Buildings</td><td>3000</td></tr> </tbody> </table> <p>In addition, there shall be requirement of a minimum of two compartments if the floor plate size is equal or less than the areas mentioned above. However, such requirement of minimum two compartments shall not be required, if the floor plate is less than 750 m<sup>2</sup>. Compartmentation shall be achieved by means of fire barrier having fire resistance rating of 120 min.</p>	Sl No	Use	Compartment-ation Area m <sup>2</sup>	1.	Basement car parking	3000	2.	Basements (other than car parking)	2000	3.	Business Buildings	3000	<p><b>Proposed Compartmentation with water curtain system in basement of Building-1 (Girls Hostel &amp; Admin Block) &amp; Building-2 (BMSSA Block-2) &amp; with fire barrier in upper floors of each building as per NBC-2016.</b></p>
Sl No	Use	Compartment-ation Area m <sup>2</sup>												
1.	Basement car parking	3000												
2.	Basements (other than car parking)	2000												
3.	Business Buildings	3000												
15	<p>Gas Supply <b>As per clause 4.7.1 of Part 4 Fire and Life Safety of NBC 2016:</b></p> <p><b>Town Gas/ LPG supply pipes</b></p> <p>Where gas pipes are run in buildings, the same shall be run in separate shafts exclusively for this purpose and these shall be on external walls, away from the staircases. Gas distribution pipes shall always be below the false ceiling. The length of these pipes shall be as short as possible. In the case of kitchen cooking range area, hood should have grease filters using metallic grill to trap oil vapours escaping into the fume hood.</p> <p>NOTE — For detailed information on gas pipe installations, reference may be made to Part 9 'Plumbing Services, Section 4 Gas Supply' of the Code.</p> <p>4.7.2 Thermal detectors These shall be installed into fume hoods of large kitchens for hotels, hospitals, and similar areas located in high rise buildings. Arrangements shall be made for automatic tripping of the exhaust fan in case of fire. If gas is used, the same shall be shut off. The voltage shall be 24 V or 100 V d.c. operated with external rectifier. The valve shall be of the hand re-set type and shall be located in an area segregated from cooking ranges. Valves shall be easily accessible. The hood shall have manual facility for steam or suitable hood extinguishing gas released depending on duty condition.</p> <p><b>4.7.3</b> Gas cylinders and manifold shall need to be housed in a detached location with no other occupancy within distances prescribed in good practice [4(14)] thereof. There shall be an enclosure suitably ventilated. It is desirable to provide medium velocity spray nozzles which can be operated by quick opening valve situated away from the enclosure.</p> <p><b>4.7.4</b> In the case of gas cylinders, if manifold has to be installed on podium/close to podium, the same shall be away from any air intakes/smoke exhaust openings/ any windows.</p> <p><b>4.7.6</b> Gas meters shall be housed in a suitably constructed metal cupboard located in a well-ventilated space, keeping in view the fact that LPG is heavier than air and town gas is lighter than air.</p> <p><b>4.7.7</b> Wherever LPG reticulation/cylinders are used in buildings above 100 m, gas leak detectors shall be provided at the usage points and monitored from fire command centre. The cables used for signalling shall be circuit integrity cables. <b>4.7.8</b> The gas lines shall not be installed through any electrical shafts, escape routes, refuge areas / refuge floors. <b>4.7.9</b> Kitchens working on LPG fuel shall not be permitted in basements.</p>	<p>Not proposed: Gas supply system if proposed in the building should be provided as per <b>clause 4.7.1 of Part 4 Fire and Life Safety of NBC 2016.</b></p>												
	<p>Service ducts and shafts <b>3.4.5.4 Service ducts and shafts</b></p> <p>Openings in walls or floors which are necessary to be provided to allow passages of all building services like cables, electrical</p>													



<p>wirings, telephone cables, plumbing pipes, etc, shall be protected by enclosure in the form of ducts/shafts having a fire resistance not less than 120 min. The inspection door for electrical shafts/ducts low voltage wiring running in shafts/ducts, shall either be armoured type or run through metal conduits. The space between the electrical cables/conduits and the walls/slabs shall be filled in by a fire stop material having fire resistance rating of not less than 120 min. This shall exclude requirement of fire stop sealing for low voltage services shaft.</p> <p>16 For plumbing shafts in the core of the building, with shaft door opening inside the building, the shafts shall have inspection doors having fire resistance rating not less than 30 min. For plumbing shafts doors which open in wet areas or in naturally ventilated areas or on external wall of the building, the shafts may not require doors having any specified fire rating.</p> <p><b>3.4.6 Electrical Installation</b></p> <p>3.4.6.1 The electric distribution cables/wiring shall be laid in a separate shaft. The shaft shall be sealed at every floor with fire stop materials having the same fire resistance as that of the floor. High, medium and low voltage wiring running in shaft and in false ceiling shall run in separate shaft/conduits.</p> <p>Water mains, gas pipes, telephone lines, intercom lines or any other service line shall not be laid in the duct for electrical cables; use of bus ducts/solid rising mains</p>	<p>Proposed to provide service ducts in all buildings and provision has been made to seal the ducts at each floor level of each building.</p>
<p>Escape Lighting and Exit Signage's.</p> <p><b>3.4.7 Escape Lighting and Exit Signage</b> Exit access, exits and exit discharge shall be properly identified, with adequate lighting maintained in the elements of the egress systems so that all occupants shall be able to leave the facility safely.</p> <p><b>3.4.7.1 Lighting</b></p> <p>a) The exit, exit access and exit discharge systems shall be illuminated continuously. The floors of the means of egress shall be illuminated at all points, including angles and intersections, in corridors and passageways, stairwells, landings of stairwells and exit.</p> <p>b) Emergency lighting shall be powered from a source independent of that supplying the normal lighting.</p> <p>c) Escape lighting shall be capable of,</p> <ol style="list-style-type: none"> <li>1) indicating clearly and unambiguously the escape routes;</li> <li>2) providing adequate illumination along such routes to allow safe movement of persons towards and through the exits; and</li> <li>3) Ensuring that fire alarm call points and Fire fighting equipment provided along the escape routes can be readily located.</li> </ol> <p>d) The horizontal luminance at floor level on the centreline of an escape route shall not be less than 10 lumen / m<sup>2</sup>. In addition, for escape routes up to 2 m wide, 50 percent of the route width shall be lit to a minimum of 5 lumen / m<sup>2</sup>.</p> <p>e) Required illumination shall be arranged such that the failure of any single lighting unit, such as the burning out of one luminaire, will not leave any area in darkness and does not impede the functioning of the system further.</p> <p>f) The emergency lighting shall be provided to be put on within 5 s of the failure of the normal lighting supply. Also, emergency lighting shall be able to maintain the required illumination level for a period of not less than 90 min in the event of failure of the normal lighting even for smaller premises.</p> <p>g) Battery pack emergency lighting, because of its limited duration and reliability, shall not be allowed to be used in lieu of a diesel engine driven emergency power supply.</p> <p>h) Escape lighting luminaries should be sited to cover the following locations:</p> <ol style="list-style-type: none"> <li>1) Near each intersection of corridors,</li> <li>2) At exits and at each exit door,</li> <li>3) Near each change of direction in the escape route,</li> <li>4) Near each staircase so that each flight of stairs receives direct light,</li> <li>5) Near any other change of floor level,</li> <li>17 6) Outside each final exit and close to it,</li> <li>7) Near each fire alarm call point,</li> </ol>	<p><b>Escape Lighting and Exit Signage's should be provided as clause 3.4.7 to 3.4.7.4 of Part 4 Fire and Life Safety of NBC 2016.</b></p>



<p>8) Near fire fighting equipment, and</p> <p>9) To illuminate exit and safety signs as required by the enforcing authority.</p> <p><b>NOTE.</b> For the purpose of this clause 'near' is normally considered to be within 2 m measured horizontally.</p> <p>j) The luminaries shall be mounted as low as Possible, but at least 2 m above the floor level.</p> <p>k) Signs are required at all exits, emergency exits and escape routes, which should comply with the graphic requirements of the relevant Indian Standards.</p> <p><b>3.4.7.2</b> Exit passageway (at ground) and staircase lighting shall also be connected to alternative supply. The alternative source of supply may be provided by battery continuously trickle charged from the electric mains.</p> <p><b>3.4.7.3</b> Suitable arrangements shall be made by installing double throw switches to ensure that the lighting installed in the staircase and the corridor does not get connected to two sources of supply simultaneously. Double throw switch shall be installed in the service room for terminating the stand-by supply.</p> <p>The emergency lighting system shall be well maintained by periodical inspections and tests so as to ensure their perfect serviceability at all times.</p> <p><b>3.4.7.4</b> Exit signage Where exit access is provided through corridors / paths, the occupants shall be able to easily identify the way to exits. Exit signs shall be provided such that no point in an exit access is more than 30 m from a visible exit directional sign. An exit sign indicating the direction to an exit shall be provided at all changes in direction.</p> <p>Exits shall be clearly visible and the route to reach the exits shall be clearly marked and signs posted to guide the occupants of the floor concerned. Signs shall be illuminated and wired to an independent electrical circuit on an alternative source of supply. The sizes and colours of the exit signs shall be in accordance with good practice [4(7)]. The colour of the exit signs shall be green.</p> <p><b>NOTE.</b> This provision shall not apply to A-2 and A-4 occupancies less than 15 m in height. The exit sign with arrow indicating the way to the escape route shall be provided at a suitable height from the floor level on the wall and shall be illuminated by electric light connected to corridor circuits. All exit way marking signs should be so installed that no mechanical damage shall occur to them due to moving of furniture or other heavy equipment. Further, all landings of floor shall have floor indicating boards prominently indicating the number of the floor. Photo luminescent markings shall be pasted at internal hydrant boxes.</p>	
<p>Additional fire prevention requirements for Educational Building Group B to be referred &amp; followed as per Clause: 6.2 of NBC 2016, Part IV of Fire &amp; Life Safety.</p> <p>6.2 Educational Buildings (Group B)</p> <p>6.2.1 Fire Prevention</p> <p>a) Buildings intended for educational occupancy shall not be used for storage of any hazardous material.</p> <p>b) Gymnasiums, indoor stadiums and similar occupancies are permitted to have floors/ running tracks of wood, cinder, synthetic or the like.</p> <p>6.2.2 Life Safety</p> <p>a) Every room with a capacity of over 45 persons in area shall have at least two doorways. Exit doors shall be operated by panic bars except that doors leading from classrooms directly to the outside may be equipped with the same type of lock as is used on classroom doors leading to corridor, with no provision whatsoever for locking against egress from the classroom.</p> <p>b) A building, which will have only the first floor and is accessible to not more than 20 pupils at any time, may be used for school purposes with the following exceptions:</p> <p>1) Exterior walls or parts of walls which are less than 900 mm from adjacent property lines shall have no openings therein.</p> <p>2) Classrooms may have only one exit not less than 900 mm wide.</p> <p>c) Rooms or areas for use by the preschool, kindergarten, Class/Grade 1 students shall be located on ground floor/level of exit discharge. Rooms or areas occupied by Class/Grade II</p>	<p><b>Additional fire prevention requirements for the building shall be provided as per Clause: 6.2 of NBC 2016, Part IV of Fire &amp; Life Safety in Building-1 &amp; 2 educational buildings.</b></p>



	<p>students shall be located not above one floor higher than ground floor/level of exit discharge.</p> <p>d) Of the minimum exits as specified in 4.4.2.4.3.1, the naturally ventilated exit staircases, may not require provision of fire door. However, fire door shall be provided for all other staircases and pressurized staircases.</p> <p>6.2.3 Additional Precautions</p> <p>a) Storage of volatile flammable liquids shall be prohibited and the handling of such liquids shall be restricted to science laboratories only.</p> <p>b) All exterior openings in a boiler room or rooms containing central heating equipment, if located below an opening in another storey or if less than 3 m from other doors or windows</p> <p>of the same building, shall be protected by a fire assembly as in 3.4.5. Such assemblies shall be of fixed, automatic or selfclosing type.</p>	
	<p>D. The builder should arrange for the following fire fighting and evacuation measures:-</p>	
1	<p>Electric Power Supply.</p> <p><b>NBC 2016, Part-4 Fire and Life Safety, 3.4.6.2</b></p> <p>Emergency power for fire and life safety systems Emergency power supplying distribution system for critical requirement for functioning of fire and life safety system and equipment shall be planned for efficient and reliable power and control supply to the following systems and equipment where provided:</p> <p>a) Fire pumps.</p> <p>b) Pressurization and smoke venting; including its ancillary systems such as dampers and actuators.</p> <p>c) Fireman's lifts (including all lifts).</p> <p>d) Exit signage lighting.</p> <p>e) Emergency lighting.</p> <p>f) Fire alarm system.</p> <p>g) Public address (PA) system (relating to Emergency voice evacuation and annunciation).</p> <p>h) Magnetic door hold open devices.</p> <p>j) Lighting in fire command centre and security room. Power supply to these systems and equipment shall be from normal and emergency (standby generator) power sources with changeover facility. If power supply, is from HV source and HV generation, the transformer should be planned in standby capacity to ensure continuity of power to such systems. Wherever and backup DG sets are of higher voltage rating, then dual redundant cables shall be taken to all transformers. The generator shall be capable of taking starting current of all the fire and life safety systems and equipment as above. Where parallel HV/LV supply from a separate substation fed from different grid is provided with appropriate transformer for emergency, the provision of generator may be waived in consultation with the Authority.</p> <p><b>3.4.6.4 Standby supply</b></p> <p><b>Diesel generator set(s) shall not be installed at any floor other than ground/first basement.</b> If the same are installed indoors, proper ventilation and exhaust shall be planned. The DG set room shall be separated by 120 min fire resistance rated walls and doors. The oil tank for the DG sets (if not in the base of the DG) shall be provided with a enclosure having a volumetric capacity of at least 10 percent more than the volume of the oil tank. The enclosure shall be filled with sand for a height of 300 mm. For detailed information regarding fire safety requirements for hazardous petroleum products, reference may be made to The Petroleum Act, 1934 and the Rules framed there under.</p>	<p>Proposed to provide 2 standby generators, one of 500 KVA &amp; another of 320 KVA capacity on the open space available on the Southern side of BMSSA Block-1 after leaving 6.00 Mtrs. wide driveway from the building line to provide service to all the emergency provisions in all the buildings.</p>
	<p>Down comer system.</p> <p><b>NBC-2016, Part-4, Fire &amp; Life Safety, Down-comer —</b></p> <p>An arrangement of fire fighting within the building by means of down-comer pipe connected to terrace tank through terrace pump, gate valve and non-return valve and having mains not less than 100 mm internal diameter with landing valves on each floor/landing. It is also fitted with inlet connections at ground level for charging with water by pumping from fire service appliances and air release valve at roof level to release trapped air inside.</p>	



2	<p><b>NBC 2016, Part-4, Fire &amp; Life Safety Table 7 (6) down comer shall be provided for every 1000 sq.mtrs. built up area,</b></p> <p><b>Educational Buildings (Group B)</b></p> <ol style="list-style-type: none"> <li>1.</li> <li>1. For 15 m and above but not exceeding 24 m in height.</li> </ol> <p>Size of mains shall be 100 mm with single outlet landing valves.</p> <p><b>Dormitories (A-3)</b></p> <ol style="list-style-type: none"> <li>2. 1. For 15 m and above but not exceeding 35 m in height.</li> </ol> <p>The down comer should be of 100 mm internal diameter and G.I. 'C' class pipe. From each down comer single hydrant outlet should be provided</p>	<p>Proposed to provide wet riser systems in all the buildings.</p>
3	<p>Wet riser system.</p> <p><b>NBC 2016 Part-4, Fire &amp; Life Safety, Clause 2.65 Wet Riser</b> — An arrangement for fire fighting within the building by means of vertical rising mains not less than 100 mm nominal diameter with landing valves on each floor/landing for fire fighting purposes and permanently charged with water from a pressurized supply.</p> <p><b>NBC -2016, Part-4 Fire &amp; Life Safety, Table 7 (5) wet riser shall be provided for every 1000 sq.mtrs. built up area,</b></p> <p><b>Educational Buildings (Group B)</b></p> <ol style="list-style-type: none"> <li>1.</li> <li>1. 24 m and above in height but not exceeding 30.00 Mtrs. in height.</li> </ol> <p>Size of mains shall be 150 mm with single outlet landing valves – above 45 m height.</p> <p><b>Dormitories (A-3)</b></p> <ol style="list-style-type: none"> <li>2. 1. 35 m and above in height.</li> </ol> <p>The riser should be of 100 mm internal diameter and G.I. 'C' class pipe. From each riser single hydrant outlet should be provided at each landing.</p>	<p><b>Building-1:</b> Proposed to provide 3 wet riser-cum- down comer systems in <b>Girls Hostel Block</b>, 2 wet riser-cum-down comer systems in <b>Admin Block</b>, 3 wet riser-cum- down comer systems in <b>Civil Lab Block</b>, one wet riser-cum- down comer system in <b>Lab Block-2</b> near the staircases Each riser will be of 100 mm internal diameter and will be of G.I. 'C' Class pipe. From each riser single headed hydrant outlet at each floor landing will be provided. _</p> <p><b>Building-2:</b> Proposed to provide 2 wet riser-cum- down comer systems in <b>BMSSA Block-2</b>, one wet riser-cum- down comer system in <b>BMSSA Block-1</b> near the staircases Each riser will be of 100 mm internal diameter and will be of G.I. 'C' Class pipe. From each riser single headed hydrant outlet at each floor landing will be provided. _</p>
4	<p>First aid hose reel hose system.</p> <p><b>NBC-2016, Part-4, Fire and Life Safety, Table 7 (4) First Aid Hose reel shall be provided for,</b></p> <p><b>Educational Buildings (Group B)</b></p> <ol style="list-style-type: none"> <li>1. Should be provided in all the buildings upto 30 m height.</li> </ol> <p><b>Dormitories (A-3)</b></p> <ol style="list-style-type: none"> <li>2. Should be provided in all the buildings irrespective of height and irrespective of occupancy.</li> </ol> <p>Rubber lined Hose reel hose of size minimum 19 mm of 40 mtr length as per IS 884, with Gate valve (upstream) and shut off nozzle of 5 mm size. The hose reel hose should be connected at each landing by means of an adaptor. Adequate BIS marked re-in forced rubber lined delivery hoses of 63 mm size to reach the farthest point of the floor / setbacks from the system should be provided with a branch pipe near each hydrant outlet in a proper box to protect it from withering.</p>	<p>Hose reel hose of 40.00 mtrs. length with drum and 2 Nos. delivery hose pipes, each of 15 mtrs. length with gunmetal branch pipe will be provided inside the hose cabinet near each outlet of each building.</p>
5	<p>Hydrant system</p> <p><b>NBC-2016, Part-4, Clause 2.64.1 : Hydrant system</b> – A distribution system having a network of piping installed underground / above ground around and / or through inside of a building with internal and / or external hydrants fitted with landing walls at regular interval according to the occupancy. The distribution system is connected to water supply system from fire fighting.</p> <p><b>NBC-2016, Part-4, Table 7 (7)Yard hydrant shall be provided for,</b></p> <p><b>Educational Buildings (Group B)</b></p> <ol style="list-style-type: none"> <li>1. 24 m and above but not exceeding 30 m in height.</li> </ol> <p><b>NBC-2016, Part-4, Table 7 (7)Yard hydrant shall be provided for,</b></p>	<p>Proposed to provide 7 nos. yard hydrants all around <b>Girls Hostel Block &amp; Admin Block</b>, 6 nos. yard hydrants all around <b>Civil Lab Block</b> of <b>Building-1</b> &amp; 8 nos. yard hydrants all around <b>BMSSA Block-1 &amp; 2</b> and proposed to provide one 4 way fire brigade inlet near the entrance.</p>



	<p><b>Dormitories (A-3)</b></p> <p>1. 45 m and above in height.</p> <p>At least two fire service inlets to boost the water in the riser directly from the mobile pump should also be provided. These inlets should be located at an easily accessible position, preferable near the entry point to the premises.</p>	
6	<p>Underground Static Water Storage Tank Combined Capacity for Wet Riser, Yard hydrant and Sprinklers per set of Pumps shall be provided</p> <p><b>NBC-2016, Part-4, Table 7 (11) Underground Static Water Storage Tank Combined Capacity for Wet Riser, Yard hydrant and Sprinklers per set of Pumps shall be provided for,</b></p> <p><b>Educational Buildings (Group B)</b></p> <p>1. Above 24 m but not exceeding 30 m. In height – 50,000 lts.</p> <p><b>NBC-2016, Part-4, Table 7 (11) Underground Static Water Storage Tank Combined Capacity for Wet Riser, Yard hydrant and Sprinklers per set of Pumps shall be provided for,</b></p> <p><b>Dormitories (A-3)</b></p> <p>1. Above 35 m but not exceeding 45 m. In height – 75,000 lts. 2. Above 45 m but not exceeding 60 m. In height – 1,50,000 lts. 3. Above 60 m in height. – 2,00,000 lts.</p> <p><b>Note: Fire tank to be always filled with water. Over flow of fire tank to be taken to domestic tank. Arrangement should be such that any incoming water should first fill-up fire tank, then overflow to other utilizations.</b></p> <p><b>H-4 ENCLOSED PARKING STRUCTURES</b></p> <p>c) For basement car parking, compartmentation can be achieved, with fire barrier or with water curtain nozzle (K-23) or with combination there of. Automatic deluge system comprising deluge valve, piping, nozzles, etc shall be used to zone the compartment in case of water curtain system. In case of water curtain, existing water storage shall be supplemented by water demand for water curtain nozzles for 60 min considering the largest compartment. perimeter out of all compartments of car parking in any of the basements.</p> <p>d) The water supply for the water curtain nozzles shall be through independent electric pump of adequate capacity (flow and head) with piping/riser for the water supply to the nozzles.</p> <p>e) The water curtain shall be operated by the actuation of flow switch actuating sprinkler system.</p>	<p>All the wet riser-cum-down comer systems of <b>Building-1 &amp; 2</b> are proposed to be connected to an underground tank of 2,00,000 litres capacity.</p>
7	<p>Terrace Tank</p> <p><b>NBC-2016, Part-4 Table 7(12) Terrace Tank Over Respective Tower Terrace shall be provided for</b></p> <p><b>Educational Buildings (Group B)</b></p> <p>1. Less than 15 m in height</p> <p>i. With ground plus one or more storeys - 10,000 Ltrs. (5000) (<b>Note:6</b> Additional value given in parenthesis shall be added if basement area exceeds 200 m<sup>2</sup> )</p> <p>2. 15 m and above up to 24.00 mtrs. height - 25,000 Ltrs.</p> <p>3. Above 24.00 mtrs. in height but not exceeding 30.00 mtrs. in height – (5000) ltrs. (<b>Note:6</b> Additional value given in parenthesis shall be added if basement area exceeds 200 m<sup>2</sup> )</p> <p><b>NBC-2016, Part-4 Table 7(12) Terrace Tank Over Respective Tower Terrace shall be provided for</b></p> <p><b>Dormitories (A-3)</b></p> <p>1. Less than 15 m in height 5000 lts. (5000 lts.) (<b>Note 6</b> :Additional value given in parenthesis shall be added if basement area exceeds 200 m<sup>2</sup> )</p> <p>2. 15 m and above but not exceeding 35 m in height 25,000 lts.</p> <p>3. Above 35 m but not exceeding 45 m in height 5000 lts.</p>	<p><b>Building-1</b></p> <p><b>Girls Hostel Block:</b> All the wet riser systems are proposed to connected to an overhead tank of 5,000 litres capacity.</p> <p><b>Admin Block:</b> Both the wet riser systems are proposed to connected to an overhead tank of 10,000 litres capacity.</p> <p><b>Civil Lab Block:</b> All the wet riser systems are proposed to connected to an overhead tank of 10,000 litres capacity.</p> <p><b>Lab Block-2:</b> The wet riser system is proposed to connected to an overhead tank of 10,000 litres capacity.</p> <p><b>Building-2</b></p> <p><b>BMSSA Block-1:</b> Both the wet riser systems are proposed to connected to an overhead tank of 10,000 litres capacity.</p> <p><b>BMSSA Block-2:</b> The wet riser system is proposed to connected to an overhead tank of</p>



<p>4. 45 m and above in height 10,000 lts.</p> <p>Note: Over head tank to overflow to domestic tank. Arrangement should be such that any incoming water should first fill-up fire tank, then overflow to other utilizations.</p>	<p>10,000 litres capacity.</p>
<p>Pump near underground static water storage tank (Fire pump) with minimum pressure of 3.5 kg/cm<sup>2</sup> at remotest location.</p> <p><b>NBC-2016, Part-4, Table 7 (13) Pump near underground static water storage tank (Fire pump) with minimum pressure of 3.5 kg/cm<sup>2</sup> at remotest location.</b></p> <p><b>Educational Buildings (Group B)</b></p> <p>1. Above 24 m but not exceeding 30 m in height.(<b>Note 14</b> : Provide required number of sets of pumps each consisting of one electric and one diesel pump (stand by) of capacity 1620 litre/min and one electric pump of capacity 180 litre/min (see Fig. 11) (see also Notes 22 and 23).</p> <p>(<b>Note 22:</b> One set of pumps shall be provided for each 100 hydrants or part thereof, with a maximum of two sets. In case of more than one pump set installation, both pump sets shall be interconnected at their delivery headers.</p> <p>(<b>Note 23:</b> Alternative to provisions of additional set of pumps, the objective can be met by providing additional diesel pump of the same capacity and doubling the water tank capacity as required for one set of pumps.)</p> <p><b>Dormitories (A-3)</b></p> <p>1. Above 35 m but not exceeding 45 m in height</p> <p>(<b>Note 10</b> :One electric and one diesel pump of capacity 2280 l/min and one electric pump of capacity 180 l/min. See also Note 22 and 23)</p> <p>(<b>Note 22:</b> One set of pumps shall be provided for each 100 hydrants or part thereof, with a maximum of two sets. In case of more than one pump set installation, both pump sets shall be interconnected at their delivery headers.</p> <p>(<b>Note 23:</b> Alternative to provisions of additional set of pumps, the objective can be met by providing additional diesel pump of the same capacity and doubling the water tank capacity as required for one set of pumps.)</p> <p>8 2. Above 45 m in height but not exceeding 60 m in height</p> <p>(<b>Note 11</b> Provide required number of sets of pumps each consisting of two electric and one diesel pump (stand by) of capacity 2 280 litre/min and two electric pump of capacity 180 litre/min (see Fig. 12) (see also Notes 22 and 23).</p> <p>(<b>Note 22</b> One set of pumps shall be provided for each 100 hydrants or part thereof, with a maximum of two sets. In case of more than one pump set installation, both pump sets shall be interconnected at their delivery headers.</p> <p><b>Note 23</b> Alternative to provisions of additional set of pumps, the objective can be met by providing additional diesel pump of the same capacity and doubling the water tank capacity as required for one set of pumps.)</p> <p>1. Above 60 m in height</p> <p>(<b>Note 12</b> Provide required number of sets of pumps each consisting of two electric and one diesel pump (stand by) of capacity 2 850 litre/min and two electric pump of capacity 180 litre/min (see Fig. 12) (see also Notes 22 and 23)</p> <p>(<b>Note 13</b> Lower levels in high rise buildings 60 m or above in height are likely to experience high pressure and therefore, it is recommended to consider multi-stage, multi-outlet pumps (creating pressure zones) or variable frequency drive pumps or any other equivalent arrangement)</p> <p>(<b>Note 22</b> One set of pumps shall be provided for each 100 hydrants or part thereof, with a maximum of two sets. In case of more than one pump set installation, both pump sets shall be interconnected at their delivery headers.</p> <p>(<b>Note 23</b> Alternative to provisions of additional set of pumps, the objective can be met by providing additional diesel pump of the same capacity and doubling the water tank capacity as required for one set of pumps.)</p> <p>If Basement is compartmented using water curtains additional pump as per clause H-4 d) The water supply for the water curtain nozzles shall be through independent electric pump of adequate capacity (flow and head) with piping/riser for the water supply to</p>	<p>All the wet riser cum down systems of <b>Building-1 &amp; 2</b> are proposed to be connected to an electrically driven pump &amp; 2 diesel driven pumps, each capable of delivering 2850 litres of water per minute along with a jockey pump capable of delivering 180 litres of water per minute.</p> <p><b>Building-1 (Girls Hostel &amp; Admin Block):</b> Water curtain system is proposed to be connected to an electrically driven pump, capable of delivering 1620 litres of water per minute.</p> <p><b>Building-2 (BMSSA Block-2):</b> Water curtain system is proposed to be connected to an electrically driven pump, capable of delivering 900 litres of water per minute.</p>



	the nozzles to be provided.																			
9	<p>pumps at the Terrace tank level with Minimum Pressure of 3.5 kg/cm<sup>2</sup> shall be provided</p> <p><b>NBC-2016, Part-4, Table 7 (14) pumps at the Terrace tank level with Minimum Pressure of 3.5 kg/cm<sup>2</sup> shall be provided for,</b></p> <p><b>Educational Buildings (Group B)</b></p> <ol style="list-style-type: none"> <li>Less than 15 m in height</li> <li>Ground plus one or more storeys – 450 (450) LPM (<b>Note 6:</b> Additional value of 450 LPM will given in parenthesis shall be added if basement area exceeds 200 m<sup>2</sup>)</li> <li>15 m and above but not exceeding 24 m in height – 900 LPM</li> </ol> <p><b>Dormitories (A-3)</b></p> <ol style="list-style-type: none"> <li>Less than 15 m in height 450 LPM (450 LPM) (<b>Note 6:</b> Additional value given in parenthesis shall be added if basement area exceeds 200 m<sup>2</sup>. )</li> <li>15 m and above but not exceeding 35 m in height – 900 LPM.</li> </ol>	Not required.																		
10	<p>Manually operated fire alarm system.</p> <p><b>NBC-2016, Part-4, Clause 2.1 Alarm System</b> –Fire alarm system comprising components for automatically detecting a fire, initiating an alarm of fire and initiating other actions as appropriate.</p> <p>NOTE – The system may also include manual fire alarm call points.</p> <p><b>NBC-2016, Part-4, Table 7 (9) Manually operated Electric Fire alarm system is required</b></p> <p><b>Educational Buildings (B)</b></p> <ol style="list-style-type: none"> <li>15 m and above in height.</li> </ol> <p><b>NBC-2016, Part-4, Table 7 (9) Manually operated Electric Fire alarm system is required</b></p> <p><b>Dormitories (A-3)</b></p> <ol style="list-style-type: none"> <li>15 m and above in height.</li> </ol> <p>Manually operated electrical fire alarm system should be installed with call boxes located near each staircase landing of each building. The call boxes should be of 'break glass' type, where the call is transmitted automatically to the control room when the glass of the system is broken. This system should also be connected to an alternative source of power supply (diesel generator).</p> <p>The call boxes should be so installed that their location can be easily noticed from either direction and should be at a height of one meter from the floor level.</p>	Proposed to provide manually operated alarm system with call point near each staircase landing at each floor and its control panel at ground floor of each building.																		
11	<p>Automatic Fire Detection and alarm systems</p> <p><b>NBC -2016, Part-4, Clause 2.1 as per Table 7(10) Automatic Fire Detection and alarm systems required(see Note 2:</b> automatic detection and alarm system is not required to be provided in car parking area. Such detection system shall however be required in other areas of car parking such as electrical rooms, cabins and other areas)</p> <p>–Fire alarm system comprising components for automatically detecting a fire, initiating an alarm of fire and initiating other actions as appropriate.</p> <p><b>Educational Building (B)</b></p> <p>To be installed in basement if area of basement exceeds 200 m<sup>2</sup>.</p> <p><b>As per Table 7(10) Automatic Detection and Alarm System.</b></p> <p><b>Dormitories (A-3)</b></p> <p>Above 60 m in height (Automatic detection and alarm system is not required to be provided in car parking area. Such detection system shall however be required in other areas of car parking such as</p>	<p>Proposed to provide automatic fire detection system as mentioned below:-</p> <table> <tr> <th>Floors</th><th>Smoke Detectors</th><th>Beam detectors</th></tr> <tr> <td colspan="3"><b><u>Building-1</u></b></td></tr> <tr> <td colspan="3"><b><u>Hostel Block</u></b></td></tr> <tr> <td>1<sup>st</sup> floor to 10<sup>th</sup> floor</td><td>06 on each floor</td><td>---</td></tr> <tr> <td colspan="3"><b><u>Admin Block</u></b></td></tr> <tr> <td>5<sup>th</sup> floor</td><td>---</td><td>04</td></tr> </table>	Floors	Smoke Detectors	Beam detectors	<b><u>Building-1</u></b>			<b><u>Hostel Block</u></b>			1 <sup>st</sup> floor to 10 <sup>th</sup> floor	06 on each floor	---	<b><u>Admin Block</u></b>			5 <sup>th</sup> floor	---	04
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5 <sup>th</sup> floor	---	04																		



	electrical rooms, cabins and other areas)																												
12	<p><b>Public Address System</b> A system of two way talk back speaker with push to talk speakers to be provided at every staircase or firemen telephone to be provided at every staircase. Necessary console &amp; amplifier with micro phone to be provided at ground floor in fire command center.</p>	Proposed to provide Public Address System with two way communication facility near each staircase landing at each floor and with its console at ground floor of each building.																											
13	<p><b>Automatic sprinkler system</b> A system of water pipes fitted with sprinkler heads at suitable intervals and heights and designed to actuate automatically, control and extinguish a fire by the discharge of water.</p> <p><b>NBC-2016, Part-4, Table 7 (8) Automatic Sprinkler system.</b></p> <p><b>Educational Building (B)</b></p> <p>To be installed in basement if area of basement exceeds 200 m<sup>2</sup>.</p> <p><b>NBC-2016, Part-4, Table 7 (8) Automatic Sprinkler system.</b></p> <p><b>Dormitories (A-3)</b></p> <p>1. Upto 35 m in height.</p> <p>(Note4: Required to be installed in basement if area of basement exceeds 200 m<sup>2</sup>)</p> <p>2. Above 35 m but not exceeding 45 m in height.</p> <p>(Note 4: Required to be installed in basement if area of basement exceeds 200 m<sup>2</sup> and Note 9: Sprinklers shall be fed water from both underground static water storage tank and terrace tank)</p> <p>45 m and above in height to installed in entire building. (Basements, ground and all upper floors)</p>	<p>Proposed to provide automatic sprinkler system as mentioned below:-</p> <table> <tr> <th>Floors</th><th>Sprinkler heads</th><th>Water curtain Nozzles</th></tr> <tr> <td colspan="3"><b>Building-1</b></td></tr> <tr> <td colspan="3"><b>Hostel &amp; Admin Block</b></td></tr> <tr> <td>Basement -2</td><td>218</td><td>26</td></tr> <tr> <td>Basement-1</td><td>218</td><td>26</td></tr> <tr> <td colspan="3"><b>Building-2</b></td></tr> <tr> <td colspan="3"><b>BMSSA</b></td></tr> <tr> <td colspan="3"><b>Block-2</b></td></tr> <tr> <td>Basement</td><td>75</td><td>09</td></tr> </table>	Floors	Sprinkler heads	Water curtain Nozzles	<b>Building-1</b>			<b>Hostel &amp; Admin Block</b>			Basement -2	218	26	Basement-1	218	26	<b>Building-2</b>			<b>BMSSA</b>			<b>Block-2</b>			Basement	75	09
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14	<p><b>HORIZONTAL EXITS/REFUGE AREA</b> <b>NBC-2016, Part-4, Annex-E-4</b></p> <p>a) A horizontal exit shall be through a fire door of 120 min rating in a fire resistant wall. Horizontal exit require separation with the refuge area or adjoining compartment through 120 min fire barrier. The adjoining compartment of the horizontal exit should allow unlocked and ease of egress and exits for the occupants using defend in place strategy.</p> <p>Requirements of horizontal exits are as under: a) Width of horizontal exit doorway shall be suitable to meet the occupant load factor for egress.</p> <p>b) Doors in horizontal exits shall be openable at all times from both sides.</p> <p>c) All doors shall swing in the direction of exit travel. For horizontal exits, if a double leaf door is used, the right hand door leaf shall swing in the direction of exit travel.</p> <p>d) Refuge area shall be provided in buildings of height more than 24 m. Refuge area provided shall be planned to accommodate the occupants of two consecutive floors (this shall consider occupants of the floor where refuge is provided and occupants of floor above) by considering area of 0.3 m<sup>2</sup> per person for the calculated number of occupants and shall include additionally to accommodate one wheel chair space of an area of 0.9 m<sup>2</sup> for every 200 occupants, portion thereof, based on the occupant load served by the area of refuge or a minimum of 15 m<sup>2</sup>, whichever is higher, shall be provided as under;</p> <p>1. The refuge area shall be provided on the periphery of the floor and open to air at least on one side protected with suitable railings.</p> <p>2. Refuge area (s) shall be provided at / or immediately above 24 m and thereafter at every 15 m or so.</p> <p>e) A prominent sign bearing the words 'REFUGE AREA' shall be installed at the entry of the refuge area, having height of letters of minimum 75 mm and also containing information about the location of refuge areas on the floors above and below this floor. The same signage shall also be conspicuously located within the refuge area.</p> <p>f) Each refuge area shall be ventilated and provided with first aid box, fire extinguishers, public address speaker, fire man talk back, and adequate emergency lighting as well as drinking water facility.</p> <p>g) Refuge areas shall be approachable from the space they</p>	<p><b>Refuge area for Admin Block:-</b></p> <p>Proposed net built up area of 4<sup>th</sup> floor is 1,806.10 Sq.mtrs. / 4.00 (occupancy load) = 452 persons.</p> <p>Proposed built up area of 5<sup>th</sup> floor is 2,353.02 Sq.mtrs. / 4.00 (occupancy load) = 588 persons.</p> <p>Total 1040 persons x 0.3 Sq.mtrs./per person = 312.00 Sq.mtrs. + 1.8 Sq.mtrs for physically challenged (0.9 Sq.Mtrs. for every 200 persons)</p> <p><b>Total required refuge area is 313.80 Sq.mtrs.</b></p> <p><b>Hence proposed to provide one refuge area of 137.00 Sq.Mtrs. at 4<sup>th</sup> floor &amp; 2 refuge areas one of 82.00 Sq.Mtrs. &amp; another of 95.00 Sq.Mtrs. at 5<sup>th</sup> floor of total 314.00 Sq.Mtrs.</b></p>																											



	<p>serve by an accessible means of egress.</p> <p>h) Refuge areas shall connect to fire fighting shaft (comprising fireman's lift, lobby and staircase) without having the occupants requiring to return to the building spaces through which travel to the area of refuge occurred.</p> <p>j) The refuge area shall always be kept clear.</p> <p>No storage of combustible products and materials, electrical and mechanical equipment, etc shall be allowed in such areas.</p> <p>k) Refuge area shall be provided with adequate drainage facility to maintain efficient storm water disposal.</p> <p>m) Entire refuge area shall be provided with sprinklers.</p> <p>n) Where there is a difference in level between connected areas for horizontal exits, ramps of slope not steeper than 1 in 12 shall be provided (and steps should be avoided).</p> <p><b>NOTE</b> – Refuge area provided in excess of the requirements shall be counted towards FAR.</p>	
15	<p>Fire Command Centre.</p> <p><b>NBC-2016, Part-4 Clause 3.4.12 Fire Command Centre (FCC)</b></p> <p>a) Fire command centre shall be on the entrance floor of the building having direct access. The control room shall have the main fire alarm panel with communication system (suitable public address system) to aid floors and facilities for receiving the message from different floors.</p> <p>b) Fire command centre shall be constructed with 120 min rating walls with a fire door and shall be provided with emergency lighting. Interior finishes shall not use any flammable materials. All controls and monitoring of fire alarm systems, pressurization systems, smoke management systems shall happen from this room. Monitoring of integrated building management systems, CCTVs or any other critical parameters in building may also be from the same room.</p> <p>c) Details of all floor plans along with the details of fire fighting equipment and installations (2 sets laminated and bound) shall be maintained in fire command centre.</p> <p>d) The fire staff in charge of the fire command centre shall be responsible for the maintenance of the various services and fire fighting equipment and installations in coordination with security, electrical and civil staff of the building.</p>	<p>Proposed to provide Fire command centre at ground floor of each building.</p>
16	<p>FIRE SAFETY PLAN</p> <p><b>NBC-2016, Part-4, Annex-D, Clause 4.11 D-5 FIRE SAFETY PLAN</b></p> <p><b>D-5.1 A format for the Fire Safety Plan shall be as given in D-9.10.</b></p> <p><b>D-5.2</b> The applicable parts of the approved Fire Safety Plan shall be distributed to all tenants of the building by the building management when the Fire Safety Plan has been approved by the Fire Authority.</p> <p><b>D-5.3</b> The applicable parts of the approved Fire Safety Plan shall then be distributed by the tenants to all their employees and by the building management to all their building employees.</p> <p><b>D-5.4</b> In the event there are changes from conditions existing at the time the Fire Safety Plan for the building was approved, and the changes are such so as to require amending the Fire Safety Plan, within 30 days after such changes, an amended Fire Safety Plan shall be submitted to the fire brigade for approval.</p>	<p><b><i>FIRE SAFETY PLAN should be provide as per Clause 4.11 D-5 Fire and Life Safety of NBC 2016.</i></b></p>
	<p>Fire Officer</p> <p><b>As per clause 4.10 of Part 4 Fire and Life Safety of NBC 2016:</b></p> <p><b>4.10 Fire Officer</b></p> <p><b>4.10.1</b> A qualified Fire Officer with experience of not less than 3 years shall be appointed who will be available on the premises, for large educational complexes.</p> <p><b>4.10 Fire Officer</b></p> <p><b>4.10.1</b> A qualified Fire Officer with experience of not less than 3 years shall be appointed who will be available on residential building with height 60 m and above.</p>	<p><b><i>Fire Officer should be appointed as per clause 4.10 of Part 4 Fire and Life</i></b></p>



<p>17</p> <p><b>4.10.2</b> The Fire Officer shall,</p> <p>a) maintain the fire fighting equipment in good working condition at all times.</p> <p>b) prepare fire orders and fire operational plans and get them promulgated.</p> <p>c) impart regular training to the occupants of the buildings in the use of fire fighting equipment provided on the premises and keep them informed about the fire emergency evacuation plan.</p> <p>d) keep proper liaison with the city fire brigade.</p> <p>e) ensure that all fire precautionary measures are observed at the times.</p> <p>NOTE - Competent authority having jurisdiction may insist on compliance of the above rules in case of buildings having very large areas even if the height is less than 30 m.</p>	<p><b>Safety of NBC 2016 for the entire campus.</b></p>
<p>18</p> <p>Fire extinguishers.</p> <p><b>NBC-2016, Part-4, Table 7 (3) Fire extinguishers shall be provided for,</b></p> <p><b>Educational Building (B) &amp; Residential Building (A)</b></p> <ol style="list-style-type: none"> <li>One ABC powder extinguishers of 6 kgs. Capacity for every 8 cars at parking areas should be provided.</li> <li>One CO<sub>2</sub> extinguishers of 4.5 kgs. Capacity should be provided near the entrance to the electrical room.</li> <li>One Mechanical Foam extinguishers of 9 litres capacity &amp; one ABC powder extinguishers of 6 kgs. Capacity should be provided near the transformer.</li> <li>One Mechanical foam extinguishers of 9 litres capacity and one ABC powder extinguishers of 6 kgs. Capacity should be provided near the diesel generator.</li> <li>One CO<sub>2</sub> extinguishers of 2 kgs. Capacity should be provided inside each lift machine room.</li> <li>One Water Mist type extinguishers of 4 litres &amp; 9 litres capacity should be kept near each staircase landing at each floor.</li> </ol> <p>All the extinguishers suggested above should be with B.I.S. markings and should be located at an easily accessible position without obstructing the normal passage and maintained periodically.</p>	<p><b>As proposed Fire extinguishers at following suitable places should be provided.</b></p> <p><b>1) One ABC powder extinguishers of 6 kgs. and 9Litres capacity Portable Hand held "Water Mist &amp; CAFs" fire extinguishers – Jet &amp; spray (combination) Capacity for every 8 cars at parking areas should be provided.</b></p> <ul style="list-style-type: none"> <li>- As per IS-15683 / EN3-7 / NFPA-10 (Design &amp; Construction)</li> <li>- Suppression Technology: NFPA 750 &amp; NFPA 11</li> <li>- Minimum Lancing Distance : Jet – 30Feet or more.</li> <li>- Minimum Lancing Distance : Spray– 10Feet or more</li> <li>- Spraying Angle 60°</li> <li>- Class – A, B, LPG Fires and Live Electrical Fire below 1000Volts (Test certificate to be submitted)</li> <li>- Fire Rating A: 21A or more</li> <li>- Fire Rating B: 144B or more</li> <li>- Foam Mist / Pressurised bubbles (Adhere to vertical and Horizontal surfaces, bubbles should retain for a minimum period of 20Minutes)</li> <li>- Foam Expansion minimum 1:10 or more</li> </ul> <p><b>2) One CO<sub>2</sub> extinguishers of 4.5 kgs. Capacity should be provided near the entrance to the electrical room.</b></p> <p><b>3) One 9 Litres capacity Portable Hand held "Water Mist &amp; CAFs" fire extinguishers – Jet / spray type (Combination) and One ABC powder extinguishers of 6kgs. Capacity should be provided near transformer.</b></p> <ul style="list-style-type: none"> <li>- As per IS-15683 / EN3-7 / NFPA-10 (Design &amp; Construction)</li> <li>- Suppression Technology: NFPA 750 &amp; NFPA 11</li> <li>- Minimum Lancing Distance : Jet – 30Feet or more</li> <li>- Minimum Lancing Distance : Spray– 10Feet or more</li> <li>- Spraying Angle 60°</li> <li>- Class – A, B, LPG Fires and Live Electrical Fire below 1000Volts (Test certificate to be submitted)</li> <li>- Fire Rating A: 21A or more</li> <li>- Fire Rating B: 144B or more</li> <li>- Foam Mist / Pressurised bubbles (Adhere to vertical and Horizontal surfaces, bubbles should retain for a minimum period of 20Minutes)</li> <li>- Foam Expansion minimum 1:10 or more and one ABC powder extinguishers of 6 kgs. Capacity should be provided near the diesel generator.</li> </ul> <p><b>4) One 9Litres capacity Portable Hand held "Water Mist &amp; CAFs" fire extinguishers – Jet / spray type (Combination) and One ABC powder extinguishers of 6kgs. Capacity should be provided near the diesel generator.</b></p> <ul style="list-style-type: none"> <li>- As per IS-15683 / EN3-7 / NFPA-10 (Design &amp; Construction)</li> <li>- Suppression Technology: NFPA 750 &amp; NFPA 11</li> <li>- Minimum Lancing Distance : Jet – 30Feet or more</li> <li>- Minimum Lancing Distance : Spray– 10Feet or more</li> <li>- Spraying Angle 60°</li> <li>- Class – A, B, LPG Fires and Live Electrical Fire below 1000Volts (Test certificate to be submitted)</li> <li>- Fire Rating A: 21A or more</li> <li>- Fire Rating B: 144B or more</li> <li>- Foam Mist / Pressurised bubbles (Adhere to vertical and Horizontal surfaces, bubbles should retain for a minimum period of 20Minutes)</li> </ul>



- **Foam Expansion minimum 1:10 or more and one ABC powder extinguishers of 6 kgs. Capacity should be provided near the diesel generator.**
  - 5) One CO<sub>2</sub> extinguishers of 2 Kgs. Capacity should be provided inside each lift machine room.**
  - 6) 9Litres capacity Portable Hand held "Water Mist & CAFs" fire extinguishers – Jet / spray type (combination) should be kept in alternative staircase landing at each floor.**
  - **As per IS-15683 / EN3-7 / NFPA-10 (Design & Construction)**
  - **Suppression Technology: NFPA 750 & NFPA 11**
  - **Minimum Lancing Distance : Jet – 30Feet or more**
  - **Minimum Lancing Distance : Spray– 10Feet or more**
  - **Spraying Angle 60°**
  - **Class – A, B, LPG Fires and Live Electrical Fire below 1000Volts (Test certificate to be submitted)**
  - **Fire Rating A: 21A or more**
  - **Fire Rating B: 144B or more**
  - **Foam Mist / Pressurised bubbles (Adhere to vertical and Horizontal surfaces, bubbles should retain for a minimum period of 20Minutes)**
  - **Foam Expansion minimum 1:10 or more**
- All the extinguishers suggested above should be with B.I.S. markings and should be located at an easily accessible position without obstructing the normal passage and maintained periodically.**

**CONDITIONS:-**

1. All the fire prevention, fire fighting and evacuation measures suggested/recommended in B, C and D shall be strictly adhered to adopted.
2. Hazardous materials such as petroleum products, explosives, chemicals etc. should not be stored on any floor.
3. Refuse dumps or storage should not be permitted in any of the floors.
4. Liquefied petroleum gas should not be stored in the building except the limited quantity required for each kitchen.
5. Plan and occupancy should not be changed without informing the Fire & Emergency Services and without taking clearance.
6. The occupancy certificates should not be issued without obtaining the clearance certificate from the Fire and Emergency Services department.
7. Such reasonable changes/modifications as may be found necessary, after the building is fully constructed, will have to be agreed to be done by the builder/occupants of the building.
8. All the metal fittings of down comer system and all the extinguishers suggested above should have B.I.S markings.
9. Apart from the above the Building shall be constructed by following all the rules & conditions stipulated in Part-III & IV of NBC & local zoning regulations strictly, failing which the NOC issued will not be valid.
10. The above mentioned requirements are indicative and not exhaustive. All other requirements of National Building Code not specifically mentioned above shall also be complied with mandatorily.
11. This NOC is issued from the Fire Prevention and Fire Fighting point of view Karnataka State Fire & Emergency Services Department is not responsible for the ownership of the land, its location and other disputes, which may arise in due course.

Subject to the strict adherence to the conditions laid down as above, issue of License for the construction Mixed Occupancy that is BMS Institute of Technology & Management, Situated in Sy.Nos.53, 54, 55, 56/2, 56/3, 57/1, 115, 116/2B, 116/3, 116/3A, 116/4 & 118/2 of Avalahalli Village, Yelahanka Hobli, Doddaballapur Main Road, Bangalore., Bangalore North, BANGALORE - 560064 may please be considered.

- **All other relevant and applicable requirements as per NBC-2016 will have to be compiled with mandatorily.**



Yours faithfully,  
Director General of Police and Director,  
Karnataka Fire & Emergency Services.



Library Books

Programme Name	Number of Titles	Number of Volumes	Number of Journals Published in India	Number of Journals Published at Abroad	Number of e-Book Titles - PG	Number of e-Book Volumes - PG	Number of e-Book Titles - UG	Number of e-Book Volumes - UG	Number of e-Book Titles - Diploma	Number of e-Book Volumes - Diploma
COMPUTER APPLICATIONS	1794	7228	7	0	3500	3500	0	0	0	0
MANAGEMENT	166	690	8	0	25024	25024	0	0	0	0
ENGINEERING AND TECHNOLOGY	13087	56200	97	0	0	0	20489	20489	0	0



**BMS Institute of Technology and Management Library, Bangalore-560 064**

**List of Print Journals for the year\_2024**

SN	Title	Amount	Total Amt	Branch
1	Current Development In Artificial Intelligence	₹ 3,850	₹ 10,450	AI&ML
2	International Journal Of Applied Artificial Intelligence In Engineering	₹ 3,300		
3	International Journal Of Artificial Intelligence And Computer Research	₹ 3,300		
4	Indian Journal Of Advance In Computer and Information Engineering	₹ 3,300	₹ 65,890	ISE
5	Indian Journal Of Computer and Communication Engineering	₹ 3,300		
6	Indian Journal Of Computer Applications Research and Development	₹ 3,300		
7	Indian Journal Of Computer Engineering and Technology	₹ 3,300		
8	Indian Journal Of Information and Communication Systems	₹ 3,850		
9	Indian Journal Of Information Science and Engineering Research	₹ 3,850		
10	Indian Journal Of Information Security and Computer	₹ 3,300		
11	Indian Journal Of Information Technology and Applications	₹ 3,850		
12	Indian Journal Of Information Technology Research and Development	₹ 3,300		
13	Indian Journal Of Information Technology Review	₹ 4,840		
14	Indian Journal Of Network and Information Security	₹ 3,300		
15	Indian Journal Of Networks and Applications	₹ 3,850		
16	Journal of Advances in Computational Sciences and Information Technology	₹ 3,850		
17	Journal of Information Sciences and Application	₹ 3,850		
18	International Journal of Advanced Research in IT and Engineering	₹ 3,850		
19	International Journal of Information Technology & Engineering	₹ 3,300		
20	International Research Journal of Engineering, IT & Scientific Research	₹ 3,850		
21	Global Journal of Advanced Computer Science and Technology	₹ 3,850		



SN	Title	Amount	Total Amt	Branch
22	Indian Journal Of Advances In Wireless And Mobile Communications	₹ 3,300	₹ 24,200	ETE
23	Indian Journal Of Electronics And Communication Engineering	₹ 3,850		
24	Indian Journal Of Electronics Communication Engineering And Technology	₹ 3,850		
25	Indian Journal Of Sensors	₹ 3,850		
26	Journal Of Telecommunication Switching Systems And Networks	₹ 4,950		
27	Signals And Telecommunication Journal	₹ 4,400		
28	Journal of Indian Water works Association	₹ 2,750	₹ 21,650	CIV
29	Indian Society of Earthquake Technology	₹ 2,200		
30	Journal of Construction Management	₹ 3,300		
31	Indian Journal of Transport Management	₹ 1,100		
32	Journal of Structural Engineering	₹ 3,500		
33	Journal Of The Institution Of Engineers-Series A	₹ 8,800		
34	Indian Institute of Science	₹ 9,900	₹ 22,770	MISC
35	Science Technology and Society	₹ 12,870		
36	Indian Journal of Chemistry-A & B	₹ 8,096	₹ 28,278	Basic Science
37	Indian Journal of Pure and Applied Physics	₹ 5,632		
38	Resonance	₹ 2,200		
39	Indian Journal of Physics	₹ 9,350		
40	Current Science	₹ 3,000		
41	INDIAN JOURNAL OF INFORMATION TECHNOLOGY & KNOWLEDGE MANAGEMENT	₹ 3,300	₹ 22,550	CS&RS
42	INDIAN JOURNAL OF BUSINESS & SYSTEM RESEARCH	₹ 3,850		
43	INDIAN JOURNAL OF BUSINESS AND INFORMATION studies	₹ 3,850		



SN	Title	Amount	Total Amt	Branch
44	INDIAN JOURNAL OF COMPUTER SCIENCE & MANAGEMENT SYSTEMS	₹ 3,300	₹ 22,550	CSE
45	INDIAN JOURNAL OF ENTERPRISE NETWORK MANAGEMENT	₹ 3,850		
46	INDIAN JOURNAL OF INFORMATION SYSTEM & E-BUSINESS MANAGEMENT	₹ 4,400		
47	Central Power Research Institute	₹ 1,100	₹ 19,800	EEE
48	Indian Journal Of Electrical Engineering	₹ 3,850		
49	Indian Journal Of Electronic and Electric Engineering	₹ 3,850		
50	Indian Journal Of Power and Energy Systems Engineering	₹ 3,850		
51	Indian Journal Of Power Engineering Technology	₹ 3,850		
52	Journal Of Energy Storage and Conversion	₹ 3,300		
53	IETE Journal Of Research	₹ 5,363	₹ 92,373	CSE
54	Indian Journal Of Information Technology	₹ 11,000		
55	IOSR Journal Of Computer Engineering	₹ 3,960		
56	Journal Of Intelligent Computing	₹ 4,840		
57	Journal Of Internet Research	₹ 7,700		
58	Journal Of Mobile Computing And Applications	₹ 3,960		
59	Journal Of Software Engineering	₹ 7,700		
60	Journal Of Software Quality Assurance	₹ 7,700		
61	Journal Of Software Testing	₹ 7,700		
62	Indian Journal Of Advances In Knowledge Engineering And Computer Science	₹ 3,300		
63	Indian Journal Of Applied Computational Intelligence And Soft Computing	₹ 3,850		
64	Indian Journal Of Computer And Mathematical Sciences	₹ 3,300		
65	Indian Journal Of Computer Science And Engineering	₹ 3,850		



SN	Title	Amount	Total Amt	Branch
66	Indian Journal Of Computer Systems, Networks, And Communiations	₹ 3,850		
67	Indian Journal Of Computing And Software Technology	₹ 3,850		
68	Indian Journal Of Mobile Computing	₹ 3,850		
69	Journal Of Hybrid Computing Research	₹ 3,300		
70	Journal Of Neural Computing Systems	₹ 3,300		
71	Indian Journal Of Electronic Networks Devices and Fields	₹ 3,850	₹ 90,310	ECE
72	Indian Journal Of Electronics and Communications	₹ 3,850		
73	Indian Journal Of Electronics Engineering Research and Technology	₹ 3,850		
74	Indian Journal Of Microwave Science and Technology	₹ 3,850		
75	Indian Journal Of Robotics Engineering	₹ 3,300		
76	Indian Journal Of VLSI Design	₹ 3,850		
77	Indian Journal Of Wireless Communication and Simulation	₹ 3,850		
78	Indian Journal Of Wireless Networks and Communications	₹ 3,850		
79	IOSR Journal Of Electronics and Communication	₹ 3,960		
80	Journal Of Communication Technology	₹ 7,700		
81	Journal Of Digital Signal Processing	₹ 7,700		
82	Journal Of Electronics Circuits	₹ 7,700		
83	Journal Of Power Electronics	₹ 7,700		
84	Journal Of Power System Engineering	₹ 7,700		
85	Journal Of The Institution Of Engineers:Series- B	₹ 9,900		
86	Journal Of Wireless Communication	₹ 7,700		
87	Advances In Computational Science And Technology	₹ 3,300		



SN	Title	Amount	Total Amt	Branch
88	Indian Journal Of Computer And Digital Technique	₹ 3,300	₹ 20,900	MTech_CSE
89	Indian Journal Of Computer Graphics And Visualization	₹ 3,850		
90	Indian Journal Of Computer Simulation	₹ 3,300		
91	Indian Journal Of Wireless Communication And Network	₹ 3,850		
92	Journal Of Advanced Research In Computer Engineering	₹ 3,300		
93	IIMB Management Review	₹ 2,090	₹ 39,534	MBA
94	Harvard Business Review	₹ 10,230		
95	Indian journal of Finance	₹ 4,180		
96	Indian Journal of Marketing	₹ 4,180		
97	Journal of Entrepreneurship	₹ 11,154		
98	IUP Journal of Applied Finance	₹ 1,100		
99	Finance India	₹ 5,500		
100	Journal of Organizational behaviour	₹ 1,100	₹ 33,000	MECH
101	Indian Journal Of Advances In Automobile Engineering	₹ 3,300		
102	Journal Of Machine Design	₹ 7,700		
103	Journal Of Mechanical Engineering And Automation	₹ 3,300		
104	Indian Foundry Journal	₹ 3,300		
105	Journal Of The Institution Of Engineers:Series C	₹ 9,900		
106	Journal Of The Institution Of Engineers:Series D	₹ 5,500		
107	Advances In India Software Engineer	₹ 3,300		
108	Indian Journal Of Computing And High Speed Networks	₹ 3,300		
109	Indian Journal Of Image Processing And Technique	₹ 3,300		



SN	Title	Amount	Total Amt	Branch
110	Indian Journal Of Mathematical Modeling And Applied Computing	₹ 3,300	₹ 26,290	MCA
111	Journal Of Computer Science And Applications	₹ 3,300		
112	Journal Of Information Security Research	₹ 4,840		
113	Journal of artificial Intelligence Research	₹ 4,950		
Total		₹ 5,17,995	₹ 5,17,995	

Dept	No. of Journals	Amt.
CSE	18	₹ 92,373
CIV	6	₹ 21,650
ECE	16	₹ 90,310
EEE	6	₹ 19,800
ISE	18	₹ 65,890
ETE	6	₹ 24,200
CS&BS	6	₹ 22,550
MECH	6	₹ 33,000
AI&ML	3	₹ 10,450
MCA	7	₹ 26,290
MBA	8	₹ 39,534
MTech_CSE	6	₹ 20,900
MISC	2	₹ 22,770
Basic Science	5	₹ 28,278
Total	113	₹ 5,17,995





Ministry of Education  
Government of India



Indian Institute of Technology  
Kharagpur



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**Date of Registration:** 30/03/2021

**Validity Extended Upto:** 30/03/2025

**Prof. K. P. Sinhamahapatra**  
Joint Principal Investigator  
National Digital Library of India Project  
**Chairman**  
Central Library IIT Kharagpur

**Dr. B. Sutradhar**  
Joint Principal Investigator  
National Digital Library of India Project  
**Librarian**  
Central Library IIT Kharagpur



Laboratory Details

Programme Name	Department	Level	Course	Is it Research Lab for PG Course?	Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	ADE	CRO, Function Generators, Logics Analyser	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	No	AI&ML LAB	iNTEL cORE - i7 Computers	No	BSN Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	ANALOG & DIGITAL COMMUNICATION LAB	CRO, Power Supply DPSK & QPSK Kit, Linear IC tester, Line coding kit, OFC Kit	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	ANALOG ELECTRONIC	Cathode ray Oscilloscope signal generator (3 mhz), DC Power Supply (multi Ch) Fixed power supply	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATION ENGINEERING	No	ANALOG ELECTRONICS LAB-TE	Cathode Ray Oscilloscope, Signal Generator(3mhz), Dc Power Supply(Multi Ch) Fixed Power Supply, Digi	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	APPLIED ENGINEERING GEOLOGY LAB	Minerals, Rocks, Dip And Strike Models, Folds models, Faults models,Unconfirmity models, Aimil Deep	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No	BASIC ELECTRICAL LAB	Auto transformer OC.SC.test panels, star/delta connection test panel etc	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	BASIC MATERIAL TESTING LAB	Tile Tesing Machine, Crashing Machines, Flexural tesing Machine,	No	LAB Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	CAD LAB	Intel I7- 8700(8th Gen) CPU 32GHz 16GB ram , 512 SSD, 1 TB hard disk , 2GB Nvidia Graphics card, m	No	BSN Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	CAED LAB	As per norms	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	CAMA LAB	AS PER NORMS	No	ACADEMIC BLOCK	BLOCK I	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	CAMD LAB	AS PER NORMS	No	ACADEMIC BLOCK	BLOCK I	Laboratory



Programme Name	Department	Level	Course	Is it Research Lab for PG Course?	Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
ENGINEERING AND TECHNOLOGY	FIRST YEAR/OTHER	POST GRADUATE		Yes	CAMR LAB	FIIR, Uv Visible, Roman Spectrometer. Dielectric, contt, Furrances	No	BSN Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATION ENGINEERING	No	CCN LAB	12 switch (24 port) cabinet mount & lan conection	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	CCP LAB	Intel (R) core (TM) i7-CPU, 3.60 GH3 - Computers	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	CIM & AUTOMATION	As per norms	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	CNC MACHINE SHOP	As per norms	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	CONCRETE LAB	"Compression testing machine (3000kN) Vicat Apparatus, Auto Clave Apparatus,Vibration Machine, Vibra	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No	CONTROL SYSTEM LAB & CIRCUIT SIMULATION	OSCILLOSCOPE SIGNAL GENERATORS TESTING KITS	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No	D C MACHINE LAB/TIM LAB ELECTRICAL MACHINES LAB 1&2	DC shut generator panel, DC shut motor with panel, Swim burne's test kit	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	No	DATA SCIENCE LAB	Intel Core-i7 Computers	No	BSN Block	block II	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	DBMS / ADA LAB / NETWORK LAB / MICROPROCESSOR LAB	Intel (R) core Quad-CPU-2.83 - Computers	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	INFORMATION TECHNOLOGY	UNDER GRADUATE	INFORMATION SCIENCE AND ENGINEERING	No	DBMS LAB, MACHINE LEARNING LAB, SOFTWARE TESTING LAB, WEB LAB, PROJECT WORK LAB TIMBERNERS LEE LAB	Computers, Antivirus s/w, UPS, Patch Panel, Switches	No	BS Narayan Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	INFORMATION TECHNOLOGY	UNDER GRADUATE	INFORMATION SCIENCE AND ENGINEERING	No	DENNIS LITCHI LAB 211 (2ND FLR)	Computers (35), patch Pond DC Lab, DS Lab.	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	DESIGN LAB	As per norms	No	Lab Block	Block III	Laboratory



Programme Name	Department	Level	Course	Is it Research Lab for PG Course?		Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No		DIGITAL COMMUNICATION LAB	Communication Kit (PAM, PWM, PPM), Fiber optic communication trainer kit, Microwave test bench, Micr	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATION ENGINEERING	No		DIGITAL ELECTRONICS LAB-TE	Digital IC Trainer Kits IC tester	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No		DIGITAL SIGNAL PROCESSING LAB	Projector, smart board, digital display system, DSP starter kit MAT lab software, simulink	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No		DIGITAL SYSTEM DESIGN LAB	Digital IC trainer kits, IC tester	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No		EC LAB	As per norms	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No		ELECTRONIC DEVICES & INSTRUMENTATION LAB	CRO, Dual power supply, Single power supply, function generator, MM, Multi output power supply, DSO	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	FIRST YEAR/OTHER	UNDER GRADUATE		No		ENGINEERING CHEMISTRY LAB	Conductivity Meter, Ph Meter, Potentio Meter, fume Cupboard, Hot Air Oven, Colori Meter,	No	BS Narayan Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	FIRST YEAR/OTHER	UNDER GRADUATE		No		ENGINEERING PHYSICS LAB I	Spectrometer, Travelling Microscope B H curve setup, zener, No LCR, Transistor kit, Ultrasonic interfer		BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	FIRST YEAR/OTHER	UNDER GRADUATE		No		ENGINEERING PHYSICS LAB II	Laser Diffraction Optical Fiber Expt Kit MI Expt Kit Spring Contant Kit	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No		ENVIRONMENTAL ENGG LAB	Hot air oven,Muffle furnace, Digital pH meter with electrode, Electronic Balance, Digital photoelect	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	Yes		F&F LAB	As per norms	No	Workshop	Block V	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No		FM LAB	As per norms	No	Lab Block	Block III	Laboratory
ENGINEERING AND	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No		GEOTECHNICAL ENGG LAB	Hydrometer with glass measuring cylinder,	No	Lab Block	Block III	Laboratory



Programme Name	Department	Level	Course	Is it Research Lab for PG Course?	Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
TECHNOLOGY						Heavy Compaction Test Apparatus, Hydraulic Ejector Motrari				
ENGINEERING AND TECHNOLOGY	INFORMATION TECHNOLOGY	UNDER GRADUATE	INFORMATION SCIENCE AND ENGINEERING	No	GUIDO VAN ROSSUM LAB	Computers, Patch pavel swithes UPS Network switches Mobile application lab, OOP using JAVA lab, Proj	No	B S Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No	HDL LAB - TE	Computers, server, UPS 20 KVA with, Lead Acid 12V/ 80aH batteries, Projector, FPGA trainer kit & in	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	HDL LAB VIVADO SOFTWARE	Nexys boards HDL kits, Interfacing kits zyna boards	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	HHM LAB	Pelton turbine , Kaplan turbine, Hydrology bench and rainfall , Masonry hydraulic flume (10m):	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	HIGHWAY MATERIALS LAB	Crushing Apparatus, Impact Test Apparatus,Cylindrial mould with tamping rod,Flash & Fire Point ,Ring	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	HMT LAB	As per norms	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	No	INDUSTRY ATTACHED ENGINE LAB	As per norms	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	No	IOT LAB	CRO, Function Generators, Logic Analyzer, Jetson Cards Monitors	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	JOHN MCARTHY LAB	40 PC	No	BS Narayan Block	Block II	Laboratory
COMPUTER APPLICATIONS	MASTER OF COMPUTER APPLICATIONS	POST GRADUATE	MCA	No	KALPANA CHAWLA LAB	HP Intel Core i5-20, HP Intel Core i7-20, Total of 40 High end Computers with Structured LAN & Furni	No	LAB Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No	LD LAB	Trainer kits, IC's IC lesterset, patch cards, etc	No	Academic Block	Block I	Laboratory



Programme Name		Department	Level	Course	Is it Research Lab for PG Course?	Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No		LIC & COMMUNICATION LAB	CRO, Powe supply multi output power supply function generator decade resistance box (DRB) Decade cap	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No		LIC & COMMUNICATION LAB AC + LIC LAB + ANALOG CIRCUITS LAB	CRO, Power supply, Multi output power supply, function generator, Decade resistance box (DRB), Decad	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	INFORMATION TECHNOLOGY	UNDER GRADUATE	INFORMATION SCIENCE AND ENGINEERING	No		LINUS TORBOLDS LAB	Computers, Patch panel, Switches, UPS, Networks switches, CPL, DS Lab, Network lab	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	Yes		M&M LAB	As per norms	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	POST GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No		M.TECH - IOT LAB	IOT Kits + intel i7 systems + Microprocessor equipments	No	BS Narayan Block	Block II	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	Yes		M/C SHOP	As per norms	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No		MICRO-CONTROLLER LAB	Nvoton Arm Controller kits with Accessories	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No		MICROCONTROLLER LAB	Computers, server microcontroller kits interfacing kits (8 types) & MSP430 microcontrollers	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No		MICROCONTROLLERS LAB DSP, C-PROG, C++	Microcontroller Kits Interfacing Modules, Computers	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No		MICROPROCESSOR LAB 1	Microprocessor 8086 kits, PCI Add on cords, No 7 type interfacing kits	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No		MICROWAVE & ANTENNA LAB	CRO, MW & A equipments, MW&A equipments-ledger PG 12-19, 10kva ups microwave test bench micro	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	MECHANICAL ENGINEERING	UNDER GRADUATE	MECHANICAL ENGINEERING	Yes		MT LAB	As per norms	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS	No		PE & OP AMP LIC LAB AEC LAB	Static characteristics 06 IGBT MOSFET,	No	Academic Block	Block I	Laboratory



Programme Name	Department	Level	Course	Is it Research Lab for PG Course?	Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name	Building Number	Type
TECHNOLOGY	ENGINEERING		ENGINEERING			SCR modules, AC voltage controller, Investor chopper, Sig etc				
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	POWER ELECTRONICS LAB	Experminetal Modules, Trigger circuits, DC motor, AC motor, Universal motor PC-7	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING	No	PROJECT/R&D LAB	Computers, Texas Instruments Innovation Centre, Software Defined Radio, IoT Kits, Network Switch & N	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No	PSS / CAED LAB	20 kva ups with batteries, Computer Systems-24 Nos.	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	R&D LAB	Wi-comm. T, Ansys Software, My DAC, My RIO PC-10, Spectrum Analyzer, VNA, all in one bio sensing R&D	No	Academic Block	Block I	Laboratory
MANAGEMENT	MASTERS IN BUSINESS ADMINISTRATION	POST GRADUATE	MBA	No	RATAN TATA LAB	39 computer systems and one 76 inch touch enabled computer display.	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRICAL AND ELECTRONICS ENGINEERING	UNDER GRADUATE	ELECTRICAL AND ELECTRONICS ENGINEERING	No	RELAY & HV LAB	70KVAC/100 KVDC test unit, 150 kv, 225j, 5 stage impulse generator HV Driver Negative sequence UU/OU	No	Academic Block	Block I	Laboratory
COMPUTER APPLICATIONS	MASTER OF COMPUTER APPLICATIONS	POST GRADUATE	MCA	No	SAVITRIBAI PHULE LAB	Integrated Computer Lab with structured LAN and Furniture.	No	LAB Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	SHANKUNTALA DEVI CMPUTER LAB 1 & 2 DAE LAB, DDCO LAB	Intel (R) - Core 7 + 8700 processor - Computer	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	SP LAB	DSP kits, Computer Matlab Software PC-21, Lab view	No	Academic Block	Block I	Laboratory
ENGINEERING AND TECHNOLOGY	CIVIL ENGINEERING	UNDER GRADUATE	CIVIL ENGINEERING	No	SURVEY LAB	Electronic Total station, vernier transit theodolite, dumpy level, auto level, tilting level, precis	No	Lab Block	Block III	Laboratory
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	SYSTEM PROGRAMMING LAB	Intel Core i7 - 9700 CPU, 30H3, 16GB RAM systems	No	BS Narayan Block	Block II	Laboratory



Programme Name	Department	Level	Course	Is it Research Lab for PG Course?	Name of the Laboratory	Lab / Major Equipments	Apply for Site Change	Building Name		Building Number	Type
ENGINEERING AND TECHNOLOGY	ELECTRONICS AND COMMUNICATIONS ENGINEERING	UNDER GRADUATE	ELECTRONICS AND COMMUNICATION ENGINEERING	No	VLSI LAB	VLSI software, Computers PC-20	No	Academic Block	Block I	Laboratory	
ENGINEERING AND TECHNOLOGY	COMPUTER SCIENCE AND ENGINEERING	UNDER GRADUATE	COMPUTER SCIENCE AND ENGINEERING	No	WEB/SYSTEMS PROGRAMMING LABORATORY	Intel core i7 - 4790 CPU, 3.60 GH3 - Systems	No	BS Narayan Block	Block II	Laboratory	



**BMS Institute of Technology and Management**(Autonomous under  
VTU Belgaum)  
Yelahanka, Bangalore- 560064.

**Students' participation in National/International IDEATHON/Hackathons**

**Total Financial Assistance given by College: 11,09,088/-**

**Total Prize amount: 22,41,700/-**

**Total Pre-Incubates Fund Received: 28,00,000/-**

Sl. No	Title	Number of participants	Prize (if any) in rupees (details attached as annexure)	Financial Assistance	Organized by	Date
1	SIH Internal Hackathon	89	-	13 teams	Innovation Centre, BMSIT&M	06.4.2022 12.04.2022
2	SIH National Level Hackathon	156 (26 teams)	1,00,000 (Team Nounce-1st place) 50,000 (Code 18- 1st place split with other team) 75,000 (1st place split with other team)	25,000 (3 teams)	IES college, Bhopal. Excel engineering college,Erode. BITS, Ranchi. (Ministry of Education)	26.08.2022 27.08.2022
3	State level project exhibition	3	Rs. 50,000 /- 1 <sup>st</sup> Place (Team Autonomous underwater vehicle for seafloor mapping)	-	VTU	01.08.2022
4	NPCI block chain Hackathon		15 lakhs	-	Inter-Institutional Inclusive Innovations Centre	
5	"IDE Bootcamp organized by MIC & AICTE from 22-26 June 2023". "Global Innovation Competition at CAPE Institute of Technology, Kanyakumari" on 15- 17 June.	9 (4 Teams)	1. BAGUSK Team 2. Moving lasers for CT Simulation Team 3. DELOAI Team 4: DostBin Team	17,500 / -	NITTR Chennai NITTR Chennai IIT Guwahati Cape University Kanyakumari	22-26 June 23 15-17 June 23



6	Faculty-driven product-oriented projects	8	Prof. Dwarakanath G V – MCA Dr. Seema Singh - ETE Dr. Raghunandan G H - ETE	1,01,500 (3 teams)	Innovation Centre, BMSIT&M	26.04.2022 17.01.2023
7	MSME Hackathon	7		NIL	Innovation Centre, BMSIT&M	21.12.2022
8	National Startup reverse pitchfest	120 (40 teams)	<b>Rs. 3,200/-</b> 1 <sup>st</sup> Prize 1500 / - (Team BMS) Shri Adithya M and Team – ISE Dept 2 <sup>nd</sup> Prize 1000 / - (Predators) Raghav Kumar Jha - ISE Dept 3 <sup>rd</sup> Prize 700 / - (Titans) - Devanshee Sharma and Team – CSE Dept		Innovation Centre, BMSIT&M	24.12.2023
9	YUKTI Innovation Challenge 2023, <a href="https://yukti.mic.gov.in/">https://yukti.mic.gov.in/</a>	160 teams		NIL	Ministry of Education	Throughout the year
10	KAVACH-2023, <a href="https://kavach.mic.gov.in/">https://kavach.mic.gov.in/</a>	20		NIL	Ministry of Education	30.03.2023
11	National Level Project Competition	32	1,00,000 (1 team) Dostbin	Rs 8,000/- (Rs 1000/- each for 8 teams) 13 teams participated	Ramaiah Institute of Technology	20.04.2023
12	SEEDBRAINS 2.0	3	50,000 (1 Team) Dostbin	NIL 05 teams participated	Cambridge Institute of Technology,	
13	Faculty-driven product-oriented projects Phase 2	2	Dr. K. Suresh Kumar – Chemistry Rs. 15000/- Naked Eye Based Seafood Freshness, Spoilage & Adulteration Monitoring System” Prof. Nirupama B. Khande – MCA Smart Perfume Dispenser in Restroom Rs. 15000/-	30, 000 (2 Teams)	Innovation Centre, BMSIT&M	21.07.2023
14	India Startup Festival 2023	4	25,000 (1 Team) Dostbin	NIL	TAL Transformers	6.08.2023



15	Pre-Incubate	4		2,45,000 / -	Dostbin Solutions Pvt Ltd.	22.11.2023
16	BICEP Logo competition	15	Rs. 3000 / - Mehak and Team	NIL	Innovation Centre, BMSIT&M	06.01.2024
17	FKCCI Manthan 2023		10,000/- (1 Team) Dostbin	Rs 3,000/- (Rs 1000/- each for 3 teams) 3 teams participated	Sir M V Auditorium FKCCI	20.09.2023
18	Indian Kart Race	1	5000/-	Rs 2,87,500 / -	Buddh International Circuit, Noida	30.10.2023
19	Code red 24hrs Hackathon	15	Rs. 16000/- Team ELITE		E-cell BMSIT&M	13.01.2024 to 14.01.2024
20	Drone Workshop	1	-	7099/-	BICEP	20.01.2024 to 23.01.2024
21	ISBR Business School competition	1	Rs. 25,000/- (1 <sup>st</sup> Prize) Dostbin	-	ISBR Business School	10.02.2024
22	Anveshana National Level Competition	25	Rs. 25000 3 <sup>rd</sup> prize Dostbin 25000/- Consolation prize for other teams	-	Incubation Centre BMSIT&M	23.02.2024
23	Elevate Call – 2	1	23,00,000/-	-	Dostbin Solutions Pvt Ltd. Karnataka State grant in aid	07.03.2024
24	KPIT SPARKLE 2024 Finale	1	-	22816 students 6083 Faculty	PUNE	05.03.2024 07.03.2024
25	Faculty Driven Project Phase – 3	5	<ul style="list-style-type: none"> <li>Dr. Ravichandra K R, Dept of Mechanical Rs. 50,000/- “Robotic Aerial and Planetary Terrain Operation Rover” (RAPTOR)</li> <li>Dr. Vijayalakshmi G V and Prof. Chandraprabha R, Dept of ECE Rs. 25,000/- “Smart footwear system for</li> </ul>	Rs. 2,41,345/- (5 Teams)	BMSIT&M	16.03.2024



			<p>visually impaired community”</p> <ul style="list-style-type: none"> <li>• Dr. Dhanalakshmi B K and Dr. Lakshmi B N, Dept of CSE Rs. 15,000/- “Crab Style Wheelchair”</li> <li>• Prof. Shilpa Hiremath, Dept ECE Rs. 8,000 “Solar Power Floating Waste Cleaner for Small Water Bodies” /-</li> <li>• Dr. Rashmi N, Dept of ECE Rs. 40,000/- “Ultrasonic Parametric Acoustic Array (USPA)”</li> </ul>			
26	<b>Carbon Zero Challenge 4.0 All India Eco-innovation and Entrepreneurship contest</b>	1	Dostbin Rs. 5,00,000/- Seed Fund	-	IIT madras	25.04.2024
27	Control: SIMULINK & IoT Challenge	10	<ul style="list-style-type: none"> <li>• 1st Prize: Team - Baljeet Kumar Patel, Jatin Sharma, Kulajeet Barman, Saksham Agarwal and Simma Leeladithya. Rs. 3000/-</li> <li>• 2nd Prize: Team - Alan Biju, Ashil Jermine George, Akshat Jaiswal, Anish Anand Pulsay, A Nitish Rs. 2000/-</li> <li>• 3rd Prize: Team - Chiranthan Gangadharappa, Deepak Suresh, B. Kavin, B. Mohith. Rs. 1000/-</li> </ul>	-	Innovation Cell, BMSIT&M	19.04.2024 and 20.04.2024
28	<b>Start Up Premier league 2.0</b>	25	<p>Rs. 10000/-</p> <ul style="list-style-type: none"> <li>• 1st prize: Team Mandalorians: Prekshak Sai G H and team (ETE Dept) Rs. 5,000/-</li> <li>• 2nd Prize: Team 2GB: Samarth Vashisht and team (AIML Dept) Rs. 3,000/-</li> <li>• 3rd Prize: Team IdeaFactory: Soumit Das and team (ECE Dept) Rs. 2,000/-</li> </ul>		Ecell BMSIT&M	14.05.2024
29	<b>Sristi Innovation Challenge</b>	15	Rs. 48000/- Prize Money and 50000/-	16,900/- supported for registration	Atria Institute of Technology	24.05.2024 to 26.05.2024



30	<b>Innovation Gauntlet - Squid Game Edition</b>	15	<ul style="list-style-type: none"> <li>1st prize Rs 5,000/- Sai Chetana Reddy NS, Rakshita M Ali, Sakshi Nittukar, Srushti Shingri CSE Dept</li> <li>2nd prize Rs. 3,000/- Sarvesh Patil, Samarth Joshi, Tanav Shivkumar, and Samarth Vasisht AIML Dept</li> <li>3rd place Rs. 2,000/- Kritesh Yadav, Mayur, Anish S Land, and Aditya Raj AIML &amp; CSE Dept</li> <li>Consolation Rs. 1,000/- Shankar Reddy, Tharun Susri, and Mrinal Midha. ETE Dept</li> </ul>	-	Innovation Cell BMSIT&M	25.06.2024
31	Summer of Projects	20	<ul style="list-style-type: none"> <li>4500/- 1st prize Rs 2,000/- Alan Biju, Harshitha K V, Shruthi A ECE Dept</li> <li>2nd prize Rs.1,000/- Keerthi Narayan M V, Ajay D Bhat, Sri Srujan Hari T, Aniruddh M ISE, EEE &amp; ECE Dept</li> <li>Consolation prize Rs. 1,500/- Hemanth and Alan Biju (active participants) EEE &amp; ECE</li> </ul>	-	IEEE- BICEP, BMSIT& M	29.06.2024
32	<b>ELCIA Tech Summit</b>	1	-	Rs. 9000	IIT banglore	6 <sup>th</sup> July to 25 <sup>th</sup> July 2024
33	<b>Manthan Business plan competition</b>	1	Dostbin Rs. 50,000/-	-	FKCCI, Bengaluru	11.07.2024
34	<b>Faculty Driven Product-Oriented Project Pharse 3 and Phase 4</b>	4	<ol style="list-style-type: none"> <li>Dr. Ravichandra K R, Dept of Mechanical Engineering Project Tittled “Robotic areal and planetary operational rover” (RAPTOR) Rs. 50,000/-</li> <li>Dr. Vijayalakshmi and, Dept of Electronics and Communication Engineering Project Tittled “Smart footwear system for visually impaired community” Rs. 10,000/-</li> <li>Prof. Shilpa Hiremath, Dept of</li> </ol>	RS.63345/-for phase3 Rs. 25000/- for Phase 4	BMSIT&M	12.09.2024



			<p>Electronics and Communication Engineering Project Titled “Solar power floating waste cleaner for small water bodies” Rs. 3,345/-</p> <p>Dr. Ambika G N, Department of Computer Science and Engineering Project Titled “Autonomous Voice controlled Arm Robot (AVCAR)” Rs. 25,000/- 4th Series of faculty driven Project 1st phase amount disbursed 4.</p>			
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1. The event started at 10:30 AM on 6th of April. 16 teams comprising students of about 35, participated with various themes and problem statements proposed by industries, ministries and organizations for SIH 2022. The jury included internal and external members. Dr. Saneesh Cleatus T, Associate Professor, ECE Department, BMSIT&M, Mrs. Shruthi J, Assistant Professor, CSE Department, BMSIT&M were Internal



scrutiny members. Internal Idea presentation for higher semesters was held on 12th April 2022. About 19 teams comprising 65 students participated. The teams chose the problem statements given by SIH and a couple of them were student innovations. The jury included internal and external members. Dr. Saneesh Cleatus T, Associate Professor, ECE Department, BMSIT&M, Mrs. Shruthi J, Assistant Professor, CSE Department, BMSIT&M were Internal scrutiny members. Mr. Praveen A L, Founder & CEO, DigipixTechnologies



was the external jury member. The Principal, Dr. Mohan Babu G N was the chairperson of the event. He motivated students to pursue innovative ideas on campus and provided insight on entrepreneurial journeys. Dr. Seema Singh, Dean External Relations addressed the gathering and assured to fund the good ideas to prototype level and then to product level. She also motivated students to build products which are useful for society

2. Innovation centre shortlisted about 26 teams from “Anveshana- Idea competition 2022” (Internal-Smart India Hackathon 2022) and nominated all the teams to Smart India Hackathon 2022. 3 teams among the 26 teams were selected for the grand finale of SIH 2020 at various nodal centres based on the category of innovation. Ms. Shama H M was the SPOC of the Smart India Hackathon 2022 from BMSIT&M.

**“Team Nonce”** from 6th Sem, CSE have won the first place and been awarded sum of Rs.1,00,000 in the category of “Innovation using Cybersecurity and Blockchain” for the project “Blood registry using blockchain” at IES college, Bhopal.





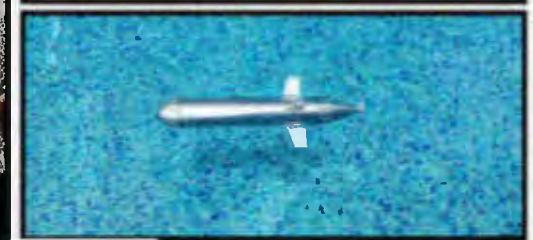


“Code\_18” from 4th Sem, ISE have won the first place which was split with the other team, hence been awarded sum of Rs. 50,000 in the category of “Smart Education” for the project “Bringing the power of AI for the aid of teachers in classroom” at Excel engineering college, Erode.

**"Infinite Loop"** from the 6th semester of the Electrical and Electronics Engineering (EEE) program, achieved a remarkable feat by securing the prestigious 1st runner-up position in the highly competitive "IOT and Electronics" category at the esteemed BITS, Ranchi competition. Their groundbreaking invention, the "Tongue Controlled Wheelchair," impressed the judges and earned them a well-deserved cash prize of Rs. 75,000.

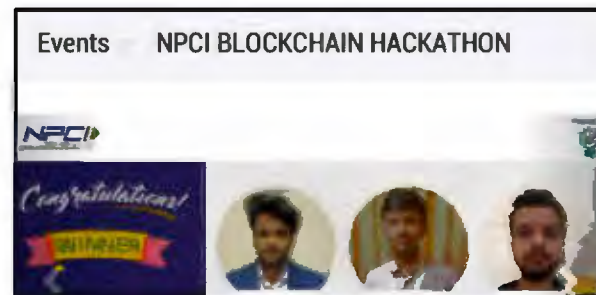


- Project titled, "Autonomous underwater vehicle for seafloor mapping" This project has won first place in Anveshana- Idea competition organized by Innovation Centre, BMSIT&M. The project offers a novel and cost-effective method of traversing ocean and sea water bodies and operating autonomously without human intervention for extended periods of time. The vehicle is equipped with a thruster and a ballast unit, which allow it to travel and cover a big area. This project's huge scope of applicability makes it a one-of-a-kind opportunity. With minor modifications in the frequency of the onboard sonar sensor, the project can be utilized for a variety of objectives such as coastline protection, sea floor study, and underwater pipeline inspection for the oil and gas industry. Due to the density of the water, underwater travel and communication are extremely difficult. Signals propagate very slowly underwater, making distant communication impossible, necessitating research into Autonomous Underwater Vehicles. For reference, a signal takes around 2.5 seconds to reach the moon and then back to Earth, but sending a single signal to Challenger Deep takes 10 seconds (The deepest point on Earth)





4. The NPCI (National Payments Corporation of India) Blockchain Hackathon, organized by the Inter-Institutional Inclusive Innovations Centre, witnessed a remarkable achievement by a team led by Mr. Divya Kalash (USN: 1BY19IS055) from the Department of Information Science and Engineering (ISE), 7th semester. Their outstanding proposal titled "Transparency in Carbon Credits by Automating Data Management Using Blockchain" secured the prestigious first prize, awarding them INR 15 lakh in February 2023.



5. BICEP Sponsored 3 Students group to attend “*IDE Bootcamp organized by MIC & AICTE from 22-26 June 2023*”.

Sl No	Team Name & Student Name	Place of Competition
1	<b>BAGUSK:</b> Prajwal V Dev (1BY21CV015) Manoj.G(1BY21CV010)	NITTR Chennai
2	<b>Moving lasers for CT Simulation:</b> Tejas ISE(1BY21IS182)	NITTR Chennai
3	<b>DELOAI:</b> Lokesh(1BY20IS073) Jitendriyadeep(1BY20IS065)	IIT Guwahati



BICEP Sponsored 2 Students group to attend “*Global Innovation Competition at CAPE Institute of Technology, Kanyakumari*” on 15- 17 June.



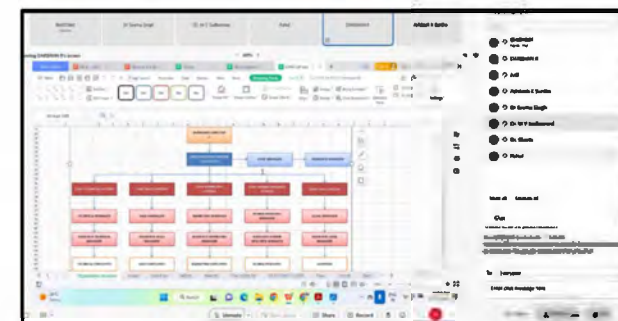
1	<b>BAGUSK:</b> Prajwal V Dev (1BY21CV015) Manoj.G(1BY21CV010)
2	<b>DostBin:</b> R Venkatesh(1BY21ET033) Narasimha Murthy(1BY21ET021) Shumail Ali Khan(1BY21ET043)

6. Faculty- driven product-oriented projects is a Bi-annual event by Innovation Centre. This is the 2nd bi-annual presentation which was held on 17.01.2023. The 1st bi-annual presentation was held on 17.05.2022 and the first phase of funds (among 3 phases-30%, 30%, 40%) were released for 3 projects. About 6 faculty teams presented the projects where 2 teams were approved for the second phase of funding and 2 new teams for the first phase of funding.

Details of faculty projects and the funds released					
Sl. No.	Year	Main Faculty in charge	Department	Title	Funds Allocate in ₹
1	2022-2023	Mr. Dwarakanath G V	Master of Computer Applications	Pet Care System	15,500
2	2022-2023	Dr. Seema Singh	Electronics And Telecommunication Engineering	Home based Compost machine with extendable ECU	38,000
3	2022-2023	Dr. Raghunandan G H	Electronics And Telecommunication Engineering	Raitha mithra	50,000



7. BMSIT&M has been the **Hosting Institute/Business Incubator (HI/BI)** since August 2019. We received about 5 ideas during December 2022 to incubate their ideas at BICEP, BMSIT&M. **MSME hackathon** held online on 21.12.2022. The Ideas go through 3 levels of evaluation process to be funded under MSME's grants up to 15 lakh rupees. Below are the application details who chose BMSIT&M as the Hosting Institution (HI). Rakesh Rathnakar Theertha, Oodles AI Platform, Sandhya Gururaj Sagar, Automation Embedded Training centre, DARSHAN R, BUILDERS POINT, Jyotsna Rajsekar Belliappa, BLUESKY SUSTAINABLE, Gopal Narayanappa, Tevah Solutions-Automation for Robotic Technology were the applicants.





8. **National Startup Reverse Pitchfest** was held on the occasion of National Startup Day on 24th February 2023. About 40 teams of about 120 students participated in this event. The event was organized by CoCreate and IIC, BMSIT&M. The event was conducted throughout the day. This event was organized to be a part of a shark tank like experience, to come up with the solutions for the problems of a global company, to learn from the experienced entrepreneurs and to improve students' presentation skills. The CoCreate representatives were the jury of the event. There were 3 winning teams which were awarded with cash prizes.



9. Generation and support of Ideas/prototypes/innovations and recognition received- Yukti portal (<https://yukti.mic.gov.in/>) captures students' Idea, PoC, Prototype, Business Model. The same repository will be considered for the National Innovation Contest 2022. About 148 students and faculty of BMSIT&M have registered for this contest.

10. It is a platform to showcase talent and creativity in the field of cyber security. It is a unique opportunity to work on real-world problems, collaborate with like-minded individuals. KAVACH 2023 will have two phases. The submitted ideas will be evaluated by a group of experts in the field and only the innovative ideas will be selected for the Grand Finale or 2nd round. During the Grand Finale, selected participants are expected to build the solution to demonstrate their concepts and prove to the juries that their ideas are technically feasible and more importantly implementable. Best ideas will be declared winners. During this 36 hours' hackathon, scheduled in the month of July-23, selected youths from education institutions across the country will participate to offer strong, safe and effective technology solutions using their technical expertise and innovative skills.

This hackathon has 20 Problem statements related to the cyber security domain against which the innovative minds will be able to submit their ideas and compete against each other. 4 teams shortlisted for the competition:

1. Dr. Aruna, Mr. Keshav and team- CSE Department
2. Dr. Vidya and Team- CSE Department
3. Mr. Suhas Pete Team- ISE Department
4. Mr. Lokesh and Team- ISE Department





11. As a supportive gesture to encourage innovation within the student community, BMSIT&M generously sponsored the registration fees amounting to Rs. 8000 for eight teams from the Institute Innovation Centre. Out of the five projects representing BMSIT&M in the Finals, the project titled "**DOSTBIN - home-based compost machine**" secured an outstanding achievement. It was awarded the Second prize, an impressive **Rs. 1 lakh** in recognition of its innovative concept and execution. This remarkable accomplishment further highlights BMSIT&M's commitment to nurturing talent and promoting impactful ideas.



12. Seedbrains 2.0 provided an exceptional opportunity for us to not only showcase our product skills but also establish valuable connections with fellow participants and organizers. The event served as a bustling hub of creativity, enabling us to network, exchange ideas, and foster collaboration within the entrepreneurial community. We are grateful for the chance to participate in such a prestigious event and extend our sincere appreciation to the Cambridge Institute of Technology for organizing this transformative experience.



13. BICEP-Innovation centre handed over the first phase of funding amount of Rs 15,000 each to **Dr. K. Suresh Kumar** from the Department of Chemistry, for his project titled "**Naked Eye Based Seafood Freshness, Spoilage & Adulteration Monitoring System**" and **Prof. Nirupama B. Khande** from the Department of MCA, for the project titled "**Smart Perfume Dispenser in Restroom**" on 21st July 2023. The progress will be further monitored by Prof. Madhu M C



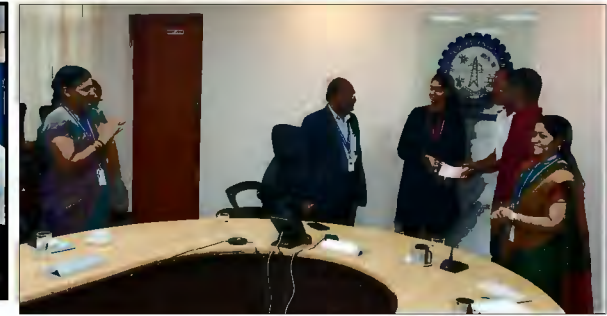
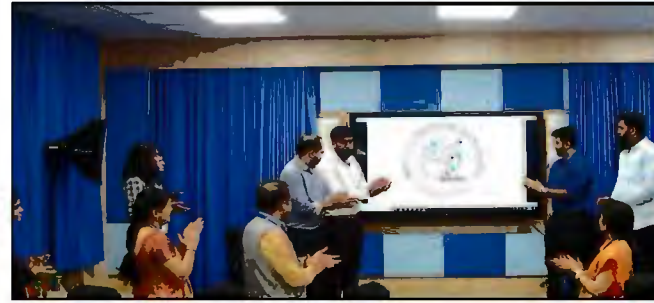
14. DostBin Team applied for **India Startup Festival 2023** and participated in **TAL Transformers**. They attended the Final Pitch on 30<sup>th</sup> July 2023. Dostbin was selected for the semifinals and the idea was presented in front of the jury members on 6<sup>th</sup> Aug 2023. The DostBin team was shortlisted by the Jury. Received **prize money of Rs.25,000 /-** on 12<sup>th</sup> Aug 2023. DOSTBIN - Winner at TAL Transformers, in the **Social Innovation Challenge** category at Indian start-up festival, receiving prize money from ISF founder, Mr J A Chowdhary.



15. Pre-Incubate DostBin Solutions private limited. Institute (BMSIT&M) seed fund Rs. 2,45,000/-



16. The BICEP team initiated the Logo competition to get the new logo for BICEP which gives the essence of the Innovation & Entrepreneurship ecosystem. Students participated enthusiastically and a massive response was received. Phase 1 of the competition was held on 9th Aug 2023 to shortlist 10 logos. This event was coordinated by Mr. Chennabasava C, BICEP Manager and supported by Ms Shama. BICEP – Innovation Coordinator. The final logo was launched on 21<sup>st</sup> August on World Entrepreneurs Day.



17. DOSTBIN team was shortlisted in top 32 team as finalist, this year across Karnataka state. It was awarded ***Rs 10,000/- cash prize*** as finalist at the Grand Finale which happened on ***20th September 2023*** at ***Sir M V Auditorium FKCCI K G Road, Bengaluru.***



18. India's biggest Go-Kart final event for the 8<sup>th</sup> season was conducted during 12<sup>th</sup> to 16<sup>th</sup> October 2023 at Galgotia University and Buddha International Circuit, Greater Noida. 11 student members and Faculty Coordinator Dr. Shripad Diwakar, Assistant Professor, Department of ME participated in IKR-2023 competition. 33 teams from all over India were participated in this event. Team Motor Heads of BMSIT&M extremely performed well in different category of the event and bagged "Future award" with a cash prize of Rs.5000/= in IKR-2023 competition. The execution of IKART-2023 project work was financially supported by BICEP of BMSIT&M.





### 19. **Code Red 24 Hrs. Hackathon**

CODE RED'24, our 24-hour hackathon, triumphantly concluded with remarkable achievements. Commencing on 23.12.2023, the event included a grand launch and the unveiling of 11 problem statements on 28.12.2023. Drawing an impressive 785 registrations nationwide, the top 200 participants showcased their prowess in an overnight hackathon at BMSIT from 13.01.2024 to 14.01.2024. The winners are: 1st Prize - Team COOKIE



ARMY Rs. 18000/- (Vidhyavardaka College of Engineering), 2nd Prize - Team ELITE Rs. 16000/- (BMS Institute of Technology and Management), and 3rd Prize - BYTE FOR BAIT Rs. 14,000/- (Reva University). This event is coordinated by E-Cell heads, Prof Bharti, CSE and Prof Archana, Civil. It was under the leadership of Dr Bharathi Malakareddy R&C cell head and Dr. Seema Singh Dean I&E.

20. A drone workshop was conducted at Aarohan, hardware innovation laboratory, BICEP by the Aero club center of excellence, sponsored by BICEP from 20.01.2024 to 23.01.2024. The three day workshop comprised of theory regarding flight dynamics, followed by drone assembly (hands- on) and Drone flying on the finale day on 23.01.2024. The hexacopter was designed/assembled using the components procured by BICEP-Aarohan lab. The Aero club team briefed the students on the theory as well as practical aspects of drone building and flying. Principal, BMSIT&M, Dr. Mohan Babu G.N was present during the flying operation of the drone. The program was coordinated by Dr. Madhu M C Chief -IIC and Aero club coordinator and was supported Rs. 7000/- by Dean (Innovation & Entrepreneurship).





21. Dostbin emerged victorious in the prestigious ISBR Business School competition. In December, the team applied for the competition, aiming to showcase Dostbin's potential to revolutionize waste management. Selected among the top 50 teams for the offline presentation on 10.02.2024, Dostbin entered the semi-finals with determination. Presenting before esteemed panelists, they demonstrated the viability and societal relevance of Dostbin's mission. Their presentation resonated with the judges, propelling them into the finals among the top 5 teams. In a moment of triumph, Dostbin was announced as the winner of the competition. Dr. Manish Kothari, Founder of ISBR Business School, presented them with the 1st prize, along with a cash award of INR 25,000/-. Dostbin extends its heartfelt gratitude to ISBR Business School for providing a platform to showcase their vision and BMS management and BICEP who supported them along this remarkable journey.



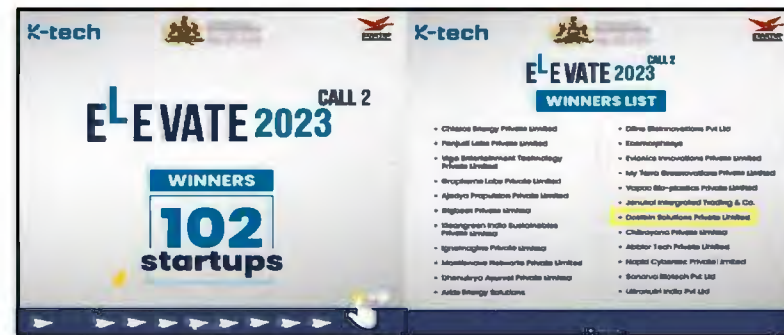
22. ANVESHANA '24, our Flagship National Level Prototype Competition triumphantly concluded with remarkable achievements. Commencing in late November with the initial planning stages, we got 86 teams of 4 registrations across various states. The virtual presentation was the first round which was conducted on 30th January. The top 50 teams were called to the final round for physical demonstration of their prototypes. GRAND FINALE was conducted on 23.02.2024 with most of the 50 teams visiting our campus and demonstrating their wonderful prototypes. After evaluation top 3 prizes were awarded: - First place: Project Titled "Adsorption of textile dyes using bioactive filter beds" (RVR & JC College of Engineering, Guntur, Andhra Pradesh) Second place: Project Titled "Fraud Fortify" (Dayanand Sagar academy of technology and management, Bengaluru.) Third place- > Project Titled "DOSTBIN" from (BMSIT&M, Bengaluru) Ten teams were awarded consolation prizes of Rs 5,000/- each for their amazing ideas/prototypes.



23. Elevate 2023 Call – 2:



Karnataka state provides a one-time grant of up to Rs. 50 lakhs to encourage innovators who may need early-stage funding for developing a prototype, market development, and scale-up. Around 100 startups are proposed to be selected with a committed budget of Rs. 20 crores for ELEVATE 2023 Call 2. Dostbin (BICEP Incubate) was shortlisted for the Grand Finale of ELEVATE 2023 Call 2. Dostbin successfully cleared the initial screening and virtual presentation round held on February 13, 2024. The GRAND FINALE pitching event took place on February 26, 2024, at Venue - KEONICS/K-WINGS & K-tech Innovation Hub, 1st Sector, HSR Layout. Dr. Seema Singh, Founder of Dostbin Solutions Pvt Ltd, presented before the jury panel members, and the Grant in Aid of Rs. 23,00,000/- funded as Elevate winner. This fund needs to be utilized in one year period commencing from 1<sup>st</sup> April 2024. It will be used to launch the product in the market for Alpha and Beta testing.



24. **KPIT SPARKLE 2024:** Team consisting of Dr. Rashmi N, Assistant Professor, Dept. of ECE, Oshankar Naidu, Vikas Reddy, Varsha V and Shivani Singh, final year students of ECE participated in the KPIT sparkle finale 2024. They were selected from nearly 19,000 ideas of initial submissions and 433 colleges all around India. They competed among 100 participants to the finals. They were the one selected among 8 participants and solely represented Karnataka and were the only one of the 16% of the teams who were under 5G for communications as the domain. They had the opportunity to meet **Dr Tessy Thomas** who is the ‘**Missile Woman of India**’ as the Chief Guest along with other guests who appreciated their project. The team gained experience and met several partners of KPIT. Panel members congratulated them and motivated them with their good suggestions for their innovation. They had a Tech Talk on Software Defined Mobility by the speakers of KPIT Technologies who gave an introduction about Software Defined Vehicles and their role in technology. They were awarded Participation medals and Certificates from KPIT for their innovation. The Institute had supported them financially with **Rs. 28,900/-** for participation and travel through **BICEP**.



25. **Faculty driven project fund disbursement.** The BICEP Innovation Center initiated phase - 3 of Faculty driven project in 4<sup>th</sup> quarter of 2023. Five faculty members showcased their innovative ideas and research endeavors, aiming to secure financial support to advance their respective projects and contribute to the academic and technological growth of the institution. Phase – 3 was supported with fund of Rs. 2,41,345/- seed money from the institute. On March 16, 2024, the funds were disbursed to the selected faculty-driven projects in the presence of the Principal, Vice Principal and BICEP innovation team. The following faculties received 1<sup>st</sup> part of the funds.

- Dr. Ravichandra K R, Dept of Mechanical Project Titled “Robotic Aerial and Planetary Terrain Operation Rover” (RAPTOR) Rs. 50,000/-
- Dr. Vijayalakshmi G V and Prof. Chandrababha R, Dept of ECE Project Titled “Smart footwear system for visually impaired community” Rs. 25,000/-
- Dr. Dhanalakshmi B K and Dr. Lakshmi B N, Dept of CSE Project Titled “Crab Style Wheelchair” Rs. 15,000/-





- Prof. Shilpa Hiremath, Dept ECE Project Titled “Solar Power Floating Waste Cleaner for Small Water Bodies” Rs. 8,000/-
- Dr. Rashmi N, Dept of ECE Project Titled “Ultrasonic Parametric Acoustic Array (USPA)” Rs. 40,000/-

26. **Carbon Zero Challenge 4.0 All India Eco-innovation and Entrepreneurship contest:** DOSTBIN has been selected as one of the top 25 teams in the Carbon Zero Challenge 4.0, an All-India Eco-Innovation and Entrepreneurship Contest organized by IIT Madras. The team participated in a three-day bootcamp at IIT Madras from April 22nd to 24th, 2024, which was followed by an embarkation ceremony on April 25th, 2024. During this ceremony, DOSTBIN secured 5 lakhs in funding. As part of the challenge, DOSTBIN will collaborate with IIT Madras for a six-month period, undergoing regular reviews. Additionally, they have the opportunity to secure an additional 10 lakhs in funding through an evaluation in October 2024. This evaluation will take place at an exhibition showcasing 25 eco-innovation products at IIT Madras, contingent upon the successful utilization of the initial funds and the completion of their project.



27. **Connect 'n Control: SIMULINK & IoT Challenge:**

As part of the Institute Innovation Council (IIC) initiative, the Department of Electronics and Communication Engineering (ECE) and BICEP organized a workshop and competition named "Connect 'n Control: SIMULINK & IoT Challenge" for second-semester students from ECE, ETE, and EEE on 19.04.2024 & 20.04.2024. The competition entailed solving a problem statement presented by industry professionals. The sessions were handled by Mr. Rakshith B. S from CoreEL Technologies and Mr. Kshitij K.U from TIF Labs. Around four teams, each comprising five student members, took part in the event. Students were awarded a cash prize of Rs 3000 for the first prize, Rs 2000 for the second prize, and Rs 1000 for the third prize along with certificates. The event was coordinated by Dr. Anna Merine George and Dr. Asha K and executed in IoT lab of AIML department.



Students were awarded a cash prize of Rs 3000 for the first prize, Rs 2000 for the second prize, and Rs 1000 for the third prize along with certificates. The event was coordinated by Dr. Anna Merine George and Dr. Asha K and executed in IoT lab of AIML department.

**The winners of the event are as follows:**

1st Prize: Team - Baljeet Kumar Patel, Jatin Sharma, Kulajeet Barman, Saksham Agarwal and Simma Leeladithya.

2nd Prize: Team - Alan Biju, Ashil Jermin George, Akshat Jaiswal, Anish Anand Pulsay, A Nitish

3rd Prize: Team - Chiranthan Gangadharappa, Deepak Suresh, B. Kavin, B. Mohith



28. BICEP - E Cell organised institute level competition SPL 2.0 on 14th May 2024. The convocation ceremony of the previous core team of graduating E-Cell members took place followed by installation of the new E-Cell core team for the year 2024-2025. It was an event which was aimed at Including the start-ups and the cricket tournament IPL in an innovative way by which the participants would learn about finance management, decision making, researching, and coming up with solutions for problem statement.

Round 1: a timed test of aptitude and general knowledge and latest news was taken.

Round 2: An auction was held for 60 Indian startups and 10 teams bid with a virtual account of 10 Cr.

Round 3: The team had to come up with solutions to the problem statements for the purchased start-ups. Exposure session and hands on for business model canvas was also part of round 3.

The external judge from industry, Mr Guruprasad S N, IBM and internal judge, Dr Balu, Professor, MBA department encouraged and appreciated the teams and winners.



29. Srishti Innovation Exchange 2024: Srishti is an icon of creativity, innovation and challenge. Srishti began to provide a platform to create enthusiastic students and budding scientists and give them an insight into the open entrepreneurial avenues. Every year, hundreds of passionate students from prestigious Institutions across Karnataka participate in the Project Exhibition and Competition after a series of scrutiny by the technical committee, which consists of the faculties from IISc, IIT, NIT and other prestigious Tech Institutions. BMSIT&M students were encouraged for active participation from BICEP. 21 teams across various departments (CSE-4 teams, EEE-1 team, ECE-6 teams, AIML-2 teams, Civil-3 teams, ISE-1 team, ETE-4 teams) participated and were supported financially with registration amount of Rs. 16,900/- from BICEP. The event was organized by Atria Institute of Technology, Bengaluru from 24th May 2024 to 26th May 2024. This event includes 6 types of competitions, namely Srishti Exhibition (Final Year Projects Exhibition & Avishkar - Pre-final year projects exhibition), Srishti Innovator (Srishti Competitions, Architecture, Hackathons) and Srishti Param Talent Quest. Total We received Prize money Rs. 48000/-



30. The Innovation Gauntlet - Squid Game Edition took place on June 25th at BS Narayan Auditorium, organized by BICEP - Innovation. It aimed to foster innovation among participants, providing a platform to showcase aptitude skills, business concepts, and innovative thinking. The event featured three rounds:

Round 1 - Green Light, Red Light: A paper-based aptitude round testing skills on various topics, including Squid Games trivia.

Round 2 - Tech Dalgona: Participants demonstrated strategic thinking and decision-making skills by managing time effectively and solving tasks quickly using search engines.

Round 3 - Trust Your Instincts: This round focused on decision-making under pressure, assessing the potential of companies and making real-time bidding decisions.





Winners are

1st prize     Rs 5,000/-     Sai Chetana Reddy NS, Rakshita M Ali, Sakshi Nittukar, Srushti Shingri CSE Dept  
 2nd prize     Rs. 3,000/-     Sarvesh Patil, Samarth Joshi, Tanav Shivkumar, and Samarth Vasisht     AIML Dept  
 3rd place     Rs. 2,000/-     Kritesh Yadav, Mayur, Anish S Land, and Aditya Raj     AIML & CSE Dept  
 Consolation     Rs. 1,000/-     Shankar Reddy, Tharun Susri, and Mrinal Midha. ETE Dept

This event highlighted innovation, strategic thinking, and entrepreneurial skills among its participants, contributing to a dynamic showcase of talent and creativity both by participants and organizing teams of students.

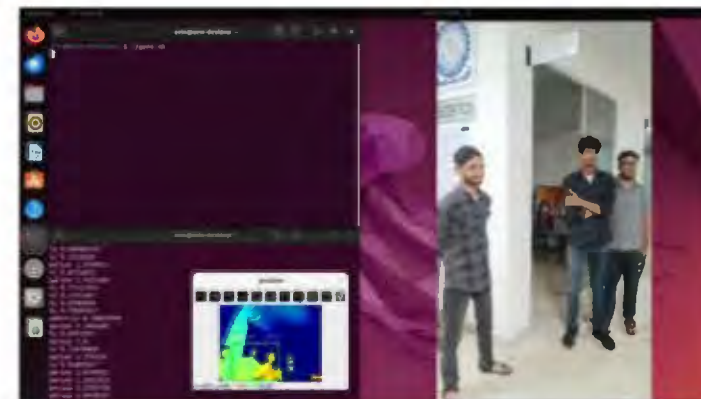
31. Aarohan lab is an intention to cater to the needs of students and faculty for their innovative multidisciplinary projects. Workspace is provided to enable faculty and students to do their projects. LCD projectors/Blackboard /working tables are provided. The Robotics and IoT track held its second session on May 20, 2024, with 15 participants mentored by 17 IEEE volunteers. In Stage 2, the team wrote and refined code for the Arduino to interpret IR sensor data and control motor movements, maintaining meticulous attention to detail throughout. The students modified the robots for robo soccer by enhancing the chassis for better agility and reprogramming the Arduino with specialized algorithms. They rigorously tested the robots in simulated matches, successfully converting them into competitive robo soccer players. The Robo Soccer competition held on 29<sup>th</sup> June 2024 was a resounding success, with enthusiastic student participation and innovative robotic designs. The event showcased the participants' commitment and ingenuity, making it a memorable and rewarding experience for all involved.



**Winner:**

S N	Prize awarded	Amount	Names	Department
1	1 <sup>st</sup> prize	Rs 2,000/-	Alan Biju, Harshitha K V, Shruthi A	ECE Dept
2	2 <sup>nd</sup> prize	Rs.1,000/-	Keerthi Narayan M V, Ajay D Bhat, Sri Srujan Hari T, Aniruddh M	ISE, EEE & ECE Dept
3	Consolation prize	Rs. 1,500/-	Hemanth and Alan Biju (active participants)	EEE & ECE

32. **ELCIA Tech Summit:** The ELCIA Tech Summit 2024, organized by IIT Bangalore, is an 8-hour event filled with informative sessions by tech luminaries, lively panel discussions, and impressive displays of cutting-edge technologies. Dive deep into the world of emerging technologies driving industries and learn how to leverage them to fuel efficiency. Prof. Debabrata Das, Director of IIIT-B, remarked on the significance of the event, stating, "The ELCIA Next-Gen Innovative Tech Hackathon has been a platform for aspiring innovators to push the boundaries of technology. It has provided an opportunity to develop solutions that not only showcase technical prowess but also address critical societal needs." The hackathon took place in three phases from July 6 to July 25, both online and offline. In the second round Prototype session, students from BMSIT&M participated with a project titled "Wearable Navigation Aid for Visually Impaired Individuals Using LIDAR and Raspberry Pi Zero." The team, consisting of Mr. Abhinav Gupta (1BY22IS005), Mr. Aditya Dhanraj





(1BY22CS010), and Ms. Mithila S Shegaji (1BY22CS005), was guided by Prof. Shama H M. The project was financially supported by BICEP with Rs. 9,000/-. This project will be participating in various state and national level competitions.

33. **FKCCI Manthan Business plan competition:** Dostbin Solution Pvt Ltd - BICEP incubatee, was recognized as one of the Top 5 winners at the 16th edition of the FKCCI Innovation and Business Plan Competition on 18th September 2024. They had the opportunity to pitch their business in front of audience and panel members, including **M.B. Patil (Member of the Legislative Assembly at Vidhan Sabha)** and **Uma Reddy (Managing director, Hitech magnetics and electronics private limited)**. This recognition came with a cash award of Rs. 50,000, marking a significant milestone in their entrepreneurial journey and offering both validation and resources to further develop and implement their business vision.



34. The 3<sup>rd</sup> series of faculty driven project 2<sup>nd</sup> review was held on 12<sup>th</sup> September 2024 for second and final dispersal of funds.

**The project and fund details are as follows:**

1. Dr. Ravichandra K R, Dept of Mechanical Engineering Project Titled **“Robotic areal and planetary operational rover” (RAPTOR) Rs. 50,000/-**
2. Dr. Vijayalakshmi and, Dept of Electronics and Communication Engineering Project Titled **“Smart footwear system for visually impaired community” Rs. 10,000/-**
3. Prof. Shilpa Hiremath, Dept of Electronics and Communication Engineering Project Titled **“Solar power floating waste cleaner for small water bodies” Rs. 3,345/-**

**4<sup>th</sup> Series of faculty driven Project 1<sup>st</sup> phase amount disbursed**

Dr. Ambika G N, Department of Computer Science and Engineering Project Titled **“Autonomous Voice controlled Arm Robot (AVCAR)” Rs. 25,000/-**





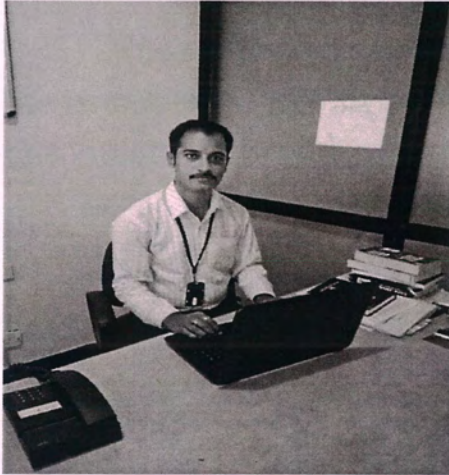


## **BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT**

**(An Autonomous Institution affiliated to VTU, Belagavi)**

**Yelahanka, Bengaluru – 560064.**

### **Media Cell**



#### **Cell Members:**

- 1) Prof. Venkatesh A, Public Relations Officer
- 2) Prof. Reshma CR, Faculty Member
- 3) Mr. Lokesh, E-studio, Staff Member
- 4) Mr. Vishwanath Desai, Staff Member, AI&ML Dept.
- 5) Mr. Nihal Singh, Student Member, MCA Dept.
- 6) Mr. Thejaswini B, Student Member, MCA Dept.

#### **About the Cell:**

Media Cell was established in 2019 February, with an intent to serve BMS Institute of Technology & Management by communicating and collaborating with our stakeholders and the outside world. The cell has maintained a good rapport with the media and other stakeholders and continuously striving towards the betterment of our Institution.

Our cell works towards giving wide publicity to the events and achievements of BMS Institute of Technology and Management. Media Cell represents the Institution in various Digital/Social media platforms such as: Facebook, LinkedIn, Instagram, Youtube etc. .



**Vision:**

To help BMSITM to reach greater heights by effectively communicating and sharing our success stories with all the stakeholders and the outside world.

**Mission:**

To publish BMSITM articles in good, reputed Media channels, attract talented students and, teachers to guide students to solve the problems of Industry and society at large.

**Responsibilities:**

- To give wide publicity to the events of our Institute in both Social and Print media.
- To publish Student and Faculty articles in media.
- To make all media related arrangements that are conducted by BMSIT&M.
- To encourage young Students to take tasks like: article writing & publishing, digital marketing etc.
- To promote all the courses of our Institution.



*A. Nataraj*  
Public Relations Officer





**BMS Institute of Technology and Management**

**Autonomous Institute under VTU**

**Department of Physical Education & Sports**

Email Id: [sports@bmsit.in](mailto:sports@bmsit.in)

Phone: 080-68730159

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## **SPORTS INFRASTRUCTURE AND FACILITIES**

### **‘Vision’ of Sports Department**

“To develop highly talented sports performers along with ‘Professional Education’ aiming at great innovations in the field of Physical Education & Sports”

### **‘Mission’ of Sports Department**

“To create awareness of fitness through ‘Physical Education & Sports Activities’ with the spirit of healthy competition to stimulate a long-lasting attitude towards discipline, sportsmanship, hard work, integrity, creativity, leadership and social responsibility within the safe & positive environment.”

### **About:**

Physical Education is a universal subject where everyone needs the knowledge of physical exercise for fitness. Fitness is a basic requirement without any age factor, for which we need to encourage everyone to get involved in physical/sports activities. It is easy to say, “Sound body had sound mind”, Health is wealth” but it is equally important to motivate everyone to involve in physical activities for a healthy society. A person having overall development of personality means one must be sound physically, mentally, and socially. The Sports field gives fitness with pleasure, develops skills and creativity, health awareness, and increases immunity power. It teaches discipline, dedication, team spirit, aggressiveness, control on temperament, leadership quality etc. Hence the students & staff are encouraged to take part in sports activities like VTU inter collegiate tournaments and tournaments organized by reputed colleges and organizations to promote the sports people of our college. The sports department is well equipped with state of art Gym and excellent facilities for sports and games in the college premises.



## **SPORTS FACILITIES:**

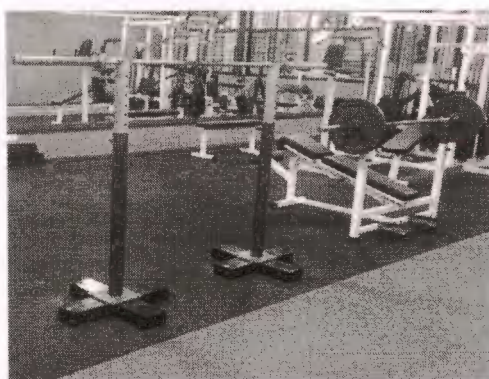
**OUTDOOR FACILITIES:** Basketball, Tennis, Volleyball, Throwball, Ball badminton, Cricket Nets, Football, Hockey, Kho-Kho, Handball, Softball & Athletics. Etc.



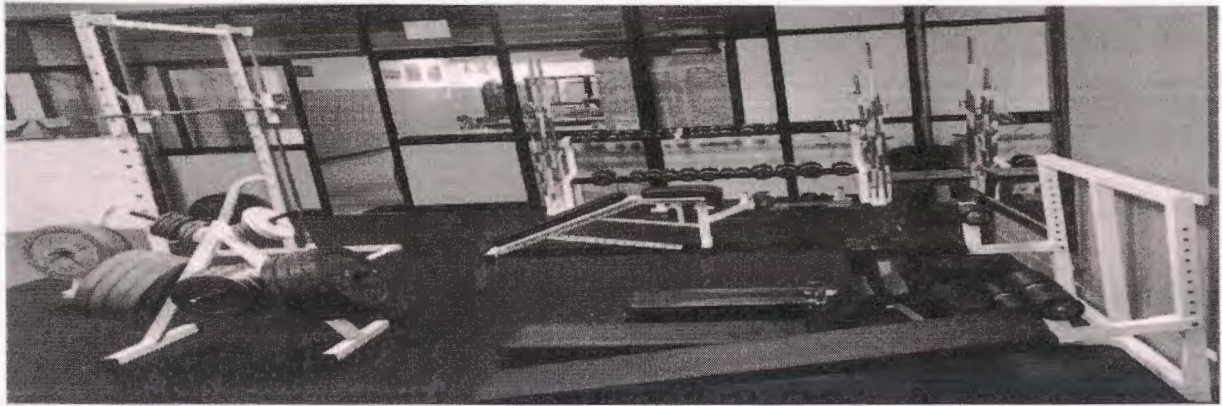
**INDOOR FACILITIES:** Carom, Chess, Table Tennis, Shuttle badminton, Kabaddi, Boxing, Yoga & Weightlifting Etc.



## **GYM AT COLLEGE PREMISES:**







Olympic Rod Plates & Rack, Smith Machine, Dumbbells & Barbells with Rack, Adjustable Bench and 3 level abdominal Bench, Squat Stand, Olympic Bench & Flat Bench Twisters, Hyper Extension Bench, Stepper, Leg curl and Leg Extension Bench. Ten Station Maltby Gym: Abdominal board, Peck Deck, Seated Rowing, Bench Press Inner Thigh, Lat Pull Down, Leg Press, Parallel Bar with Leg Raiser. Pull-Up Bar.

The sports department has been provided with the new sports infrastructure facilities which are very essential for our college students. The following are the details of upgraded sports facilities.

- **FLOOD LIGHTS:** Floodlight facility has been provided for Basketball, Volleyball & Throwball Courts. Total 9 poles are erected, and 22 lights have been provided for the Flood lights.





**BASKETBALL COURT PAINTING:** The Basketball court has been painted with the 8-Layer Acrylic Synthetic Systems.



### **Indoor Games & Sports facilities available for Men & Women**

Sl. No	Name of the Game	Total Area available in Sqm	Nos.
1	Basketball/Lawn Tennis	770 Sq. Mts.	01
2	Volleyball	720 Sq. Mts.	01
3	Throwball	720 Sq. Mts.	01
4	Badminton (wooden)	221 Sq. Mts.	01
5	Carrom	160 Sq. Mts.	01
6	Chess		
7	Table Tennis		
8	Gym hall	145 Sq. Mts.	01
9	Multipurpose playfield	3764 Sq. Mts.	01
10	Sports Department office	24 Sq. Mts.	01

*M-s. Ran*  
Head (P.E. & Sports)





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**BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT**

(Autonomous Institution Under VTU)

Yelahanka, Bengaluru -560119

## **TEACHING LEARNING PROCESS**

**2024-25**

<b>Sl. No</b>	<b>Description</b>	<b>Links (College Website)</b>
1.	UG / PG Scheme & Syllabus	<a href="https://bmsit.ac.in/autonomous">https://bmsit.ac.in/autonomous</a>
2.	Continues Evaluation System	<a href="https://bmsit.ac.in/coe">https://bmsit.ac.in/coe</a>
3.	Timetable	<a href="https://bmsit.ac.in/timetable">https://bmsit.ac.in/timetable</a>
4.	Callender of Event	<a href="https://bmsit.ac.in/circulars">https://bmsit.ac.in/circulars</a>





# **BMS** INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(Autonomous Institute affiliated to VTU, Belagavi, Approved by AICTE  
New Delhi, Accredited by NAAC with 'A' Grade and 9 Programs accredited  
by NBA)

**Avalahalli, Doddaballapur Main Road, Yelahanka,  
Bengaluru - 560064**



**Department of MBA**

**Scheme and Syllabus**

**2024 Scheme**

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## **Institute Vision**

To emerge as one of the finest technical institutions of higher learning, to develop engineering professionals who are technically competent, ethical and environment friendly for betterment of the society.

## **Institute Mission**

Accomplish stimulating learning environment through high quality academic instruction, innovation and industry-institute interface.

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# DEPARTMENT OF MBA

## About the Department




The Department of MBA started in the year 2022 with a prime objective to bestow Quality Management Education with an intake of 60 aspiring managers. The Department is enriched with team of qualified and experienced faculty members who are committed to offer best management education through structured curriculum and through various value-added programmes such as series of guest lectures, seminars, workshops, case-based learning, course assignments, industry interaction to bridge the gap between industry and academia. The students will be equipped with managerial, leadership and entrepreneurial skills to address the challenges in society and the corporate world through innovation. The Department provides placement assistance and trains students to make them corporate ready.

## Vision

To be a prominent management department imparting value-based education and research to develop leaders and entrepreneurs contributing for the betterment of the society.

## Mission

The department commits itself to achieve the vision through:

-  Imparting management education that integrates interdisciplinary theoretical foundations with practical applications through experiential learning
  -  Developing the passion for innovation, entrepreneurship, and social responsibility.
  -  Fostering a culture of research excellence.
-



## **PROGRAM EDUCATIONAL OBJECTIVES (PEOs)**

The Post Graduate students shall:

- PEO1** Establish themselves as management professionals by solving real world business and societal problems with a passion to innovate.
- PEO2** Exhibit the value-based leadership attributes and entrepreneurial competencies for integrating the core values for sustainable development.
- PEO3** Involve and engage in lifelong learning for professional development.

## **PROGRAM OUTCOMES (POs)**

The Post Graduate Students will be able to:

- PO1** Apply knowledge of management theories and practices to solve business problems.
- PO2** Foster analytical and critical thinking abilities for data-based decision making.
- PO3** Develop value-based leadership abilities.
- PO4** Understand, analyse, and communicate global, economic, legal and ethical aspects of business.
- PO5** Lead themselves and others in the achievement of organizational goals, contributing effectively to a team environment.
- PO6** Develop entrepreneurial mindset and promote innovation in business enterprises.
- PO7** Synthesis of ethical behaviour and social responsibility in managerial decision making.
- PO8** Integrate the academic learning and research skills for career planning and development.

## **PROGRAM SPECIFIC OUTCOMES (PSOs)**

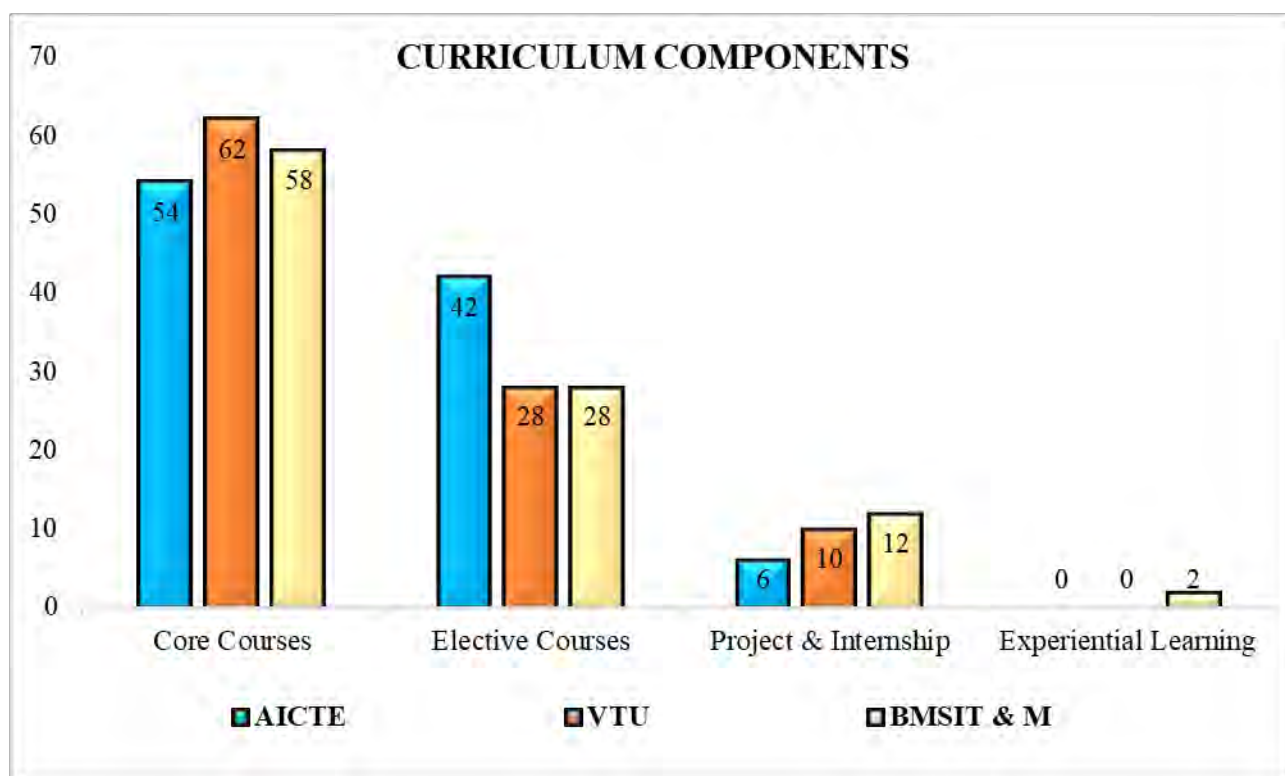
The Post Graduate Students will be able to:

- PSO1** Apply the conceptual and quantitative knowledge to analyse the financial behaviour and to make optimal decisions.
  - PSO2** Demonstrate the critical thinking skills in key functional areas of Human Resource to create organizational leaders.
  - PSO3** Develop the ability to apply marketing strategies in promoting products and services to the prospects in the competitive landscape.
-



## Comparison of syllabus with AICTE model curriculum and VTU

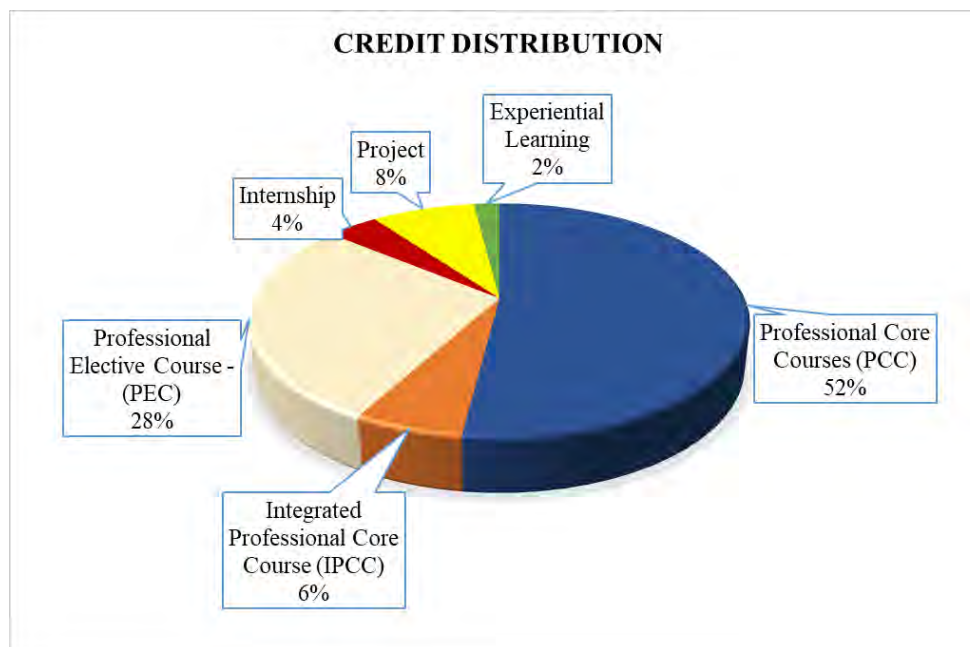
Sl. No	Curriculum Components	AICTE Curriculum	VTU Curriculum	BMSIT & M Curriculum
1	Core Courses	54	62	58
2	Elective Courses	42	28	28
3	Project & Internship	6	10	12
5	Experiential Learning	-	-	2
6	Societal Project	-	Included	Included





### Typical Structure of Curriculum - MBA

Semester	Professional Core Courses (PCC)	Integrated Professional Core Course (IPCC)	Professional Elective Course - (PEC)	Internship	Project	Experiential Learning	Audit Course	Total
I	22	3					1	25
II	22	3				2	2	27
III	8		16	4				28
IV			12		8			20
<b>Total</b>	<b>52</b>	<b>6</b>	<b>28</b>	<b>4</b>	<b>8</b>	<b>2</b>	<b>3</b>	<b>100</b>





# SEMESTER – 1



## BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(Autonomous Institute affiliated to VTU)

Scheme of Teaching and Examination: Effective from AY 2024-25

Choice Based Credit System (CBCS)

### PG PROGRAM: MASTER OF BUSINESS ADMINISTRATION (MBA)

### SEMESTER: I

Sl. No	Course Category	Course Code	Course Title	Credit Distribution			Credits	Contact Hours/week	Examination			
				L	T	P			Duration in Hours	CIE Marks	SEE Marks	Total Marks
1.	PCC	MMBA1C1	Management & Organizational Behaviour	4	0	0	4	4	3	50	50	100
2.	PCC	MMBA1C2	Managerial Economics	4	0	0	4	4	3	50	50	100
3.	PCC	MMBA1C3	Financial Accounting & Reporting	4	0	0	4	4	3	50	50	100
4.	PCC	MMBA1C4	Marketing Management 1	3	0	0	3	3	3	50	50	100
5.	PCC	MMBA1C5	Business Statistics	4	0	0	4	4	3	50	50	100
6.	PCC	MMBA1C6	Managerial Communication	3	0	0	3	3	3	50	50	100
7.	IPCC	MMBA1C7	Computer Application for Management	2	0	1	3	4	3	50	50	100
8.	AUD	MMBA1A1	English for Professional Excellence - 1	-	-	-	-	2	-	50	-	PP
TOTAL				24	-	1	25	28	21	400	350	700

*Note: PCC: Professional Core Course; IPCC: Integrated Professional Core Course, AUD: Audit course*



## SEMESTER – 2



### BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(Autonomous Institute affiliated to VTU)

Scheme of Teaching and Examination: Effective from AY 2024-25

Choice Based Credit System (CBCS)

#### PG PROGRAM: MASTER OF BUSINESS ADMINISTRATION (MBA)

#### SEMESTER: II

Sl. No	Course Category	Course Code	Course Title	Credit Distribution			Credits	Contact Hours/week	Examination			
				L	T	P			Duration in Hours	CIE Marks	SEE Marks	Total Marks
1.	PCC	MMBA2C1	Operations Research	4	0	0	4	4	3	50	50	100
2.	PCC	MMBA2C2	Human Resource Management	4	0	0	4	4	3	50	50	100
3.	PCC	MMBA2C3	Financial Management	4	0	0	4	4	3	50	50	100
4.	PCC	MMBA2C4	Strategic Management	3	0	0	3	3	3	50	50	100
5.	PCC	MMBA2C5	Business Research Methods	4	0	0	4	4	3	50	50	100
6.	PCC	MMBA2C6	Marketing Management 2	3	0	0	3	3	3	50	50	100
7.	IPCC	MMBA2C7	Business Analytics	2	0	1	3	4	3	50	50	100
8.	EXP	MMBA2C8	Design Thinking & Innovation	1	0	1	2	3	-	50	50	100
9.	AUD	MMBA2A1	English for Professional Excellence - 2	-	-	-	-	2	-	50	-	PP
10.	AUD	MMBA2A2	Societal Project	-	-	-	-	-	-	50	-	PP
<b>TOTAL</b>				<b>25</b>	<b>0</b>	<b>2</b>	<b>27</b>	<b>31</b>	<b>21</b>	<b>500</b>	<b>400</b>	<b>800</b>

*Note: PCC: Professional Core Course; IPCC: Integrated Professional Core Course; EXP: Experiential Learning; Program Practical /Field Work / Assignment are part of contact hours ; AUD – Audit course*



## SEMESTER - 3



### BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(Autonomous Institute affiliated to VTU)

Scheme of Teaching and Examination: Effective from AY 2024-25

Choice Based Credit System (CBCS)

#### PG PROGRAM: MASTER OF BUSINESS ADMINISTRATION (MBA)

#### SEMESTER: III

Sl. No	Course Category	Course Code	Course Title	Credit Distribution			Credits	Contact Hours/week	Examination			
				L	T	P			Duration in Hours	CIE Marks	SEE Marks	Total Marks
1.	PCC	MMBA3C1	Entrepreneurship & Startup Management	4	0	0	4	4	3	50	50	100
2.	PCC	MMBA3C2	Operations & Supply Chain Management.	4	0	0	4	4	3	50	50	100
3.	INT	MMBA3C4	Internship	0	0	4	4	8	-	50	50	100
4.	PEC		Electives 1 (D)	4	0	0	4	4	3	50	50	100
5.	PEC		Electives 2 (D)	4	0	0	4	4	3	50	50	100
6.	PEC		Electives 3	4	0	0	4	4	3	50	50	100
7.	PEC		Electives 4	4	0	0	4	4	3	50	50	100
<b>TOTAL</b>				<b>24</b>	<b>0</b>	<b>4</b>	<b>28</b>	<b>32</b>	<b>18</b>	<b>350</b>	<b>350</b>	<b>700</b>

*Note: PCC: Professional Core Course; PEC: Professional Elective Course INT: Internship*



## Specialisation Courses – III Semester

Finance Professional Elective Courses		Marketing Professional Elective Courses		Human Resource Professional Elective Courses		Business Analytics Professional Elective Courses	
MMBA3F1	Strategic Cost Management	MMBA3M1	Consumer Behavior	MMBA3H1	Recruitment And Selection	MMBA3B1	Introduction to Python data and Control systems
MMBA3F2	Investment Analysis and Portfolio Management	MMBA3M2	Retail Management	MMBA3H2	Strategic Talent Management	MMBA3B2	Data Visualization
MMBA3F3	Advanced Financial Management	MMBA3M3	Services marketing	MMBA3H3	Organizational Change and Development	MMBA3B3	Predictive Analytics
MMBA3F4	Mergers Acquisitions & Corporate Restructuring	MMBA3M4	Rural marketing	MMBA3H4	Industrial Relations and Legislations	MMBA3B4	Big Data Analytics



# SEMESTER - 4



## BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(Autonomous Institute affiliated to VTU)

Scheme of Teaching and Examination: Effective from AY 2024-25

Choice Based Credit System (CBCS)

### PG PROGRAM: MASTER OF BUSINESS ADMINISTRATION (MBA)

### SEMESTER: IV

Sl. No	Course Category	Course Code	Course Title	Credit Distribution			Credits	Contact Hours/week	Examination			
				L	T	P			Duration in Hours	CIE Marks	SEE Marks	Total Marks
1.	PROJ	MMBA4C1	Project Work	0	0	8	8	16	-	50	50	100
2.	PEC		Electives 5	3	0	0	3	3	3	50	50	100
3.	PEC		Electives 6	3	0	0	3	3	3	50	50	100
4.	PEC		Electives 7	3	0	0	3	3	3	50	50	100
5.	PEC		Electives 8	3	0	0	3	3	3	50	50	100
TOTAL				12	0	8	20	28	12	250	250	500

*Note: PCC: Professional Core Course; PEC: Professional Elective Course; PROJ: Project work*








## Specialisation Courses – IV Semester

Finance Professional Elective Courses		Marketing Professional Elective Courses		Human Resource Professional Elective Courses		Business Analytics Professional Elective Courses	
MMBA4F1	Tax Management	MMBA4M1	Strategic Brand Management	MMBA4H1	Conflict & Negotiation Management	MMBA4B1	Machine Learning
MMBA4F2	International Financial Management	MMBA4M2	Integrated Marketing Communication	MMBA4H2	International HRM	MMBA4B2	Business Analytics & Intelligence
MMBA4F3	Financial Derivatives	MMBA4M3	B2B Marketing	MMBA4H3	Personal Growth & Interpersonal Effectiveness	MMBA4B3	Digital Analytics
MMBA4F4	Banking & Financial Services	MMBA4M4	Sales and Distribution Management	MMBA4H4	Compensation & Reward Management	MMBA4B4	Strategy Analytics









## **COURSE GUIDELINES**







### **1. Credited Theory Courses with Lecture Component only**

-  1 Lecture Hour per week will be equal to 1 Credit
-  1 Credit will have a course content of 13 hours.
-  85% Attendance is mandated to qualify to appear for SEE.
-  Case Based Teaching Learning Process will be adopted based on the course contents as required.
-  Course Assignments will be given for all courses.

### **2. Credited Theory Courses with Lecture and Tutorial Components**

-  1 Lecture Hour per week will be equal to 1 Credit
-  1 Credit will have a course content of 13 hours.
-  2 Tutorial Hours per week will be equal to 1 credit.
-  85% Attendance is mandated to qualify to appear for SEE.
-  Case Based Teaching Learning Process will be adopted based on the course contents as required.
-  Course Assignments will be given related to self-study components.

### **3. Credited Theory Courses with Lecture and Practical Components**

-  1 Lecture Hour per week will be equal to 1 Credit
  -  1 Credit will have a course content of 13 hours.
  -  2 Practical Hours per week will be equal to 1 credit.
  -  85% Attendance is mandated to qualify to appear for SEE.
  -  Case Based Teaching Learning Process will be adopted based on the course contents as required.
  -  Course Assignments will be given related to self-study components.
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## **COURSE ASSESSMENT AND EVALUATION**

1. Minimum 50% Marks in CIE is mandated for Qualifying for SEE
2. Minimum 40% Marks in SEE is mandated for qualifying but an overall aggregate (CIE+SEE) of 50% is mandated for Pass/Grading
3. Only Credited Courses will be considered for Grading.
4. 50:50 weightage for CIE: SEE.

### **1. Credited Theory Courses with Lecture Component only**

<b>Theory</b>	<b>AAT</b>	<b>Total CIE</b>	<b>Total SEE</b>	<b>Total Marks Grading</b>
<b>Test</b>	<b>Course Assignments/Seminars/Quiz/Viva Voce/Case Discussion</b>			
<b>25 Marks</b>	<b>25 Marks</b>	<b>50 Marks</b>	<b>50 Marks</b>	<b>100 Marks</b>

#### **CIE**

- a. Two tests will be conducted. Each test will be for 50 marks and the average will be converted to 25 marks.

#### **SEE**

- a. SEE will be conducted for 100 marks and then converted to 50 marks.

### **2. Mandatory Courses (Non-Credit)**

<b>Theory/Practical</b>	<b>Total CIE</b>
<b>Test/Viva Voce/Seminar</b>	
<b>50 Marks</b>	<b>50 Marks</b>

- a. Assessment and Evaluation based only on CIE.
  - b. CIE – The test/Viva Voce/Seminar would be conducted for 50 marks.
  - c. A pass is required for the award of a degree.
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### 3. Design Thinking and Innovation

#### Evaluation Pattern

Internal Evaluation (Report) – CIE	Viva Voce Examination – SEE			Total Marks
	Internal	External	Average	
50 Marks	50 Marks	50 Marks	50 Marks	100 Marks

#### Rubrics for CIE: Presentation & Report 50 Marks

Parameter (50 Marks)	Poor (1-5)	Average (6-8)	Outstanding (9-10)
Introduction and problem identification (10 Marks)	The problem identification is not coherently done and doesn't display the understanding in the report	The problem identification is done coherently, and understanding is reasonably displayed in the report	The problem identification is very coherently done and clearly understood from the report
Pitching the idea with research framework (10 Marks)	Idea is not considered from research framework	Idea is reasonable consideration of research framework	Idea is according to the research framework
Proposing the prototype (10 Marks)	The prototype is poorly selected and exhibited in report	The prototype is reasonably appealing and exhibited in the Report	The prototype is excellent and clearly exhibited in the report
Commercialization plan & sustainability of the proposed prototype (10 Marks)	The plan considered poor clarity in commercialization & sustainability of prototype	The plan considered reasonable clarity in commercialization & sustainability of prototype	The plan considered excellent clarity in commercialization & sustainability of prototype
Originality (10 Marks)	> 40% plagiarism in the first draft report	> 20-40% plagiarism in the first draft report	< 20% plagiarism in the first draft report



Viva Voce Marks: 50 marks- Internal Examiner, 50 marks- External Examiner. Average: 50 marks

Parameter (50 Marks)	Poor (1-5)	Average (6-8)	Outstanding (9-10)
Content/Knowledge (10)	The content is not coherently done and doesn't display the understanding in the viva	The content is done coherently, and understanding is reasonably displayed in the viva	The content is very coherently done and clearly understood from the viva
Communication (10)	Communication is not up to the mark	Communication is reasonable	Excellent communication
Confidence/ Body language (10)	Lack of confidence and improper body language	Confidence level is moderate and reasonable body language exhibited	Highly confident and good body language exhibited
Question and Answers (10)	Unable to answer many queries	Answered some queries and clarity was lacking	Answered all queries with clarity
Overall impression (10)	Can be improved	Reasonable impression created	Very good impression created



#### 4. Societal Project

##### Evaluation Pattern

Internal Evaluation (Report) – CIE	Total Marks
50 marks	50

##### Rubrics for CIE: Presentation & Report 50 Marks

Parameter (50 Marks)	Poor (1-5)	Average (6-8)	Outstanding (9-10)
Social problem identification (10 Marks)	The social problem identification is not coherently done	The social problem identification is done coherently	The social problem identification is very coherently done
Problem & solution framework (10 Marks)	Poorly designed framework	Reasonable consideration of framework	Excellent framework
Creativity in solving social problem (10 Marks)	Lack of creativity in solving social problem	Moderate creativity in solving social problem	Highly creative in solving social problem
Feasibility of proposed solution (10 Marks)	The solution considered poorly feasible	The solution considered fairly feasible	The solution considered highly feasible
Real time solution adoptability (10 Marks)	Unrealistic solution	Fairly realistic solution	Highly adoptable solution



**SEE - Question Paper Pattern\***

**Semester End Examination - MBA Degree Examination**

<b>Course Code:</b>	<b>Course Name:</b>	<b>Max Marks - 100</b>
<b>Credits:</b>	<b>L-T-P</b>	<b>Exam duration – 3 Hours</b>

**GENERAL:**

- a. The students will have to answer FOUR full questions, choosing ONE full question from each module. in PART - A
- b. PART - B will be compulsory.
- c. All questions carry equal marks (20 marks)
- d. Questions to be framed from all the Modules.

**PART - A**

- a. Every question will have 3 sub questions for 3 marks, 7 marks and 10 marks respectively.
- b. Among the three sub questions, 3 marks should be a direct question, whereas 7- or 10-marks question must be an application-oriented question.

**PART - B**

- a. Case Study must be relevant to the subject and can be addressed to a problem from any module of the respective subject/from the module specified in the syllabus.
- b. It can have 3 to 4 sub questions depending on the complexity of the case.

\* Question Paper Pattern may change as per the VTU regulations and expert's feedback.

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# I SEMESTER SYLLABUS

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MANAGEMENT AND ORGANIZATIONAL BEHAVIOUR					
Course Code	MMBA1C1	CIE	50 marks	Contact Hours	52 hours
Credits (L:T:P)	4:0:0	SEE	100 marks	Exam Hours	03 hours
Course Co Ordinator:		Dr. Nethravathi N & Dr. Janmitha K L			

## COURSE CONTENT:

### COURSE OBJECTIVES

1. To provide a fundamental understanding of management, functions of a manager, process of planning and the concept of MBO.
2. To provide an insight into the organizational structure and departmentation and directing processes
3. To provide a basic understanding of dynamics of OB, the concept of personality and perception, values and attitude.
4. To create awareness about group dynamics at workplace and leadership.
5. To appraise the students on the application-oriented case studies on functions of management and behavioral processes

## SYLLABUS

### MODULE 1

**12 hours**

**Introduction**-Meaning and nature of management purpose and functions. Approaches to management- Behavioral, scientific, systems and contingency. Contribution of management thinkers-Taylor, Fayol, Elton Mayo.

**Planning**- Steps in Planning Process –Importance and Limitations – types of plans - Management by Objectives (MBO). **Decision making**- Techniques, process, modern approaches to decision making.

### MODULE 2

**12 hours**

**Organizing**- Organization Structure and Design – Formal and informal, Line and staff, functional, product, matrix, geographical, customer, virtual. Centralized and decentralized, Delegation of authority.

**Directing**-Principles and process, importance. Motivation- theories: X&Y, Maslow hierarchy, hygiene theory. **Controlling**: Nature, importance, process, techniques.

### MODULE 3

**12 hours**

**Fundamentals Organizational behavior**: Definition, importance, scope of OB.

**Personality**- Definition, determinants, traits, types-Big5, Type A&B, and personality attributes influencing OB

**Perception**- Meaning, nature, process, Common shortcuts in judging people.

**Attitude**- Definition, importance. Types of attitude – How to develop positive attitude.

### MODULE 4

**12 hours**

**Job satisfaction** –determinants, effect of job satisfaction on employee performance.

**Group and team building**- Defining and classifying group, stages of group development, types of groups, types of work teams.



**Leadership-** Meaning, theories of leadership, Blake and Mouton managerial grid, Likert's four systems of management leadership styles.

**Crisis Management-**Introduction, Leader's role in Crisis Management

## **MODULE 5**

**4 hours**

Case Study- Review and recap of case studies discussed from Unit 1 to Unit 4

### **PRACTICAL COMPONENTS**

1. Studying organizational structures of any 5 companies and classifying them into different types of organizations which are studied in Unit 2 and justifying why such structures are chosen by those organizations.
2. Preparing the leadership profiles of any 5 business leaders, studying their leadership qualities and behaviors with respects to the trait, behavioral and contingency theories studied.
3. Identifying any five job profiles, listing the various types of abilities required for those jobs and also the personality traits/attributes required for the jobs identified.

### **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

1. <https://youtu.be/rbmz5VEW90A>
2. <https://www.youtube.com/watch?v=CnStAWc7iOw>
3. <https://www.youtube.com/watch?v=RLQivEQUgUc>

### **COURSE OUTCOME**

The students will be able to:

- CO1** Understand and apply the principles and functions of management, managerial actions of planning.
- CO2** Illustrate the global context for organizing, directing and controlling.
- CO3** Demonstrate the understanding and application of concepts and principles of organization behavior, perception and personality.
- CO4** Develop skills and ability to work in groups to achieve organizational goals and ability to lead teams, Entrepreneurship.
- CO5** Demonstrate their ability in applying the managerial and behavioral concepts in real-time problems

### **RECOMMENDED BOOKS:**

1. Essentials for Management: An International Perspective – Harold Koontz, Heinz Weihrich – 2020, McGraw Hill.
2. Organizational Behaviour – Stephen Robbins, Sangi, Judge – Pearson Education, 13/e  
Organizational Behaviour, Fred Luthans, McGraw Hill, 10/e

### **REFERENCE BOOKS:**

1. Management and Behavioural Processes – K Shridhar Bhat – Himalaya Publications, 1/e, 2018
  2. Management Principles and applications – V.S.P. Rao – Excel Books, 2022
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MANAGERIAL ECONOMICS					
<b>Course Code</b>	MMBA1C2	<b>CIE</b>	50 marks	<b>Contact Hours</b>	52 hours
<b>Credits (L: T:P)</b>	4:0:0	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Co Ordinator:</b>		Dr. Divya H N & Dr. Reshma M			

## COURSE CONTENT:

### COURSE OBJECTIVES

1. To enable students to understand concepts of managerial economics, its scope, fundamental principles of managerial economics and demand analysis.
2. To develop basic understanding of production function, law of diminishing returns, costs and revenue functions, economies of scale, break even analysis and market structures.
3. To make students understand Macroeconomic environment factors affecting business.
4. To make students understand the macroeconomic policies and impact of globalization on Indian Economy.
5. To appraise the students on the application-oriented case studies in business economics.

## SYLLABUS

### MODULE 1

**12 hours**

**Introduction to Economics:** Managerial Economics: Meaning, Nature, Scope, & Significance, Uses of Managerial Economics, Role and Responsibilities of Managerial Economist, Relationship of Managerial Economics with other disciplines, Fundamental Concepts of Managerial Economics.

**Demand analysis:** Determinants of demand, Law of Demand, Exceptions to the Law of Demand, Elasticity of Demand: Price, Income & Cross elasticity, Advertising and promotional elasticity of demand. Uses of elasticity of demand for Managerial decision making.

**Law of supply:** Meaning and Elasticity of supply.

**Demand forecasting:** Meaning & Significance, Methods of demand forecasting.

### MODULE 2

**12 hours**

**Production, cost analysis & Market structure:** Concepts, production function with one variable input - Law of Variable Proportions. Production functions with 2 variable inputs and Laws of returns to scale, Indifference Curves, ISO-Quants, Economies of scale, Diseconomies of scale.

**Break Even Analysis** – Meaning, Assumptions, Determination of BEA, Limitations, Uses of BEA in Managerial decisions.

**Cost Analysis:** Concepts, Types of cost, Cost curves, Cost – Output Relationship in the short run and in the long run, LAC curve.

**Market structure:** Types and their features.

### MODULE 3

**12 hours**

**Economic Environment:** Business Environment: Meaning, features and types of business environment. **Business cycle:** Features and Phases.

**Inflation:** Meaning and its sources, Demand pull inflation, Cost push inflation, control of inflation.



**Measurement of National Income:** Basic Concepts, Components of GDP, Measuring GDP and GNP, Measurement Problems in National Income, Circular flow of Income.

#### **MODULE 4**

**12 hours**

**Economic Policies:** Monetary Policy: Meaning, Objectives, Instruments of Monetary policy. Fiscal policy: Meaning, Objectives, Instruments and Union Budget 2024-25, New Industrial Policy 1991: features. Globalization and Indian Business Environment: Meaning and Implications, Phases, Impact of Globalization on Indian Economy across Sectors. Foreign Trade: Foreign Trade Policy (2023-28): Features, Trends in India's Foreign Trade.

#### **MODULE 5**

**4 hours**

Case study: Review and recap of case studies discussed from Unit 1 to Unit 4

#### **PRACTICAL COMPONENTS**

1. Assessment of Demand Elasticity – Price, Income, Cross, Advertising.
2. Demand Forecasting: Application of qualitative and quantitative methods of demand forecasting to various sectors (Automobile, Service, Pharmaceutical, Information Technology, FMCG, Hospitality etc.) in India.

#### **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

1. [https://www.edx.org/course/introduction-to-managerial-economics-2?index=product\\_value\\_experiment\\_a&queryID=6b943cd5185c37c6c5859e37b410289a&position=3&linked\\_from=auto\\_complete](https://www.edx.org/course/introduction-to-managerial-economics-2?index=product_value_experiment_a&queryID=6b943cd5185c37c6c5859e37b410289a&position=3&linked_from=auto_complete)

#### **COURSE OUTCOME**

The student will be able to

- CO1** Apply the concepts of managerial economics, demand and supply analysis.
- CO2** Analyse the production function, break even analysis and market structure.
- CO3** Identify the macroeconomic environment factors that has an impact on business decisions.
- CO4** Understand the macroeconomic policies and impact of globalization on Indian economy.
- CO5** Appraise on the application-oriented case studies in managerial economics.

#### **RECOMMENDED BOOKS:**

1. Managerial Economics- Theory and Applications, Dr. D.M Mithani, 8 th ed., Himalaya Publications 2020
2. Managerial Economics– Geethika, Ghosh & Choudhury,3 ed, McGrawHill.2017
3. Indian Economy - 42nd Edition - V. K. Puri, S. K. Misra - 2024-25

#### **REFERENCE BOOKS:**

1. Managerial Economics: Dominic Salvatore and Ravikesh Srivastava, Oxford University,
  2. Managerial Economics–Samuelson & Marks,5/e,Wiley,2009
  3. Managerial Economics–Hirschey,2/e, Cengage Learning,2010.
  4. Managerial Economics: Case Study solutions –KaushalH,1/e, Macmillan,2011.
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FINANCIAL ACCOUNTING AND REPORTING					
<b>Course Code</b>	MMBA1C3	<b>CIE</b>	50 marks	<b>Contact Hours</b>	52 hours
<b>Credits (L:T:P)</b>	4:0:0	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Co Ordinator:</b>		Dr Vinay H N, / Mr Channakeshava H C			

## COURSE CONTENT:

### COURSE OBJECTIVES

This course will enable students to:

1. To understand the accounting principles and accounting cycle for preparation of accounts, Depreciation and inventory valuation.
2. To understand the valuation of assets and stocks of an enterprise.
3. To analyze the accounting system to prepare financial statements of an entity.
4. To know the preparation of bank cash book and pass book through statement and emerging areas of accounting.
5. To analyse companies real time financial statements and make appropriate decisions.

## SYLLABUS

### MODULE 1

**14 hours**

**Introduction to Accounting (Theory & Problems):** Book-Keeping and Accounting, Need and Types of Accounting, Users of accounting, Concepts and Conventions of Accounting, Relationship of Accounting with other disciplines, Accounting Cycle. Single Entry System, Double Entry System – Preparation of Journal, Ledgers, Trial Balance and Accounting Equations, Subsidiary Books (theory only), Cash book (problemson three column cash book only). GAAP, IFRS & Accounting Standards (IND AS).

### MODULE 2

**10 hours**

**Depreciation & Inventory Valuation (Theory & Problems):** Depreciation and Amortization Concepts and Causes, Methods of Depreciation, Problems on SLM & WDV. Concepts of Inventory and Methods of Valuation - Problems on LIFO, FIFO & weighted average.

### MODULE 3

**12 hours**

**Preparation of Final Accounts (Theory & Problems):** Preparation of Financial Statement of Company as per Companies Act of 2013 (Vertical format only).

**Analysis of Financial Performance (Theory & Problems):** Different Tools of Analysis: Comparative Statements, Common Size Statements, Trend analysis, (Problems).

**Ratio analysis** – Uses and limitations; Classification of Ratios (Problems). Cash Flow Statement – Uses and limitations(Problems only Indirect Method), Window Dressing.

### MODULE 4

**12 hours**

**Bank Reconciliation statement:** Rules for recording Receipts and Payments in cash book and bank pass book, reasons for differences in the balances of cash book and bank pass book. Meaning and Preparation of Bank reconciliation statement. (Theory and Simple Problems).

**Emerging Areas in Accounting:** Human Resource Accounting, Forensic Accounting, Green Accounting, Sustainability Reporting, Automated Accounting Processes, Cloud-based Accounting, Data Analytics & Forecasting Tools, Blockchain, AI in Accounting, Big Data in Accounting (Theory only).



## MODULE 5

4 hours

Case Study- Review and recap of case studies discussed from unit 1 to unit 4.

### Self-study topics:

To get exposed to the use of accounting software's (preferably Tally. ERP 9).

**Summary: The students will use tools and techniques in identifying and solving issues related to accounting.**

### PRACTICAL COMPONENTS

1. To collect Annual reports of the companies and analyze the financial statements using different techniques and present the same in the class.
2. To analyze the companies' cash flow statements and presenting the same in the class.
3. To identify the sustainability report of a company and study the contents.

### WEB LINKS AND VIDEO LECTURES (E-RESOURCES):

1. <https://icmai.in/upload/Students/Syllabus2016/Inter/Paper-5New.pdf>
2. <https://journals.sagepub.com/home/jaf>
3. [https://icmai.in/upload/Students/Syllabus-2012/Study\\_Material\\_New/Inter-Paper5-Revised.pdf](https://icmai.in/upload/Students/Syllabus-2012/Study_Material_New/Inter-Paper5-Revised.pdf)
4. <https://books.mec.biz/tmp/books/Y3BMTIHRR2UE7LMTZG3T.pdf>
5. <https://drnishikantjha.com/booksCollection/Financial%20Accounting%20-%20BMS%20.pdf>
6. <https://www.pdfdrive.com/accountancy-books.html>
7. [https://onlinecourses.swayam2.ac.in/nou22\\_cm18/preview](https://onlinecourses.swayam2.ac.in/nou22_cm18/preview)
8. <https://www.coursera.org/lecture/uva-darden-financial-accounting/what-is-accounting-eXQEc>
9. <https://www.youtube.com/watch?v=mq6KNVeTE3A>

### MOOC:

[https://onlinecourses.nptel.ac.in/noc23\\_mg65/preview](https://onlinecourses.nptel.ac.in/noc23_mg65/preview)

<https://www.coursera.org/learn/uva-darden-financial-accounting>

**Note: The aforesaid links and study material are suggestive in nature, they may be used with due regards to copy rights, patenting and other IPR rules.**

### COURSE OUTCOME

The student will be able to

- CO1** Demonstrate accounting concepts and conventions for preparation of accounts in real time.
- CO2** Analyse the accounting system to evaluate depreciation of assets.
- CO3** Appreciate the financial statement preparation as per the applicable entity.
- CO4** Prepare the cash book and pass book entries through bank reconciliation statement
- CO5** Apply the concepts learnt to demonstrate the understanding of financial statements and infer meaningful conclusions.

### RECOMMENDED BOOKS:

1. Financial Accounting A Text book of Accounting For Management, Maheswari SN, Maheswari Sharad
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2. Financial Accounting: A Managerial Perspective, Narayanaswamy R, 5/e, PHI, 2014
3. Financial Accounting- P. C. Tulsian –Pearson Education India, 1/e, 2002

**REFERENCE BOOKS:**

1. Financial Accounting for Management, Paresh Shah, Oxford Uni. Press, 2nd Ed., 2013
  2. Financial Accounting, Jain S. P and Narang K L, Kalyani Publishers.
  3. Accounting for Management-Text & Cases - S.K.Bhattacharya & John Dearden, Vikas Publishing House Pvt. Ltd.
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<b>MARKETING MANAGEMENT - I</b>					
<b>Course Code</b>	MMBA1C4	<b>CIE</b>	50 marks	<b>Contact Hours</b>	40 hours
<b>Credits (L:T:P)</b>	3:0:0	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Co Ordinator:</b>		Dr. Vishwanatha MR			

## **COURSE CONTENT:**

### **COURSE OBJECTIVES**

1. To provide basic understanding of marketing concepts.
2. To gain a comprehensive understanding of consumer behaviour.
3. To gain insight into the processes of market segmentation, targeting, and positioning.
4. To equip students with a comprehensive understanding of branding strategies.
5. To enable students to apply case analysis techniques effectively in the field of marketing management.

## **SYLLABUS**

### **MODULE 1**

**09 hours**

**Introduction to Marketing:** Definition, Importance of marketing, Core marketing Concepts, Marketing V/s Selling, Evolution of marketing concepts, 4P's of Marketing, Marketing, Customer Value and satisfaction, new marketing Realities – major societal forces, new company capabilities. Marketing Environment. Marketing Research: Meaning, importance, process, characteristics of Good Marketing Research, Application & Ethical consideration of Marketing Research

### **MODULE 2**

**09 hours**

**Analysing Consumer Behaviour:** Meaning and Characteristics, Importance of consumer behaviour, Factors influencing Consumer Behaviour - Cultural Factors, Social Factors, Personal Factor, Psychological Factor, Consumer Buying Decision Process, perceived risk, Cognitive dissonance, buying roles and buying motives, Black box model of consumer behaviour.

### **MODULE 3**

**09 hours**

**Segmentation, Targeting, Positioning:** Market Segmentation – Meaning. Bases for segmentation consumer market, Bases for segmentation business market. Targeting- Evaluating the segment attractiveness, Selecting the segment for targeting, choosing coverage strategy. Positioning - Meaning, Tasks involved in Positioning.

### **MODULE 4**

**09 hours**

**Brand:** meaning, role, brand vs. product, brand elements, leveraging secondary brand association, Internal branding, Co-branding, brand community. Brand extensions – advantages, disadvantages. Strong Indian Brands, global brands. Challenges to brand builders.

### **MODULE 5**

**04 hours**

Case study: Review and recap of case studies discussed from Module 1 to 4.

**Self -study topics:** Marketing Intelligence, Business market, Buying centres, brand Equity, Brand value chain, Brand Mantra, Co-branding, Ingredient branding.



## **PRACTICAL COMPONENTS**

1. Students should analyse segmentation, targeting and positioning strategies of any company of their choice.
2. Students to study the buying pattern based on demographics of consumers.
3. Analyse branding strategies used by FMCG companies.

## **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

1. [https://www.mooc-list.com/tags/marketing-management#google\\_vignette](https://www.mooc-list.com/tags/marketing-management#google_vignette)
2. [https://onlinecourses.nptel.ac.in/noc22\\_mg57/preview](https://onlinecourses.nptel.ac.in/noc22_mg57/preview)
3. <https://youtu.be/5fdx5Laavkc>
4. <https://youtu.be/Ule8n6GgE1g>
5. <https://youtu.be/ob5KWs3I3aY?t=131>

## **COURSE OUTCOME**

The student will be able to

- CO1** Understand the fundamental concept of marketing.
- CO2** Analyse consumer behaviour to formulate effective marketing strategies.
- CO3** Evaluate the effectiveness of segmentation, targeting, and positioning strategies.
- CO4** Analyse the impact of branding strategies on the success of a business.
- CO5** Analyse the given case based on various marketing concepts

## **RECOMMENDED BOOKS:**

1. Marketing Management: A South Asian Perspective - Kotler, Keller, Koshy & Jha, 16/e, Pearson Education, 2022.
2. Marketing Management- Indian Context, Global Perspective. Ramaswamy & Namakumari, SAGE, 6th Edition., 2018.
3. Marketing in the New Era by J S Panvar, Sage Publications, 2007.

## **REFERENCE BOOKS:**

1. Marketing Myopia , Theodore Levitt, Theodore Levitt , Harvard Business Press 2008.
  2. Marketing Lamb, Hair, Mc Danniel Cengage Learning 2010.
  3. Marketing by Lamb, Hair, McDaniel – Thomson, 2013 edition
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<b>BUSINESS STATISTICS</b>					
<b>Course Code</b>	MMBA1C5	<b>CIE</b>	50 marks	<b>Contact Hours</b>	52 hours
<b>Credits (L:T:P)</b>	4:0:0	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Co Ordinator:</b>		Dr. Jyothi E Singh & Ms. Seema B			

## **COURSE CONTENT**

### **COURSE OBJECTIVES**

1. To make students aware of the fundamental concepts of data collection, classification and tabulation.
2. To make students proficient in measures of central tendency and dispersion.
3. To develop students' skills in the use of techniques of correlation, regression and time series analysis.
4. To make students aware of concepts of probability and Theoretical Probability Distributions.
5. To make students understand the concepts of hypothesis testing.

## **SYLLABUS**

### **MODULE 1**

**08 hours**

**Introduction to Statistics:** Definition of Statistics – Importance and Scope of Statistics, Statistical Data: Primary and Secondary data – Sources of Data – Types of Classification of data Frequency Distribution,

**Graphical representation of Data:** Histograms, Frequency Polygon, Cumulative Frequency Curves or Ogives.

### **MODULE 2**

**12 hours**

**Measures of Central Tendency:** Average: Concept, Types – Mathematical Averages: Arithmetic Mean, Geometric Mean, Harmonic Mean: Median, Mode.

**Partition Values:** Quartiles, Deciles and Percentiles.

**Measures of Dispersion:** Range – Quartile Deviation – Mean Deviation – Standard Deviation – Variance – Coefficient of Variance.

### **MODULE 3**

**12 hours**

**Correlation:** Scatter Diagram, Karl Pearson's coefficient of Correlation, Rank Correlation, Concurrent Deviation.

**Regression:** Method of Least Squares, Curve Fitting Time Series Analysis: Introduction, Objectives of Time Series, Identification of Trend - Variations in Time Series: Secular Variation, Cyclical Variation, Seasonal Variation, and Irregular Variation —Methods of Estimating Trend.

### **MODULE 4**

**10 hours**

**Probability:** Concept and Definition - Relevance to Management Decisions - Sample Space and Events - Relevance of Permutations and Combinations to Probability - Rules of Probability, Bayes Theorem, Random Variables and Concept of Probability Distribution.

**Theoretical Probability Distributions:** Binomial, Poisson and Normal.



## **MODULE 5**

**10 hours**

Hypothesis Testing, Formulation of Hypotheses, Type I and II error, z-test, f-test, t-test and Chi-Square test, Analysis of Variance (ANOVA) -one and two way (Numericals only on paired t-test, Chi square test and ANOVA one way).

**Self study:** Data Tabulation: Diagrams & Graphs, Graphs for discrete and continuous data. Bar graphs, Pie diagram.

### **PRACTICAL COMPONENTS**

1. Students are expected to have a basic excel classes.
2. Students need to be encouraged to do a small primary research inside the classroom in groups and to analyse the data using statistical tools like Mean, SD, Correlation (Ex: Motivation, Stress etc)

### **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

<https://nptel.ac.in/courses/110107114>

### **COURSE OUTCOME**

The student will be able to

- CO1** Understand the concepts of collecting, classifying and tabulating the data
- CO2** Demonstrate measures of central tendency and the application of measures of dispersion make decisions.
- CO3** Analyse the data using correlation, regression and time series techniques
- CO4** Understand and applying the basic concepts of probability and probability distribution.
- CO5** Applying the basic concepts of hypothesis testing.

### **RECOMMENDED BOOKS:**

1. Fundamentals of Statistics 7/e, S. C. Gupta, Himalaya Publishing House, 2019
2. Statistical Methods 46/e, S. P. Gupta, Sultan Chand & Sons, 2023

### **REFERENCE BOOKS:**

1. Fundamentals of Business Statistics, J.K.Sharma, Pearson, 2018
  2. Business Statistics –R S Bhardwaj, Excel Books, 2018
  3. Statistics for Management, Richard I Levin, Pearson Education / PHI, 7/E,2017
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<b>MANAGERIAL COMMUNICATION</b>					
<b>Course Code</b>	MMBA1C6	<b>CIE</b>	50 marks	<b>Contact Hours</b>	40 hours
<b>Credits (L:T:P)</b>	3:0:0	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Co Ordinator:</b>		Dr. Janmitha K L			

## **COURSE CONTENT:**

### **COURSE OBJECTIVES**

1. To learn the importance and fundamentals of business communication.
2. To prepare presentation using advanced visual support and understand the basics of negotiation and business etiquette.
3. To understand the mechanics of external business written communication.
4. To practice the case method of learning and improve on employability skills.
5. To develop group communication skills and know the technological advancements in business communication.

## **SYLLABUS**

### **MODULE 1**

**09 hours**

#### **Introduction:**

**Communication:** Definition and classification, role of communication, characteristics of successful communication, purpose of communication, process of communication, importance of communication in management, communication structure in organization and barriers to communication.

**Oral Communication:** Concept, principles of successful oral communication, conversation control, two sides of effective oral communication, public speaking. Nonverbal communication: Meaning, classification.

**Case method of Learning:** Types of cases, case analysis–process, dos and don'ts for case preparation-reading a case properly, case analysis approaches.

### **MODULE 2**

**09 hours**

**Written communication:** Principles of effective writing, 3x3 writing process. Listening: Process of listening, Nonverbal communication: Meaning, classification.

**Writing Business Letters:** Introduction, Principles of Business Letter Writing, Types of Business Letters, Format for Business Letters. Memos -Meaning, purpose, format.

**Emails:** Prefatory elements, beginning, formality, close, emphasis tools and Initialisms.

**Reports:** Purpose, Report Format (Short-Long), Business proposals, Research report writing Graphics

### **MODULE 3**

**09 hours**

**Presentation skills:** Purpose, elements of presentation designing presentation. Advanced visual support for business presentation.

**Negotiations skills:** Nature and need for negotiation, factors affecting negotiation, stages of negotiation process, negotiation strategies.

**Business Etiquette:** Meaning and Types

**Employment communication:** Introduction, writing CVs, Group discussions, Interview skills, Mock Interview.



## **MODULE 4**

**09 hours**

**Group communication:** Meetings, Planning and conducting meetings - Notice, Agenda and Minutes of the Meeting, common complaints about meetings, virtual meeting, hybrid meetings, remote meetings, timing venue of meeting.

**Media management:** The press release, press conference, media interviews, Impact of technological advancement on Business communication, Networks teleconferencing, video conferencing, Social networks, Social media communication and Blogs.

## **MODULE 5**

**04 hours**

**Case Study:** Review and recap of case studies discussed from Module 1 to Module 4

## **PRACTICAL COMPONENTS**

1. Students enact and analyze the non-verbal cues.
2. Demonstrating Video conferencing & teleconferencing in the class.
3. Conduct a mock meeting of students in the class identifying an issue of their concern. The student should prepare notice, agenda and minutes of the meeting.
4. Each student to give presentation of 5 minutes (this can be spread throughout the semester) and to be evaluated by the faculty.
5. Organize a mock press conference addressing to the launch of new product by an organization.
6. Mock Interview and Group Discussion.
7. Review the book 'How to Talk to Any One' by Leil Lowndes.

## **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

1. International Business Communication - <https://nptel.ac.in/courses/110105051>
2. English for Effective Business Speaking (Coursera) - <https://www.mooclist.com/tags/communication-skills>

## **COURSE OUTCOME**

The student will be able to:

- CO1** Understand the principles of business communication and apply the necessary communication skills for enhancing interpersonal skills.
- CO2** Design a presentation using advanced visual support and apply appropriate negotiation strategies for a business problem.
- CO3** Apply the different forms of written communication techniques to make effective internal and external business correspondence.
- CO4** Demonstrate the ability of analysing a case and develop employability skills.
- CO5** Demonstrate the group communication skills and use technological advancement for creating a conducive work environment.

## **RECOMMENDED BOOKS:**

1. Chaturvedi P. D, & Mukesh Chaturvedi, Business Communication: Concepts, Cases and Applications-4/e, Pearson Education, 2020.
  2. Penrose, Rasberry, Advanced Business Communication, Myers, 5/e, Cengage Learning, 2004
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**REFERENCE BOOKS:**

1. Mary Ellen Guffey, Business Communication, Process and Product, Thomson Learning
2. Ober and Newman, Communicating in Business, Cengage learning, 8th Edition, 2018.



<b>COMPUTER APPLICATIONS IN MANAGEMENT</b>					
<b>Course Code</b>	MMBA1C7	<b>CIE</b>	50 marks	<b>Contact Hours</b>	52 hours
<b>Credits (L:T:P)</b>	2:0:1	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Co Ordinator:</b>		Dr. Nethravathi N , Ms Seema B			

## **COURSE CONTENT:**

### **COURSE OBJECTIVES**

1. To provide basic understanding of information system.
2. To impart the basic understanding of components of information system and managing data.
3. To provide insights of ERP and reporting standards.
4. To make students understand the Business Intelligence and solutions.
5. To provide the ability to apply the concepts of computer applications in real time business scenarios.

## **SYLLABUS**

### **MODULE 1 05 hours**

**Introduction to Information systems:** Concepts and definitions – Data, Information, Knowledge, Value and characteristics of information, System concepts, system performance and standards, information system, the role of IS department, Information technology jobs. Types of Information Systems: Types of organizational Information systems.

### **MODULE 2 05 hours**

**Data information System:** An overview of Management Information systems, Functional aspects of MIS; database approach, DBMS, Data warehousing, Data Mart, Data Mining, Data Governance, Big Data; Digital Data and its various format: Structured and Unstructured- Managing, storing, Extracting and usage.

### **MODULE 3 06 hours**

**Enterprise Resource Planning Systems:** Information systems that support organizations and Network system: Transaction processing systems, Functional area information systems, Customer Relationship Management Systems, Electronic data interchange.

### **MODULE 4 06 hours**

**Business Intelligence:** Introduction, Definition, Usage and application, BI component Framework, BI for various domains, BI Users and applications: Technology solutions and Business Solutions.

**Electronic commerce:** Applications and issues, overview of E-business and E-commerce, B2B, B2C, Electronic payment, Ethical and legal issues in E-Business.

### **MODULE 5 04 hours**

**Case study:** Review and recap of case studies discussed from Module 1 to 4.



## **PRACTICAL COMPONENTS – 26 Hours**

1. Introduction to Word: the user interface and views, creating and saving a word document, formatting a document, using styles, tables and lists, functions, charts and illustrations, using references, TOC and TOF.
2. Introduction to power point, the user interface and views, creating and saving a presentation, configuring and presenting slideshow, inserting and formatting slides and shapes, applying transitions and animations.
3. Introduction to excel, the user interface and views, creating and saving workbooks and worksheets, managing cells and ranges. Applying formulae and basic functions (auto sum, text and logical) creating charts and objects. Range Names, text functions, three dimensional formulas.

## **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

### **MOOC's and NPTEL-**

1. [https://onlinecourses.swayam2.ac.in/cec24\\_cs18/preview](https://onlinecourses.swayam2.ac.in/cec24_cs18/preview)
2. <https://www.youtube.com/watch?v=ZPkhZtPhYQA>

## **COURSE OUTCOME**

The student will be able to

- CO1** Understand the benefits of information systems in the organization.
- CO2** Evaluate the components of information system and managing data.
- CO3** Demonstrate the conceptual skills in ERP and reporting standards.
- CO4** Present the solutions using Business Intelligence in E-Commerce.
- CO5** Apply the concepts to provide solutions in realtime.

## **RECOMMENDED BOOKS:**

1. Fundamentals of Business Analytics- 2nd Edition, R.N.Prasad, Seema Acharya, 2016
2. Introduction to Information Technology – Turban, Rainer, Potter- Wiley- Second Edn, 2014

## **REFERENCE BOOKS:**

1. Principles of Information Systems a managerial approach – Ralph Stair, George Reynolds – Cengage learning- 2015
  2. Microsoft Office 2013 Bible, Lisa A. Bucki, John Walkenbach, Michael Alexander, Dick Kusleika, Faithe Wempen EdBott, Woody Leonard, John Wiley & Sons, 1st edition 2013.
  3. Principles of Information Systems– Ralph Stair, George Reynolds – Cengage learning. 2018
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# **II SEMESTER SYLLABUS**

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OPERATIONS RESEARCH					
<b>Course Code</b>	MMBA2C1	<b>CIE</b>	50 marks	<b>Contact Hours</b>	52 hours
<b>Credits (L:T:P)</b>	4:0:0	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Coordinator:</b>	Dr. Jyothi. E. Singh & Ms. Seema B				

### COURSE CONTENT:

#### COURSE OBJECTIVES

1. To introduce the basic concepts of Operations Research and Linear Programming Problem with its application.
2. To bring out the concept of transportation and assignment models and their utility in business.
3. To introduce network analysis and its application in management.
4. To provide fundamental understanding of theory of Games and queuing system in business situations
5. To understand Monte Carlo method of simulation.

### SYLLABUS

#### MODULE 1

**10 hours**

**Introduction to Operations Research:** Origin, Development, Meaning and Definition of Operation Research; Scope, Techniques, Characteristics and Limitations of Operation Research; Methodology and Models in OR (only theory)

**Linear Programming Problem (LPP)** Application of LPP in Management, Advantages of LPP (only theory) Formulation of LPP Solution of LPP by Graphical method: Infeasible and Unbounded Solution, Formulation of Dual of a LPP.

#### MODULE 2

**11 hours**

**Transportation Models:** General Structure; Various methods for finding initial solution: Maximization and Minimization problems Northwest Corner Method, Least Cost Method, Vogel's Approximation Method; Finding Optimal Solution: Modified Distribution method; Variations: Unbalanced Transportation Problem, Degenerate Solution.

**Assignment problems:** General Structure; Finding Optimal Solution; Variations: Non square matrix, Maximization problem, Restrictions on Assignments, Alternate Optimal solutions.

#### MODULE 3

**11 hours**

**Network Analysis:** Terminology; Networking Concepts; Rules for drawing network diagram; CPM Computations: CPM Terminology, finding critical path – Different Floats; PERT Computations: Computation of earliest and latest allowable times, Probability of meeting the scheduled dates; difference between PERT and CPM, Crashing of a Project (Theory only)

#### MODULE 4

**10 hours**

**Theory of Games:** Terminology; Two-person zero sum game; Solution to games: Saddle point, dominance rule, Value of the game, mixed strategy, Graphical method of solving a game – (2 x n) and (m x 2) games.

**Queuing Models:** Introduction; Characteristics of Queuing models, Models for Arrival and Service Times; Single Poisson arrival with Exponential Service Rate; Applications of Queuing models.



## **MODULE 5**

**10 hours**

Simulation of Management Systems: Terminology, Process of Simulation, Monte Carlo Method, Waiting Line Simulation Method, Inventory Management Simulation, Marketing Management Simulation, Financial Management Simulation

**Self study component: Application of Operation**

### **PRACTICAL COMPONENTS**

1. Analyze various organizational problems using LPP, Assignments and Game theory principles.
2. Applying techniques of OR for project management.
3. Evaluate the constraints and challenges faced by the manufacturing and service organizations using methods of operation research.

### **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

Operations Research - <https://nptel.ac.in/courses/111107128>

### **COURSE OUTCOME**

The student will be able to

- CO1** Demonstrate the ability to apply the concepts of Operations Research and LPP for business decision making.
- CO2** Use appropriate transportation and assignment models to get feasible and optimum solutions.
- CO3** Design the project network for business decision making.
- CO4** Apply game theory and queuing theory for optimizing business decisions.
- CO5** Apply the simulation models in various business domains.

### **RECOMMENDED BOOKS:**

1. N D Vohra, Quantitative Techniques in management, McGraw Hill 2015
2. V.K. Kapoor, Operations Research, Sultan Chand Publishers

### **REFERENCE BOOKS:**

1. H.A. Taha, Operation research, Person Publication 2012
  2. S. D. Sharma, Operations Research, Kedar Nath and Ram Nath & Co. Ltd.2010
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<b>HUMAN RESOURCE MANAGEMENT</b>					
<b>Course Code</b>	MMBA2C2	<b>CIE</b>	50 marks	<b>Contact Hours</b>	52 hours
<b>Credits (L:T:P)</b>	4:0:0	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Co-ordinator:</b>	Dr. Nethravathi N & Dr. Divya H. N				

### **COURSE CONTENT:**

#### **COURSE OBJECTIVES**

1. To understand the models and functions of human resources management.
2. To discuss the demand and supply elements of human resource management.
3. To demonstrate the importance of recruitment and selection at workplace and solve the workplace problems through employee training need analysis.
4. To apply and understand performance appraisal and develop scientific appraisal and reward methods for employees.
5. To understand the real time cases based on the market developments.

### **SYLLABUS**

#### **MODULE 1**

**12 hours**

**Human resource management and personnel management:** Meaning, scope and importance of human resource management, models of human resource management, evolution of human resource management, the factors influencing human resource management, human resource management and line managers, the HR competencies, human resource management and firm performance. HR roles critical for business survival, future of human resource.

#### **MODULE 2**

**12 hours**

**Human resource planning:** Meaning and importance of HR planning, factors affecting HR planning, benefits of HR planning, HRP process, tools for demand forecasting, attributes of an effective HR planning, barriers to HR planning, the challenges for HR, process of job analysis and job evaluation. Innovative human resource management practices contributing to sustainable to organizational innovation

#### **MODULE 3**

**14 hours**

**Recruitment and selection:** Meaning, scope and importance of recruitment, recruitment policies, factors influencing recruitment, recruitment process, sources, evaluation of recruitment process, recruitment strategy; selection, future trends in recruitment; selection process; selection tests; factors influencing selections, challenges in selection.

**Learning, training, and development:** Meaning, scope and importance training, learning and development, learning theories, the future of training, learning, and development, crystal gazing into the future, world of learning. process of training and techniques of training, readiness for future human resource management.

#### **MODULE 4**

**10 hours**

**Performance Management and Appraisal:** Objectives of Performance Management, Performance Management and Performance Appraisal, Common Problems with Performance Appraisals, Performance Management Process, Types of Performance Rating Systems, Future of Performance Management.

**Compensation and Benefits:** Introduction, Definitions, Total Compensation, Total



Rewards System, Forms of Pay. Theories of Compensation, Establishing Pay Rates, Employee Benefits.

## **MODULE 5**

**4 hours**

**Case Study:** Review and recap of case studies discussed from Module 1 to Module 4.

### **PRACTICAL COMPONENTS**

1. A visit to Organization and interact with HR Manager and list out the roles played by HR manager.
2. Meet Recruitment Manager to discuss about the interview process.
3. Design a recruitment advertisement for a job of your choice.
4. Demonstrate a role play for mock interview.

### **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

MOOC's and NPTEL: <https://swayam.gov.in/explorer?searchText=hrm>

### **COURSE OUTCOMES:**

**At the end of the course the student will be able to:**

- CO1** Recognize the importance of Human Resource Management as Strategic function of Management.
- CO2** Demonstrate the process of Human Resource Planning.
- CO3** Analyse recruitment and selection sources and techniques.
- CO4** Execute the Training Need Analysis .and evaluate the employee performance and compensation methods.
- CO5** Apply the HR concepts in real time situations.

### **RECOMMENDED BOOKS:**

1. Human Resource Management, Theory and Practices, R. C. Sharma, Nipun Sharma, Sage Publication India Pvt. Ltd., 2019
2. Human Resource Management, V.S.P Rao, 2014
3. Human Resource Management: Concepts, Amitabha Sengupta, Sage Publication India Pvt. Ltd. 2019.

### **REFERENCE BOOKS:**

1. Human Resource Management, Gary Dessler& Biju Varrkey, Sixteenth Edition | By Pearson
  2. The HR Scorecard: Linking People, Strategy, and Performance, Brian Becker, Dave Ulrich, and Mark A. Huselid, Harvard Business School Press
  3. Strategic Management: Planning for Domestic and Global Competition, John A. Pearce Richard B. Robinson, McGraw Hills Education, 14/e 2015
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FINANCIAL MANAGEMENT					
<b>Course Code</b>	MMBA2C3	<b>CIE</b>	50 marks	<b>Contact Hours</b>	52 hours
<b>Credits (L:T:P)</b>	4:0:0	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Co Ordinator:</b>	Dr. Vinay H N & Mr. Channakeshava H C				

### COURSE CONTENT:

#### COURSE OBJECTIVES

1. To understand the basic concepts of financial management and applications of time value of money.
2. To calculate the cost of capital for a business or project.
3. To determine the cash flow estimation and evaluate investment proposals.
4. To understand the concepts of working capital management, Capital structure and dividend decisions of a firm.
5. To work on various functions of financial management using real time data.

### SYLLABUS

#### MODULE 1

**12 hours**

**Introduction:** Meaning and objectives of Financial Management, Changing Role of Finance Managers. Interface of Financial Management with other Functional Areas and Decisions in Finance.

**Indian Financial System:** Financial Markets, Financial Instruments, Financial Institutions and Financial Services.

**Time Value of Money:** Meaning of Time Value of Money –Future Value of Single Cash Flow & Annuity, Present Value of Single Cash Flow, Annuity & Perpetuity. Simple Interest & Compound Interest, Capital Recovery & Loan Amortization. (Theory & Problem).

#### MODULE 2

**12 hours**

**Sources of Financing:** Shares, Debentures, Term Loans, Lease Financing, Hybrid Financing, Venture Capital, Angel Investing and Private Equity, Warrants and Convertibles (Theory Only).

**Cost of Capital:** Basic Concepts - Cost of Debenture Capital, Cost of Preferential Capital, Cost of Term Loans, Cost of Equity Capital (Dividend Discounting and CAPM Model) - Cost of Retained Earnings - Determination of Weighted Average Cost of Capital (WACC) and Marginal Cost of Capital. (Theory & Problem).

#### MODULE 3

**12 hours**

**Investment Decisions:** Capital Budgeting Process, Investment Evaluation Techniques – (Payback Period, Accounting Rate of Return, Net Present Value, Internal Rate of Return, Profitability Index, Modified Internal Rate of Return and Discounted Payback Period). Estimation of Project Cash Flows, Replacement of Capital Project. (Numerical problems).

#### MODULE 4

**12 hours**

**Working Capital Management:** Estimation of Working Capital Requirements of a Firm – Current Assets, Current Liabilities, Concept of Gross & Net Working Capital, (Does not include Cash, Inventory & Receivables Management). Determination of Operating Cycle and Cash Cycle. (Problems on Estimation of Working Capital).

**Capital Structure and Dividend Decisions:** Planning the Capital Structure - Governance of Equity and Debt, (Does not include Capital Structure Theories) Factors Affecting Capital



Structure Decisions. Leverages, EBIT and EPS analysis.

**Dividend policy** – Factors Affecting the Dividend Policy - Dividend Policies- Stable Dividend, Stable Payout (No Dividend Theories to be covered). (Problems on Leverages, EBIT and EPS analysis).

## **MODULE 5**

**4 hours**

**Case Study:** Review and recap of case studies discussed from Module 1 to Module 4.

### **PRACTICAL COMPONENTS**

1. Identifying the small or medium sized companies and understanding the Investment evaluation techniques used by them.
2. Using the annual reports of selected companies, students can study the working capital management employed by them. Students can also compare the working capital management of companies in the same sector.
3. Students can choose the companies that have gone for stock split and Bonus issue in the last few years and study the impact of the same on the stock price.
4. Students can study any five companies' capital structure

### **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

1. <https://www.pdfdrive.com/financial-management-and-analysis-workbook-step-by-step-exercises-and-tests-to-help-you-master-financial-management-and-analysis-e158595305.html>
2. <https://www.pdfdrive.com/fundamentals-of-financial-management-concise-sixth-edition-e20229517.html>
3. [https://www.youtube.com/watch?v=CCQwz\\_Gwo6o](https://www.youtube.com/watch?v=CCQwz_Gwo6o)

### **MOOC:**

1. <https://www.coursera.org/specializations/financial-management>
2. [https://www.youtube.com/watch?v=CCQwz\\_Gwo6o](https://www.youtube.com/watch?v=CCQwz_Gwo6o)
3. <https://www.digimat.in/nptel/courses/video/110107144/L01.html>

### **COURSE OUTCOME**

The student will be able to

<b>CO1</b>	Apply the fundamental concepts of Finance and time value of money.
<b>CO2</b>	Evaluate the investment decisions
<b>CO3</b>	Estimate working capital requirements
<b>CO4</b>	Analyse the capital structure and dividend decisions
<b>CO5</b>	Analyse various applications of finance in real time scenario

### **RECOMMENDED BOOKS:**

1. Financial Management, M.Y. Khan & P.K. Jain, TMH 7/e, 2017
2. Financial Management, Prasanna Chandra, TMH 10/e, 2019.
3. Financial Management, I.M. Pandey, Vikas Publishing, 11/e 2015.

### **REFERENCE BOOKS:**

1. Fundamentals of Financial Management - Brigham & Houston, Cengage Learning.
  2. Fundamentals of Financial Management – Vanhorne & Wachowicz, PHI.
  3. Principles of Managerial Finance - Gitman, Pearson Education.
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STRATEGIC MANAGEMENT					
<b>Course Code</b>	MMBA2C4	<b>CIE</b>	50 marks	<b>Contact Hours</b>	40 hours
<b>Credits (L:T:P)</b>	3:0:0	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Co-ordinator:</b>	Dr. Divya. H. N & Dr. Reshma. M				

## COURSE CONTENT:

### COURSE OBJECTIVES

1. To provide insights into the core concepts of strategic management.
2. To evaluate various business strategies in dynamic market environments.
3. To gain insights on internal analysis of Business.
4. To formulate business strategies and plan for its effective implementation.
5. To solve various real time cases related to strategic management

## SYLLABUS

### MODULE 1

**09 hours**

**Introduction:** meaning and nature of strategic management, its importance and relevance. Characteristics of strategic management, the strategic management process. Relationship between a company's strategy and its business model.

### MODULE 2

**09 hours**

**External analysis:** strategically relevant components of a company's external environment industry analysis factors driving industry change and its impact - porter's dominant economic feature competitive environment analysis porter's five forces model key success factors concept and implementation.

### MODULE 3

**09 hours**

**Internal analysis:** describe strategic vision, mission, goals, long term objectives, short-term objectives and discuss their value to the strategic management process, resources, capabilities, competencies, resource based view of the firm (RBV), balanced score card, McKinsey 7S Model, SWOC analysis, value chain analysis, benchmarking, GE 9-cell matrix and BCG matrix.

### MODULE 4

**09 hours**

**Strategy formulation, Implementation and control:** business strategies, corporate strategies, growth strategies, Ansoff's matrix, stability strategies, retrenchment strategies, porter's generic strategies: low cost, differentiation, best cost, focused low cost and focused differentiation, blue ocean and red ocean strategy. International business level strategies, strategy implementation and control meaning, process.

### MODULE 5

**04 hours**

**Case study:** Review and recap of case studies discussed from Module 1 to Module 4

### PRACTICAL COMPONENTS

1. Analysing the Mission and Vision statements of selected Indian companies.
2. Applying Michael Porter's model to any one industry (Retail, Telecom, Infrastructure, FMCG, Insurance, Banking etc).



3. Internal Analysis & Strategies of a listed company in the form of the report to be submitted.
4. Identify a company that has performed very badly compared to its competitors. Collect information on why the company failed. What were the issues in strategy and execution that were responsible for the company's failure in the market; analyse the internal and external factors.
5. Conduct SWOT analysis of companies around your campus.

### **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

MOOC: <https://www.mooc-list.com/course/developing-strategies-win-marketplace-coursera>

### **COURSE OUTCOME**

The student will be able to

- CO1** Understand the fundamental concepts of Strategic Management.
- CO2** Analyse various models related to external analysis of Business to gain competitive advantage.
- CO3** Analyse the internal environmental components for the effective implementation of strategic.
- CO4** Identify appropriate strategies to apply in various business scenarios.
- CO5** Apply various strategic management tools to solve real time problems.

### **RECOMMENDED BOOKS:**

1. Crafting and Executing Strategy: The Quest for Competitive Advantage – Concepts and Cases , Arthur A. Thompson Jr. Margaret A. Peteraf John E. Gamble A. J. Strickland III Arun K. Jain , McGraw Hill Education , McGraw Hill Education , 19/e 2017
2. Strategic Management: A South-Asian Perspective , Michael A. Hitt R. Duane Ireland Robert E. Hoskisson S. Manikuttu , Cengage Learning 9/e 2016

### **REFERENCE BOOKS:**

1. Strategy: Theory & Practice , Stewart Clegg Chris Carter Marting Kornberger Jochen Schweitzer , Sage Publications , 3/e ,2020
  2. Strategy Management: Theory & Practice, John Parnell , Biztantra , 2004
  3. Strategic Management: Planning for Domestic and Global Competition , John A. Pearce Richard B. Robinson , McGraw Hill Education
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<b>BUSINESS RESEARCH METHODS</b>					
<b>Course Code</b>	MMBA2C5	<b>CIE</b>	50 marks	<b>Contact Hours</b>	52 hours
<b>Credits (L:T:P)</b>	4:0:0	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Co-ordinator:</b>	Dr. Jyothi. E. Singh & Dr. Reshma. M				

## **COURSE CONTENT:**

### **COURSE OBJECTIVES**

1. To understand how literature reviews can help in problem formulation and Research design.
2. To understand the basic components of research design and sampling techniques for conducting research
3. To develop skills in designing questionnaires.
4. To equip students with various research analytical tools used in business research.
5. To understand various forms of IPR.

## **SYLLABUS**

### **MODULE 1**

**10 hours**

**Introduction to Business Research:** Meaning, types, process of research- management problem, defining the research problem, formulating the research Hypothesis, developing the research proposals, research design formulation, sampling design, planning, and collecting the data for research, data analysis and interpretation. Research Application in business decisions, Ethical issues in business research. Features of a good research study.

**Literature review:** Conducting Literature review. Importance of Literature Review in Research

### **MODULE 2**

**11 hours**

**Business Research Design:** Meaning, types and significance of research design, errors affecting research design.

**Sampling:** Concepts, Types of sampling designs, non-probability sampling, probability sampling and Complex random sampling Designs. Errors in sampling.

**Determination of Sample size:** Sample size calculation for mean and proportion.

### **MODULE 3**

**10 hours**

**Questionnaire design:** Meaning, process of designing questionnaire.

**Measurement and Scaling Techniques:** Basic measurement scales-Nominal scale, Ordinal scale, Interval scale, Ratio scale. Attitude measurement scale - Likert Scale, Semantic Differential Scale, Thurston scale

**Multi-Dimensional Scaling:** Non comparative scaling techniques

### **MODULE 4**

**10 hours**

**Data Collection:** Meaning, types.

**Data collection methods:** Observations, survey, and interview techniques. Qualitative Techniques of data collection Secondary data Sources: advantages and disadvantages. **Data**

**Processing and Analysis:** Editing, Coding, Classification, Tabulation, Validation. Analysis and Interpretation



## **MODULE 5**

**11 hours**

**Ethics in business research:** Research Ethics meaning, Ethical treatment of participants, Ethics and the sponsor, Ethical behaviour of researchers and team members, methods to search required information.

**Introduction to Reference Management Tools:** create bibliographies and in-text citations, import references from online sources, and share references with other researchers.

**Intellectual Property Rights:** Meaning and Concepts of Intellectual Property, Nature and Characteristics of Intellectual Property, Kinds of Intellectual Property. Protection of Intellectual Property Rights (IPRs)- A brief summary of: Patents, Copyrights, Trademarks, TRIPS and TRIMS, Geographical Indications -Establishment of WIPO-Application and Procedures.

## **PRACTICAL COMPONENTS**

1. The students are expected to do a mini project based on primary data according to the topic approved by the course coordinator.
2. The mini project report should contain necessary information on statement of the problem, review of literature, objectives, research design, methodology, data analysis, findings, and suggestions.

## **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

Understanding Research Methods-<https://www.coursera.org/learn/research-methods>

## **COURSE OUTCOME**

The student will be able to

- CO1** Define a research problem and hypothesis based on literature review and a device suitable Research Design for data collection.
- CO2** Identify the appropriate sampling techniques and estimate the sample size for collecting data.
- CO3** Design questionnaire to collect primary data.
- CO4** Demonstrate knowledge and understanding of data analysis and interpretation.
- CO5** Gain insights into Ethics in Business Research and various forms of IPR in India.

## **RECOMMENDED BOOKS:**

1. C R Kothari, Research Methodology Methods and Techniques, 4/e, 2020, New Age International Publishers Ltd.
2. Deepak Chawla, Neena Sondhi, Research Methodology: concepts and cases, 2nd edition, Vikas publishing house pvt ltd, 2018
3. Donald R. Cooper & Pamela Schindler, Business Research Methods, TMH/9e/2007

## **REFERENCE BOOKS:**

1. Andy Field, Discovering Statistics using IBM SPSS Statistics, 4e, Sage Publication
  2. Andrew F. Hayes, Introduction to Mediation: A Regression-Based Approach (Methodology in the Social Sciences), Guilford Publications
  3. Intellectual Property Rights. India, IN: Neeraj, P., & Khusdeep, D. (2014). P H I learning Private Limited.
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MARKETING MANAGEMENT –II					
<b>Course Code</b>	MMBA2C6	<b>CIE</b>	50 marks	<b>Contact Hours</b>	40 hours
<b>Credits (L:T:P)</b>	3:0:0	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Co-ordinator:</b> Dr. Vishwanatha MR					

## COURSE CONTENT:

### COURSE OBJECTIVES

1. To provide basic understanding of product strategies.
2. To develop an in-depth understanding of pricing strategies.
3. To introduce the fundamentals of Distributions strategies.
4. To equip students with a comprehensive understanding of promotion strategies.
5. To help the students on the application-oriented case analysis in the field of marketing management.

## SYLLABUS

### MODULE 1

**9 hours**

**Product:** Meaning of product, product levels, product hierarchy, Classification of products, Product differentiation, product line and product mix, Managing Product Life Cycle. New Product Development, packing - meaning, objective, packaging as a marketing tool, Role of colour in packaging, labelling.

### MODULE 2

**9 hours**

**Pricing:** Meaning, Significance of pricing, consumer psychology and pricing- reference prices, price–quality inferences, and price endings. Price-adaptation strategies- geographical pricing, price discounts and allowances, promotional pricing, and differentiated pricing. Factor influencing pricing (Internal factor and External factor), objectives, Pricing Strategies- Value based, Cost based, Market based, Competitor based.

### MODULE 3

**9 hours**

**Place:** Distribution channel – meaning, purpose, Channel functions, channel levels, Factors Affecting Channel Choice, Channel Design decisions, Channel Management Decision, Channel Conflict- meaning, causes. Managing channel conflict. E-commerce: Market size, emerging trends – AI, Augmented reality, Chatbot, voice search etc.

### MODULE 4

**9 hours**

**Promotions:** Marketing communications, Communication process model, steps in developing effective communication. Marketing Communication Mix - advertising, Sales Promotion, Personal selling, Direct Marketing, Publicity, Public Relations. Emerging Trends in Marketing: Green Marketing, Event Marketing, Neuromarketing, Digital and social media Marketing. Influencer Marketing.

### MODULE 5

**4 hours**

Case Study: Review and recap of case studies discussed from Module 1 to Module 4.

**Self-study topics:** Service mix, New service realities, Steps in Setting price, strategies to respond for price change, Omni-channel strategies, Private labels, AIDA model.

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## **PRACTICAL COMPONENTS**

1. Analyse Product Life Cycle of few successful and failed product.
2. Analyse pricing strategies used by FMCG companies
3. Students to study the distribution strategies used by selected companies.

## **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

1. [https://www.mooc-list.com/tags/marketing-management#google\\_vignette](https://www.mooc-list.com/tags/marketing-management#google_vignette)
2. [https://onlinecourses.nptel.ac.in/noc22\\_mg57/preview](https://onlinecourses.nptel.ac.in/noc22_mg57/preview)
3. <https://youtu.be/ob5KWs3I3aY?t=131>
4. <https://www.youtube.com/watch?v=OGs2YsqvWDg>
5. <https://youtu.be/mL7MASrDIQ>

## **COURSE OUTCOME**

The student will be able to

- CO1** Understand the fundamental concepts of Product strategies.
- CO2** Analyse the significance of pricing strategies in marketing..
- CO3** Develop the effective distribution strategies.
- CO4** Develop the effective promotion strategies.
- CO5** Analyse the given case based on various marketing concepts.

## **RECOMMENDED BOOKS:**

1. Marketing Management: A South Asian Perspective - Kotler, Keller, Koshy & Jha, 16/e, Pearson Education, 2022
2. Marketing Management- Indian Context, Global Perspective. Ramaswamy & Namakumari, SAGE, 6th Edition., 2018.
3. Marketing in the New Era by J S Panvar, Sage Publications, 2007

## **REFERENCE BOOKS:**

1. Marketing Myopia , Theodore Levitt, Theordore Levitt , Harvard Business Press 2008.
  2. Marketing Lamb, Hair, Mc Dannel Cengage Learning 2010.
  3. Marketing by Lamb, Hair, McDaniel – Thomson, 2013 edition
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<b>BUSINESS ANALYTICS</b>					
<b>Course Code</b>	MMBA2C7	<b>CIE</b>	50 marks	<b>Contact Hours</b>	52 hours
<b>Credits (L:T:P)</b>	2:0:1	<b>SEE</b>	100 marks	<b>Exam Hours</b>	03 hours
<b>Course Co-ordinator:</b>	Ms. Seema B & Dr. Reshma.M				

## **COURSE CONTENT:**

### **COURSE OBJECTIVES**

1. To provide understanding of fundamentals of business analytics and Descriptive Analytics and its application in Business decision making.
2. To provide basic understanding of clustering method and its application.
3. To provide an understanding of big data analytics and its use in business decision making.
4. To provide an understanding about predictive analytics and Application of Analytics
5. To solve various real time business cases using data analytics tools.

## **SYLLABUS**

### **MODULE 1**

**06 hours**

Introduction to Business Analytics, Challenges; Data Analytics- Introduction to Descriptive Analytics, Data Types and Scales: Structured and Unstructured data, Cross-sectional, Time series and Panel Data; Data Measurement scales: Nominal, Ordinal, Interval and Ratio; Importing and exporting of data, Data Visualization using Tableau.

### **MODULE 2**

**05 hours**

Introduction to Simple Linear Regression, Model Building, Estimation of parameters and Interpretation, Validation of SLR model, Outlier Analysis; Introduction to Multiple Linear Regression, Model Building and Interpretation.

### **MODULE 3**

**05 hours**

Introduction to Big Data; Need for Big data; Characteristics of Big Data; structure of Big Data (Structured, Semi-structured, Unstructured and real time data); Benefits and barriers of Big Data Analytics; Mobile Data Analytics; Social Media Analytics.

### **MODULE 4**

**06 hours**

Introduction to Predictive Analytics; Role of Business Analyst and Data Scientist. Business Analytics Optimization (BAO); Online Analytical Processing (OLAP); Online Transaction Processing (OLTP).

Financial Analytics; HR Analytics; Marketing Analytics; Supply Chain Analytics; Production and Operations analytics.

### **MODULE 5**

**04 hours**

Case Study: Review and recap of case studies discussed from Module 1 to Module 4.

**Self study component:** Ethical considerations in data usage.

### **PRACTICAL COMPONENTS – 26 hours**

1. Importing data set into Tableau, Data Cleaning and Tooltip option.
2. Demonstration of sorting, filtering and types of charts.



3. Demonstration of Histogram and line chart.
4. Demonstration of Heat map and Tree map.
5. Demonstration of Scatter plot.
6. Creation of tables.

**Practical components are evaluated in Lab internal test for 50 Marks in CIE component**

**WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

[https://onlinecourses.nptel.ac.in/noc20\\_mg11/preview](https://onlinecourses.nptel.ac.in/noc20_mg11/preview)

**COURSE OUTCOME**

The student will be able to

- CO1** Understand the fundamentals of business analytics and apply tools of descriptive analytics for data forecasting.
- CO2** Analyse the data using clustering algorithms.
- CO3** Apply the use of big data for business decisions.
- CO4** Apply predictive and prescriptive analytics in business decisions.
- CO5** Apply business analytical techniques to provide solutions to business problems and aid in business decision making.

**RECOMMENDED BOOKS:**

1. Business Analytics, U Dinesh Kumar, Wiley India.
2. Fundamentals of Business Analytics, 2 nd Edition, R.N. Prasad, Seema Acharya, Wiley India

**REFERENCE BOOKS:**

1. Albright Winston “Business Analytics, Data Analysis and Decision Making” 5th edition, Cengage Publication
  2. Cindi Howson “Successful Business Intelligence” 2nd edition, Mc Graw Hill Education, Mc Graw Hill Education
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<b>DESIGN THINKING AND INNOVATION</b>					
<b>Course Code</b>	MMBA2C8	<b>CIE</b>	50 marks	<b>Contact Hours</b>	40 hours
<b>Credits (L:T:P)</b>	1:0:1	<b>SEE</b>	100 marks	<b>Mode of Exam</b>	Viva
<b>Course Coordinator:</b>	Dr. Nethravathi N				

### **COURSE CONTENT:**

#### **COURSE OBJECTIVES**

1. To familiarize students with Design Thinking (DT) and its phases.
2. To make students aware of the evolution, concepts & models of Design Thinking.
3. To provide learners with the context, methods and mindsets related to Design Thinking.
4. To equip students with the opportunities to ideate and find solutions by applying DT.
5. To provide knowledge on prototype evaluation.

### **SYLLABUS**

#### **MODULE 1**

**3 hours**

Design Thinking as a Solution, The Value of Design Thinking, A Look at the History of Design Thinking, A Look at the History of Design Thinking, Four Core Principles of Successful Innovation, A Model of the Design Innovation Process, Seven Modes of the Design Innovation Process, Understanding Methods.

#### **MODULE 2**

**3 hours**

Sense Intent: Mindsets, Sensing Changing Conditions, Seeing Overviews, Foreseeing Trends, Reframing Problems, Forming an Intent,  
Know Context: Mindsets, Knowing Context History, Understanding Frontiers, Seeing System Overviews, Understanding Stakeholders, Using Mental Models

#### **MODULE 3**

**2 hours**

Know People: Mindsets, Observing Everything, Building Empathy, Immersing in Daily Life, Listening Openly, Looking for Problems and Needs.- POEMS, Field Visit, Video recording.

#### **MODULE 4**

**2 hours**

Frame Insights: Mindsets, Exploring Systems, Looking for Patterns, Constructing Overviews, Identifying Opportunities, Developing Guiding Principles. User Groups Definition, Compelling Experience Map, User Journey Map,

#### **MODULE 5**

**3 hours**

Frame solutions: Solution Diagramming, Solution Storyboard, Solution Enactment, Solution Prototype, Solution Evaluation, Solution Roadmap, Pilot Development and Testing, Implementation Plan.

#### **PRACTICAL COMPONENTS: 27 hours**

1. Interview a start-up founder to comprehend prototype development.
  2. Observe and record the innovation and technology synchronisation for creative design thinking
  3. Conduct interviews with users experts and social entrepreneurs and develop socially sustainable prototypes.
  4. Develop a user groups and design user journey map.
  5. Design a story board of your solution.
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6. Evaluate the viability of the solution- commercial, social and environmental.
7. Conduct the pilot study of the proposed prototype.
8. Observe and record the testing of the proposed prototype.
9. Evaluate the requirements of MVP.
10. Develop the implementation plan.

#### **WEB LINKS AND VIDEO LECTURES (E-RESOURCES):**

1. [https://onlinecourses.nptel.ac.in/noc22\\_mg75/preview](https://onlinecourses.nptel.ac.in/noc22_mg75/preview).
2. <https://www.ideo.com/pages/design-thinking-resources>
3. <https://www.innovationtraining.org/stanford-design-thinking-resources/>
4. <https://www.teachthought.com/pedagogy/45-design-thinking-resources-for-educators/>
5. <https://theaccidentaldesignthinker.com/design-thinking-tools-resources/>

#### **COURSE OUTCOME**

The student will be able to

- CO1** Understand the Design Thinking process from a business management perspective.
- CO2** Apply the knowledge and skills of Design Thinking in prototype development for product and service innovations.
- CO3** Analyse sustainable and societal challenges and find solutions.
- CO4** Develop a prototype and evaluate new product and service concepts through applied creativity and innovation.
- CO5** Evaluate the prototype under the light of feasibility and viability to commercialize at the market.

#### **RECOMMENDED BOOKS:**

1. 101 Design Methods – A Structured Approach to Driving Innovation in Your Organization by Vijay Kumar, John Wiley & Sons, 2013.
2. Design Thinking for Strategy – Innovating towards Competitive Advantage by Claude Diderich, Springer, 2020.

#### **REFERENCE BOOKS:**

1. The Design of Business – Why Design Thinking is the Next Competitive Advantage by Roger Martin, Harvard Business Press, 2009.
  2. Design Thinking – Integrating innovation, Customer experience, & Brand Value by Thomas Lockwood, Allworth Press, 2009
  3. Design Thinking Methodology by Emrah Yayici, ArtBizTech, 2016.
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# **BMS Institute of Technology and Management**

(An Autonomous Institution, Affiliated to VTU, Belagavi)

Approved by AICTE New Delhi, Accredited by NAAC with 'A' Grade

Yelahanka, Bengaluru - 560064



## **Master of Computer Applications (MCA)**

(Accredited by NBA, New Delhi)



## **CURRICULUM**

**Scheme of Teaching and Examination 2024 Scheme  
AY 2024-25**

**I & II Semesters**



## **BMS EDUCATIONAL TRUST, BENGALURU**



Dharmaprakasha Rajakarya Prasaktha  
**Late. Sri B. M. Sreenivasaiah**  
Founder, BMSCE



**Late Sri. B. S. Narayan**  
Founder, BMS Educational Trust  
Founder Donor Trustee

### **Vision of BMS Educational Trust**

“Promoting Prosperity of Mankind by Augmenting Human Resource Capital Through Quality Technical Education and Training”

### **Mission of BMS Educational Trust**

“Accomplish Excellence in the Field of Technical Education Through Education Research and Service Needs of Society”



## About BMS Educational Trust

The history of BMS educational institutions can be traced back to 1946, when a noted philanthropist Dharmaprakasha, Rajakarya Prasaktha late Sri. B.M. Sreenivasaiah established the first-ever private engineering college in the country named, BMS College of Engineering (BMSCE). He had a great vision of promoting the prosperity of mankind by augmenting human resource capital through quality education and training. After his sad demise, his illustrious son Late Sri B.S. Narayan strived hard to realize the vision set through the formation of BMS Educational Trust in 1953. He was instrumental in establishing several educational institutions under the Trust. After his passing away, his wife Dr. B.S. Ragini Narayan continued with unwavering devotion the tradition of contributing high-quality human resource to the society, the objective with which the Trust was established. She is now the Chairperson, Donor Trustee and Member Secretary of the Trust. The activities of BMS educational institutions are well guided by a Council of Trustees appointed by her. It has established a conducive academic environment in all its institutions to effectively realize the vision.

Presently, the Trust runs the following 10 high quality and reputed institutions.

1. BMS College of Engineering (BMSCE), Bengaluru
2. BMS College of Law (BMSCL), Bengaluru
3. BMS Pre-University College for Women (BMSPUCW), Bengaluru
4. BMS Degree college for Women (BMSCW), Bengaluru
5. BMS Evening College of Engineering (BMSECE), Bengaluru
6. BMS Institute of Technology and Management (BMSIT&M), Bengaluru
7. BMS School of Architecture (BMSSA), Bengaluru.
8. BMS Evening College of Arts and Commerce (BMSCE), Bengaluru
9. BMS College of Architecture (BMSCA), Bengaluru
10. BMS College of Commerce and Management (BMSCCM), Bengaluru

## About BMS Institute of Technology and Management

BMS Institute of Technology and Management was established in 2002 to cater to the need for high-quality technical education in India. The 22-acre lush green and serene campus of BMSIT&M is located in Northern Bengaluru closer to the Kempegowda International Airport (KIAL). Currently, there are 9 UG programs, 3 PG programs and 11 research centers under VTU catering to the educational needs of close to 4000 students and 143 research scholars. All the programs are being run as per the VTU guidelines for affiliated institutions. Now that BMSIT&M has been granted fresh autonomous status by the UGC and VTU from the academic year 2021-22, the curriculum design, delivery, assessment and evaluation with respect to the batch of students getting admitted w.e.f. 2021-22 will be the responsibility of the institution. The high-quality faculty and staff members, excellent academic and support infrastructure, quality learning aids, productive collaborations with industry, research institutes and government have together created a highly conducive ambience for students to realize their full potential. With continuous improvement in all dimensions, BMSIT&M has become one of the preferred destinations for engineering education for students across the country and neighboring countries as well.



## About the Department of MCA

The Department of Master of Computer Applications (MCA) was established during the academic year 2003-04, with an approved intake of 60, to develop quality IT professionals to meet the human resource demand. The department is accredited by NBA, New Delhi and obtained academic autonomy in the year 2021-22. The department is recognized as a Research Centre under Visvesvaraya Technological University from the academic year 2016-17 and currently having 16 research scholars registered for Ph.D. The Department has 12 qualified and dedicated teaching staff, 2 technical staff and 1 office staff who put in their best possible efforts to ensure that the students gain the knowledge along with other life-skills, which helps them to face the world confidently and with high self-esteem while making their journey with BMIT&M comfortable as well. Disciplined environment conducive to Teaching-Learning, along with rigorous academic mentoring, is maintained at the department.

### VISION OF THE INSTITUTE

To emerge as one of the finest technical institutions of higher learning to develop professionals who are technically competent, ethical and environment friendly for betterment of society.

### MISSION OF THE INSTITUTE

Accomplish stimulating learning environment through high quality academic instruction, innovation and industry-institute interface.

### VISION OF THE DEPARTMENT

To emerge as a leading department in computer applications, producing skilled professionals equipped to deliver sustainable solutions.

### MISSION OF THE DEPARTMENT

Facilitate effective learning environment through quality education, industry interaction with orientation towards research, critical thinking and entrepreneurial skills.



## **PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)**

**PEO1:** Develop innovative IT applications to meet industrial and societal needs.

**PEO2:** Adapt themselves to evolving domain requirements.

**PEO3:** Exhibit leadership skills and progress in their chosen career path.

## **PROGRAM OUTCOMES (POs)**

**PO1:** Apply knowledge of mathematics, programming logic and coding fundamentals for solution architecture and problem solving.

**PO2:** Identify, review, formulate and analyze problems for primarily focusing on customer requirements using critical thinking frameworks.

**PO3:** Design, develop and investigate problems with an innovative approach for solutions incorporating ESG/SDG goals.

**PO4:** Select, adapt and apply modern computational tools such as development of algorithms with an understanding of the limitations including human biases.

**PO5:** Function and communicate effectively as an individual or a team leader in diverse and multidisciplinary groups using methodologies such as agile.

**PO6:** Use the principles of project management such as scheduling, work breakdown structure and be conversant with the principles of Finance for profitable project management.

**PO7:** Commit to professional ethics in managing software projects with financial aspects. Learn to use new technologies for cyber security and insulate customers from malware.

**PO8:** Change management skills and the ability to learn, keep up with contemporary technologies and ways of working.



## **Preamble:**

Technical education, today, is faced with extremely complex challenges due to the pressing need for comprehensive, inclusive, optimal and sustainable solutions to global and local problems. Hence, there is a need for engineering colleges to utilize the academic autonomy granted to them in full measure to assess the gaps in the present system, review and redesign the curriculum, its delivery and evaluation processes to effectively meet all such challenges. Such an exercise should be broad-based and take into consideration:

- The ever-increasing influence of science and technology on human society.
- The faster pace of new developments and the rapid obsolescence of prevailing practices.
- Penetration of Information and Communication Technology in all sectors of human activity and economic development.
- Service sector becoming a major avenue for the employment of technical professionals and economic gains.
- Increasing multicultural work environment and fading organizational boundaries
- Very volatile, uncertain, complex and ambiguous business environment.

A higher education institute with academic autonomy should see opportunities in these challenges. From that perspective, these institutions are responsible for producing graduates who, among others, will have:

- A strong foundation in the basics of science, technology, mathematics and engineering disciplines.
- The command over the chosen area of technical specialization.
- The capacity to apply the professional knowledge and skills acquired to solve complex engineering problems most optimally.
- Ability to self-learn and for life-long learning.
- The expertise in analysis, design, modelling and simulation of complex systems.
- The ability of rational, logical and critical thinking.
- The leadership qualities to inspire team members to achieve grand shared vision.

BMSIT&M intends to produce such graduates who strive to be complete engineers in all respects and to succeed in addressing the challenges posed by the modern world. BMSIT&M exercises the academic freedom given by the University -

- With a great sense of responsibility and accountability
- To enhance the visibility and credibility of the institute in the national and international Higher Education segment.
- To demonstrate its research prowess, creativity, innovativeness and entrepreneurial capabilities.
- To gain the confidence and respect of all its stakeholders, especially students, alumni, parents and the society at large.



### Program Information - MCA

Name of the Programme	<b>Master of Computer Applications - MCA</b>
Scheme	Choice Based Credit System
Duration of the course	2 years (4 Semesters)
Duration of Semester	16 Weeks
Total credits	80
CIE : SEE	50:50
Maximum duration of course completion	4 years
10-12 hours of Teaching-Learning Process	1 credit
2 hours Laboratory/Tutorial per week	
25 hours of Teaching-Learning Process	2 credits
40 hours of Teaching-Learning Process	3 credits
50 hours of Teaching-Learning Process	4 credits
40 hours of Teaching-Learning Process with 10-12 laboratory sessions	4 credits (IPCC)

### Semester-wise Credit Distribution

Sem	Core	Elective	Major Project	Internship	Mathematics	Humanities, Ethics & Management	Online Learning	Total
I	16	-	-	-	4	Mandatory Course (NC)*	-	20
II	18	3	-	-	-	-	Mandatory Course (NC)~	21
III	-	9	10	-	-	-	-	19
IV	-	-	6	11	-	-	3	20
<b>Total</b>	<b>34</b>	<b>12</b>	<b>16</b>	<b>11</b>	<b>4</b>	<b>-</b>	<b>3</b>	<b>80</b>

~ Online Learning can be taken up and completed only on recognized and authorized platforms

\* Communication and Soft Skills course can be completed using Quiklrn platform



## Curriculum 2024-26 Scheme – MCA



**BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT**  
(An Autonomous Institution, Affiliated to VTU, Belagavi)  
**Scheme of Teaching and Examination: Effective from AY 2024 – 25**  
**Outcome Based Education (OBE) and Choice Based Credit System (CBCS)**

PG PROGRAM: <b>MASTER OF COMPUTER APPLICATIONS (MCA)</b>									<b>Semester: I</b>			
Sl. No	Course Category	Course Code	Course Title	Credit Distribution			Credits	Contact Hours/Week	Examination			
				L	T	P			Duration	CIE Marks	SEE Marks	Total Marks
1	BSC	<b>MMCA11</b>	Mathematical Foundation for Computer Applications	3	1	0	4	5	3	50	50	100
2	IPCC	<b>MMCA12</b>	Java Programming	3	0	1	4	5	3	50	50	100
3	PCC	<b>MMCA13</b>	Data Structures and Algorithms	3	0	0	3	3	3	50	50	100
4	PCC	<b>MMCA14</b>	Database Management Systems	3	0	0	3	3	3	50	50	100
5	PCC	<b>MMCA15</b>	Operating System with Unix	3	0	0	3	3	3	50	50	100
6	PCCL	<b>MMCAL16</b>	Data Structures and Algorithms Lab	0	0	1	1	2	3	50	50	100
7	PCCL	<b>MMCAL17</b>	Database Management Systems Lab	0	0	1	1	2	3	50	50	100
8	PCCL	<b>MMCAL18</b>	Web Programming Lab	0	0	1	1	3	3	50	50	100
9	NCMC	<b>MMCAL19</b>	Communication and Soft Skills	0	0	0	0	2	-	-	-	PP
<b>TOTAL</b>				<b>15</b>	<b>1</b>	<b>4</b>	<b>20</b>	<b>28</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>800</b>

\*Bridge Course for students with non-computer science background shall be conducted with 2 hours per week culminating with a structured assessment process.





**BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT**  
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**Scheme of Teaching and Examination: Effective from AY 2024 – 25**  
**Outcome Based Education (OBE) and Choice Based Credit System (CBCS)**

PG PROGRAM: <b>MASTER OF COMPUTER APPLICATIONS (MCA)</b>									<b>Semester: II</b>			
Sl. No	Course Category	Course Code	Course Title	Credit Distribution			Credits	Contact Hours/Week	Examination			
				L	T	P			Duration	CIE Marks	SEE Marks	Total Marks
1	IPCC	<b>MMCA21</b>	Full Stack Development	3	0	1	4	5	3	50	50	100
2	PCC	<b>MMCA22</b>	Machine Learning	3	0	0	3	3	3	50	50	100
3	PCC	<b>MMCA23</b>	Mobile Application Development	3	0	0	3	3	3	50	50	100
4	PCC	<b>MMCA24</b>	Cloud Computing	3	0	0	3	3	3	50	50	100
5	PCC	<b>MMCA25</b>	Computer Networks	3	0	0	3	3	3	50	50	100
6	PEC	<b>MMCA26X</b>	Elective	3	0	0	3	3	3	50	50	100
7	PCCL	<b>MMCAL27</b>	Machine Learning Lab	0	0	1	1	2	3	50	50	100
8	PCCL	<b>MMCAL28</b>	Mobile Application Development Lab	0	0	1	1	2	3	50	50	100
9	NCMC	<b>MMCAL29</b>	Communication and Soft Skills	0	0	0	0	2	-	-	-	PP
10	NCMC Online Mode	<b>MMCA1AU</b>	Research Methodology & IPR	0	0	0	0	1	-	-	-	PP
<b>TOTAL</b>				<b>18</b>	<b>0</b>	<b>3</b>	<b>21</b>	<b>27</b>	-	-	-	<b>800</b>

<b>Elective</b> <b>MMCA26X</b>	
<b>Course Code</b>	<b>Course Title</b>
<b>MMCA261</b>	Cyber Security
<b>MMCA262</b>	Robotic Process Automation
<b>MMCA263</b>	Big Data Analytics
<b>MMCA264</b>	Blockchain Technology
<b>MMCA265</b>	Software Quality Assurance





**BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT**  
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**Scheme of Teaching and Examination: Effective from AY 2024 – 25**  
**Outcome Based Education (OBE) and Choice Based Credit System (CBCS)**

PG PROGRAM: <b>MASTER OF COMPUTER APPLICATIONS (MCA)</b>									<b>Semester: III</b>			
Sl. No	Course Category	Course Code	Course Title	Credit Distribution			Credits	Contact Hours/Week	Examination			
				L	T	P			Duration	CIE Marks	SEE Marks	Total Marks
1	PEC	<b>MMCA3X1</b>	Specialization – I	3	0	0	3	3	3	50	50	100
2	PEC	<b>MMCA3X2</b>	Specialization – II	3	0	0	3	3	3	50	50	100
3	PEC	<b>MMCA3X3</b>	Specialization – III	3	0	0	3	3	3	50	50	100
4	PW	<b>MMCA34</b>	Project Phase - I	0	0	10	10	20	3	50	50	100
<b>TOTAL</b>				<b>9</b>	<b>0</b>	<b>10</b>	<b>19</b>	<b>29</b>	-	-	-	<b>400</b>

	Artificial Intelligence & Data Science (A)	Software Development and Operations (B)	Advanced Network Systems (C)	System Security & Applications (D)
<b>Specialization I</b> <b>MMCA3X1</b>	Business Analytics	Agile Software Development	Augmented & Virtual Reality	Web Security
<b>Specialization II</b> <b>MMCA3X2</b>	Natural Language Processing	Object Oriented Analysis and Design	Industrial IoT	Ethical Hacking
<b>Specialization III</b> <b>MMCA3X3</b>	Data Engineering	Enterprise Resource Planning	Wireless Networks & Mobile Computing	Cryptography and Network Security





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**Outcome Based Education (OBE) and Choice Based Credit System (CBCS)**

PG PROGRAM: MASTER OF COMPUTER APPLICATIONS (MCA)							Semester: IV					
Sl. No	Course Category	Course Code	Course Title	Credit Distribution			Credits	Contact Hours/Week	Examination			
				L	T	P			Duration	CIE Marks	SEE Marks	Total Marks
1	PEC Online Mode	MMCA41	Online Course on Emerging Technology (12 Weeks) / Professional Certification	0	3	0	3	6	-	100	-	100
2	INT	MMCA42	Internship	0	0	11	11	22	3	50	50	100
3	PW	MMCA43	Project Phase - II	0	0	6	6	12	3	50	50	100
TOTAL				0	3	17	20	40	-	-	-	300





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## CONTINUOUS INTERNAL EVALUATION AND SEMESTER END EXAMINATION PATTERN ACADEMIC BATCH 2024-25 (MCA)

CONTINUOUS INTERNAL EVALUATION (CIE): IPCC Course (3-0-2)						Max. Marks: 50
		Internal Assessments (IAs)	Max. Marks	Average /Sum	Marks after scale-down	Final Marks
Theory Component (60% of CIE)	IA Tests	IA-1 (1.5 Hr)	40	40	20	20+ 10+ 10+ 10= 50
		IA-2 (1.5 Hr)	40			
	Assignment	ASMT	10	20	10	
	AAT	AAT	10			
Practical Component (40% of CIE)	Cumulative assessment of laboratory program execution	10 Marks for each program	100	-	10	
	IA Test	IA (03 Hrs.)	50	100	10	
		Open Ended Programs	50			
SEMESTER END EXAMINATION (SEE): IPCC Courses (3-0-2)						
Examination Duration: 03 Hrs				Max. Marks: 50		
			Max. Marks	Marks after scale-down	Final Marks	
Theory Component (100% of SEE)	No. of Modules	05	100	50	50	
	Questions/Module	02				
	Marks/Question	20				
	No. of Questions to be answered/ module	01				
	No. of Questions to be answered/course	05				
The minimum marks to be secured in CIE to appear for SEE shall be 25. (50% of maximum marks (30M) under theory component i.e., 15M and 50% of maximum marks (20) under laboratory component i.e., 10)).						
A minimum of 40% in SEE is required i.e., 20M.						
In addition to the minimum CIE and SEE requirements, an aggregate of 50% marks from CIE and SEE, put together, is required for passing the course i.e., 50M.						



***In addition to the minimum CIE and SEE requirements, an aggregate of 50% marks from CIE and SEE, put together, is required for passing the course i.e., 50M.***





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CONTINUOUS INTERNAL EVALUATION (CIE): PCC or PEC Course (3:2:0) (2:0:0) (3:0:0)						
Max. Marks: 50						
		Internal Assessments (IAs)	Max. Marks	Average/ Sum	Marks after scale-down	Final Marks
Theory Component	IA Tests	IA-1 (1.5 Hr)	40	40	30	30+ 20= 50
		IA-2 (1.5 Hr)	40			
	AAT	AAT-1	10	20	20	
		AAT-2	10			
SEMESTER END EXAMINATION (SEE): PCC or PEC Course (3:2:0) (2:0:0) (3:0:0)						
Examination Duration: 03 Hrs				Max. Marks: 50		
			Max. Marks	Marks after scale-down	Final Marks	
Theory Component	No. of Modules	05	100	50	50	
	Questions/Module	02				
	Marks/Question	20				
	No. of Questions to be answered/ module	01				
	No. of Questions to be answered/	05				
<i>The minimum marks to be secured in CIE to appear for SEE shall be 25.</i>						
<i>A minimum of 40% in SEE is required i.e., 20M.</i>						
<i>In addition to the minimum CIE and SEE requirements, an aggregate of 50% marks from CIE and SEE, put together, is required for passing the course i.e., 50M.</i>						





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**MASTER OF COMPUTER APPLICATIONS**  
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**SEMESTER – I**

**Mathematical Foundations for Computer Applications**

Course Code	MMCA11	CIE Marks	50
Contact Hours (L:T:P)	3:2:0	SEE Marks	50
Total Number of Lecture Hours	40L14T	Exam Hours	3

**Credits: 04**

**Course objectives:**

This course will enable the students to

1. Understand the concepts of sets and number theory.
2. Perform various basic operations on propositional logic.
3. Solve problems using concepts of relations & probability distribution
4. Apply the abstract concepts of algebra & graph theory
5. Compute statistical measures for the given set of data.

**Preamble:** Mathematical foundation is essential in both theoretical and applied areas of computer science. It covers wide range of concepts such as set theory, probability, graph theory, matrices and vectors, and statistical methods which are applied in the domains of machine learning, artificial intelligence, and data science.

**Module – 1**

**Mathematical Logic, Set Theory, Functions and Relations**

Propositional logic, Propositional Equivalences, Sets, Set operations, Inclusion and Exclusion principle, Functions, Relation, Properties of relations, Equivalence relations, Partial Ordering, Applications of set theory and logic in computer science, Use cases of the concepts.

(08 Hours)

**Module – 2**

**Probability Distribution**

Concept of Random variable, Discrete Probability Distributions, Continuous Probability Distributions, Mean and Variance of random variables. Binomial and Poisson Distribution, Exponential and Normal Distribution with Mean and Variance.

(08 Hours)

**Module – 3**

**Matrices and Vector Algebra**

Matrices, Matrix operations, Related matrices, Rank of a matrix, Determinant of a matrix, Eigen values and Eigen vectors.

**Sequence and Series**

Introduction, Sequences, Series, Arithmetic Progression, Sum of Finite number of terms in A.P, Arithmetic Means, Geometric Progression, sum to n terms of G.P, Geometric Mean, relation between A.M and G.M.

(08 Hours)

**Module – 4**

**Graph Theory**



<p>Graphs and graphs models and terminologies, Representation of graphs, Euler and Hamilton Graphs, Shortest-Path-Travelling salesman problem, Planar graph and graph coloring, Use cases of the concepts.</p> <p style="text-align: right;">(08 Hours)</p>
<b>Module - 5</b>
<p><b>Statistical Methods</b></p> <p>Collection of data, Graphical representation, Comparison of frequency distribution, Measures of tendency, Correlation, Coefficient of correlation, Lines of regression, Rank correlation, Curve Fitting-Graphical method, Principle of Least Square- to fit a straight line and Parabola, Fitting of other curves of the form <math>y=ax^b</math>, <math>y=ae^{bx}</math>, Applications of linear regression and curve fitting.</p> <p style="text-align: right;">(08 Hours)</p>
<p><b>Course outcomes:</b></p> <p>The students will be able to:</p> <p>C01: Solve the problems based on mathematical logic, set theory and relations.</p> <p>C02: Apply appropriate probability distribution for a given problem.</p> <p>C03: Apply matrices and various progressions for a given use case.</p> <p>C04: Model the given problem using graph theory concepts.</p> <p>C05: Perform statistical evaluation for curve fitting.</p>
<p><b>CIE:</b></p> <ul style="list-style-type: none"> <li>• 60% of CIE is based on Internal Assessment Tests</li> <li>• 40% of CIE is based on Alternate Assessment Methods</li> </ul>
<p><b>SEE:</b></p> <ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> </ul>
<p><b>Text Books:</b></p> <ol style="list-style-type: none"> <li>1. Kenneth H Rosen, "Discrete Mathematics and its Applications", McGraw Hill publications, 7<sup>th</sup> edition.</li> <li>2. Dr. B. S. Grewal, "Higher Engineering Mathematics", Khanna Publishers, 44<sup>th</sup> Edition.</li> <li>3. Walpole Myers, "Probability and Statistics for Engineers and Scientists", Pearson Education, 8<sup>th</sup> Edition.</li> </ol> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Ralph P. Grimaldi and B V Ramana, Discrete and combinatorial Mathematics", 5<sup>th</sup> Edition, Pearson, 2011.</li> <li>2. J K Sharma, "Discrete Mathematics", MacMillan Publishers India Ltd, 3<sup>rd</sup> Edition, 2011.</li> <li>3. J P Tremblay and R Manohar, "Discrete Mathematical Structures with Applications to Computer Science", McGraw Hill, 2017.</li> </ol>
<p><b>Alternate Assessment Tools (AATs) suggested:</b></p> <ol style="list-style-type: none"> <li>1. Problem Solving</li> </ol>
<p><b>Web links/e-resources:</b></p> <ol style="list-style-type: none"> <li>1. Probability distributions: <a href="https://www.youtube.com/watch?v=CfZa1daLjwo&amp;list=PLaFfQroTgZnzbFK-Rie19FdV6diehETQy">https://www.youtube.com/watch?v=CfZa1daLjwo&amp;list=PLaFfQroTgZnzbFK-Rie19FdV6diehETQy</a>.</li> <li>2. Travelling salesman problem Graph Theory 13 Travelling salesman's problem &amp; Chinese postman problem.</li> <li>3. Eigen values and Eigen vectors Eigenvalues and Eigenvectors   Properties and Important Result   Matrices.</li> <li>4. Curve fitting : <a href="https://www.youtube.com/watch?v=PtRq60VZGlE&amp;list=PLNKD1qB9pptvgPP_zrKXa64SPYtKQpy-C">https://www.youtube.com/watch?v=PtRq60VZGlE&amp;list=PLNKD1qB9pptvgPP_zrKXa64SPYtKQpy-C</a>.</li> </ol>





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**MASTER OF COMPUTER APPLICATIONS**  
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**SEMESTER – I**

**Java Programming**

Course Code	MMCA12	CIE Marks	50
Contact Hours (L:T:P)	3:0:2	SEE Marks	50
Total Number of Lecture Hours	40L 28P	Exam Hours	3

**Credits: 04**

**Course objectives:**

This course will enable the students to

1. Understand the basic syntax, operators set, functions and OOP concepts in Java.
2. Develop problem-solving skills using java programming to tackle real world problems.
3. Master advanced Java programming concepts, including threads, exceptions and interfaces.
4. Apply OOP design principles to design and develop robust, scalable Java applications.
5. Develop GUI based applications using Java frameworks and libraries.

**Preamble:** The Java Programming course is a comprehensive program designed to equip students with the fundamental knowledge and skills required to develop robust, scalable, and efficient software applications using Java. Java is a widely used programming language in various industries, including web development, Android app development, Enterprise software development.

**Module – 1**

**Java Programming Fundamentals**

An overview of Java, Data Types and Operators, Program Control Statements, Introducing Classes, Objects and Methods. Methods, Classes, Constructors, Access control, Pass Objects to Methods, How Arguments are passed, Returning Objects, Method Overloading, Overloading Constructors.

(08 Hours)

**Module – 2**

**Inheritance, Interfaces and Packages**

Inheritance, using super to Call Superclass constructors, using super to Access Superclass Members, creating a Multilevel Hierarchy, Superclass References and Subclass Objects, Method Overriding, Using Abstract Classes. Interface Fundamentals, Creating an Interface, implementing an Interface, Using Interface References, Implementing Multiple Interfaces, Constants in Interfaces, Interfaces can be extended, Nested Interfaces, Package Fundamentals, Packages and Member Access, Importing Packages.

(08 Hours)

**Module – 3**

**Exception Handling and Multi-Threading Programming**

The Exception Hierarchy, Exception Handling Fundamentals, the Consequences of an Uncaught Exception, using Multiple catch clauses, Catching subclass Exceptions, Throwing an Exception, Throwable, using finally, using throws; Multithreading: The Thread Class and Runnable Interface, Creating Thread, Creating Multiple Threads, Determining When a Thread Ends, Thread Priorities, Synchronization, using Synchronization Methods, The Synchronized



Statement, Thread Communication using notify(), wait() and notify All(), Suspending, Resuming and stopping Threads.	
(08 Hours)	
<b>Module – 4</b>	
<b>Servlet Programming</b>	
Servlet Structure, Packaging, Lifecycle, HTTP Request and response, Handling client request, Form data, HTTP status request headers, HTTP Status codes, HTTP response headers, Handling cookies, Session tracking.	
<b>JSP Programming</b>	
Need of JSP, Basic syntax, Scripting elements, Limiting Java code in JSP, JSP expression, JSP directives, JSP attributes.	
(08 Hours)	
<b>Module – 5</b>	
<b>Spring Framework and Hibernate</b>	
Introducing the Spring Framework, Problems with the Traditional Approach to J2EE, Lightweight Frameworks, Spring's Values, Spring in Context, Inversion of Control and Dependency Injection, Architecting Applications with Spring; Introduction to Hibernate, Application of Hibernate.	
(08 Hours)	
<b>Practical components for IPCC</b>	
<b>Sl.No.</b>	<b>Experiments</b>
1	a. Class, object b. Method Overloading & Constructor Overloading.
2	Inheritance a. Method Overriding b. Abstract class
3	a. Interfaces b. Packages
4	a. Exception Handling b. Creating own exception subclasses
5	a. Multithreaded Programming b. Thread Priorities and Synchronization
6	a. Java Servlets b. Java Server Pages
7	JDBC Connectivity
8	A simple Spring application
<b>Course outcomes:</b>	
The students will be able to:	
C01: Demonstrate object-oriented programming concepts.	
C02: Apply Java constructs to obtain solutions.	
C03: Develop reusable and efficient Java code.	
C04: Build a Java based client-server application.	
C05: Implement Java application using Spring framework.	
<b>CIE:</b>	
<ul style="list-style-type: none"> <li>• CIE is based on Theory and Laboratory Components of the course.</li> <li>• Theory component is evaluated for 60% of CIE i.e., 30 Marks and Laboratory component is evaluated for 40% of CIE i.e., 20 Marks.</li> </ul>	



**SEE:**

- SEE will be conducted for 100 marks.

**Text Books:**

1. "Java: The Complete Reference" by Herbert Schildt (Publisher: McGraw-Hill), 9th Edition, ISBN: 978-0-07-180856-9, 2014.
2. Professional Java™ Development with the Spring Framework by Rod Johnson, Juergen Hoeller, Alef Arendsen, Thomas Risberg, Colin Sampaleanu , Released July 2005, Publisher(s): Wrox ,ISBN: 9780764574832.
3. Java Servlet and JSP Programming" by Jason Brittain and Brian D. Eubanks (Publisher: O'Reilly Media).

**References:**

1. "Head First Design Patterns" by Kathy Sierra and Bert Bates (Publisher: O'Reilly Media).
2. "Beginning Hibernate 6 Java Persistence from Beginner to Pro" , by Joseph B. Ottinger Jeff Linwood Dave Mintz Fifth Edition, Apress.

**Alternate Assessment Tools (AATs) suggested:**

1. Spring Framework
2. Project Development and Presentation

**Web links/e-resources:**

1. [www.java.com](http://www.java.com)
2. <https://www.programiz.com/java-programming>





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## MASTER OF COMPUTER APPLICATIONS Scheme of Teaching and Examination (Effective from the Academic year 2024-25)

### SEMESTER – I

#### Data Structures and Algorithms

Course Code	MMCA13	CIE Marks	50
Contact Hours (L:T:P)	3:0:0	SEE Marks	50
Total Number of Lecture Hours	40L	Exam Hours	3

**Credits: 03**

#### Course objectives:

This course will enable the students to

1. Understand fundamentals of data structures and their applications essential for programming/problem solving.
2. Utilize an appropriate data structure like stack, queues, lists, trees and graphs to solve a given problem.
3. Develop non-linear data structures and their applications such as trees and graphs sorting, traversing and searching algorithms.
4. State algorithm's efficiencies using asymptotic notations.
5. Analyse the efficiency of various algorithms.

**Preamble:** Data Structures are a specialized means of organizing and storing data in computers in such a way that operations can be performed on the stored data more efficiently. Data structures have a wide and diverse scope of usage across the fields of Computer Science and many other fields of Engineering. Data Structures are the main part of many computer science algorithms as they enable the programmers to handle the data in an efficient way. It plays a vital role in enhancing the performance of a software.

#### Module – 1

##### Data Structures

Definition, Classification and Operations, Dynamic memory allocation, Dynamic Arrays, Self-referential structures.

##### Stacks

Definition, Stack operations, Array representation of stacks, Stacks using dynamic arrays.

##### Stack applications

Infix to postfix conversion, Evaluation of postfix expression.

##### Recursion

Factorial, GCD, Fibonacci sequence, Tower of Hanoi, Ackerman's function.

(08 Hours)

#### Module – 2

##### Queues

Definition, Array representation, Queue operations, Circular queues, Circular queues using dynamic arrays, De-queues, Priority queues.

##### Linked Lists

Definition, Representation of linked lists in memory, Memory allocation; Garbage collection.

(08 Hours)



<b>Module – 3</b>
<p><b>Linked list operations</b> Traversing, Searching, Insertion, and deletion. Doubly linked lists, Circular linked lists.</p> <p><b>Trees</b> Terminology, Binary trees, Properties of binary trees, Array and linked representation of Tree, Binary tree traversals - Inorder, Preorder, Postorder.</p> <p><b>Binary Search Trees</b> BST insert and delete operations, Application of binary search trees.</p> <p style="text-align: right;">(08 Hours)</p>
<b>Module – 4</b>
<p><b>Asymptotic Notations</b> Big-Oh notation (O), Omega notation (<math>\Omega</math>), Theta notation (<math>\Theta</math>) with examples, Basic efficiency classes, Important problem types, Mathematical analysis of non-recursive and Recursive algorithms with examples problems.</p> <p><b>Brute force design technique</b> Selection sort, Sequential search, String matching algorithm with complexity Analysis.</p> <p style="text-align: right;">(08 Hours)</p>
<b>Module – 5</b>
<p><b>Divide and Conquer</b> Binary search, Merge sort, Quick sort with complexity analysis.</p> <p><b>Greedy Technique</b> Prim's Algorithm, Kruskal's algorithm, Dijkstra's algorithm with performance analysis, Decrease and conquer – DFS, BFS.</p> <p style="text-align: right;">(08 Hours)</p>
<p><b>Course outcomes:</b> The students will be able to: C01: Illustrate linear and non-linear data structures. C02: Apply suitable data structures for a given problem. C03: Implement sorting and searching techniques. C04: Analyse the algorithms using complexity metrics.</p>
<p><b>CIE:</b></p> <ul style="list-style-type: none"> <li>• 60% of CIE is based on Internal Assessment Tests</li> <li>• 40% of CIE is based on Alternate Assessment Methods</li> </ul>
<p><b>SEE:</b></p> <ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> </ul>
<p><b>Text Books:</b></p> <ol style="list-style-type: none"> <li>1. Ellis Horowitz and Sartaj Sahni, Fundamentals of Data Structures in C, Universities Press, 2nd edition, 2019</li> <li>2. Seymour Lipschutz, Data Structures, Schaum's Outline Series, 1st Edition, 2014.</li> </ol> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Gilberg &amp; Forouzan, Data Structures: A Pseudo-code approach with C, Cengage Learning, 2nd edition, 2014.</li> <li>2. Jean-Paul Tremblay &amp; Paul G. Sorenson, An Introduction to Data Structures with Applications, McGraw Hill, 2nd Edition, 2013.</li> <li>3. Reema Thareja, Data Structures using C, 3rd Ed, Oxford press, 2012.</li> <li>4. Introduction to Algorithms, Thomas H. Cormen, Charles E. Leiserson, Ronal L. Rivest, Clifford Stein, 3rd Edition, PHI.</li> </ol>
<b>Alternate Assessment Tools (AATs) suggested:</b>



1. Linked List Applications.
2. Time complexity.

**Web links/e-resources:**

1. Introduction to Data Structures: <http://www.nptelvideos.in/2012/11/data-structures-and-algorithms.html>
2. Sorting: <https://ds2-iiith.vlabs.ac.in/exp/selection-sort/index.html>
3. Trees, BFS,DFS : <https://ds1-iiith.vlabs.ac.in/exp/tree-traversal/index.html>





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**SEMESTER – I**

**Database Management System**

Course Code	MMCA14	CIE Marks	50
Contact Hours (L:T:P)	3:0:0	SEE Marks	50
Total Number of Lecture Hours	40L	Exam Hours	3

**Credits: 03**

**Course objectives:**

This course will enable the students to

1. Understand the fundamental concepts of Database Management Systems.
2. Compare between file systems and database systems.
3. Design ER diagrams, schema and relational tables.
4. Formulate SQL queries.
5. Develop real-time database applications.

**Preamble:** Database Management Systems (DBMS) is a software system that allows users to create, manage, and manipulate data in a database and are important because they help businesses store, manage, and access data efficiently. It is used in all applications.

**Module – 1**

**Overview**

Characteristics of Database approach, Actors on the Scene, Workers behind the scene, Advantages of using DBMS approach, Data models, Schemas and instances, Three schema architecture and data independence.

**Entity-Relationship Model**

Conceptual database using high level conceptual data models for Database design, A sample database application, Entity types, Entity sets, Attributes and Keys relationship types, Relationship sets, Roles and structural constraints, Weak entity types.

(08 Hours)

**Module – 2**

**Relational Model**

Relational vs non-relational DBMS, Relational model concepts, Relational model constraints and Relational database schema update operations, Transactions and dealing with constraint violations, Unary relational operations, Relational algebra operations from set theory, Binary relational operations, JOIN and DIVISION, Additional relational operations, Examples of queries in relational algebra, Relational database design using ER-to-relational mapping.

(08 Hours)

**Module – 3**

**Introduction to SQL**

Overview of the SQL query language, SQL data definition, Basic structure of SQL queries, additional basic operations, Null values, Aggregate functions, Modification of the Database, Join Expressions, Views, Transactions, Integrity constraints, SQL data types and schemas, Authorization, Database programming issues and techniques, Embedded SQL.

(08 Hours)



<b>Module – 4</b>
<b>Database Design</b> Informal design guidelines for relation schemas, Functional dependencies, Normal forms based on primary keys, General definitions of 2 <sup>nd</sup> and 3 <sup>rd</sup> Normal forms, Boyce Code Normal Forms, Stored procedures and functions, Triggers, Views. <div style="text-align: right;">(08 Hours)</div>
<b>Module – 5</b>
<b>Transaction Management</b> Transaction concept, A simple transaction model, Desirable properties of transaction. <b>Concurrency Control</b> Lock based protocols, Recovery concepts, Recovery in multi-database systems, Database backup and recovery from catastrophic failures. <div style="text-align: right;">(08 Hours)</div>
<b>Course outcomes:</b> The students will be able to: CO1: Apply the basic concepts of database management. CO2: Formulate SQL queries for a given problem scenario. CO3: Improve the database design by normalization. CO4: Create stored procedures/ functions for a given use case. CO5: Implement transaction management concepts.
<b>CIE:</b> <ul style="list-style-type: none"> <li>• 60% of CIE is based on Internal Assessment Tests.</li> <li>• 40% of CIE is based on Alternate Assessment Methods.</li> </ul>
<b>SEE:</b> <ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> </ul>
<b>Text Books:</b> <ol style="list-style-type: none"> <li>1. Elmasri and Navathe, “Fundamentals of Database Systems”, 5th Edition, Addison - Wesley, 2011.</li> </ol> <b>References:</b> <ol style="list-style-type: none"> <li>1. Raghu Ramakrishnan and Johannes Gehrke, “Database Management Systems”, 3<sup>rd</sup> Edition, McGraw-Hill, 2003.</li> <li>2. Silberschatz, Korth and Sudarshan, “Data base System Concepts”, 6<sup>th</sup> Edition, Tata McGraw Hill, 2011.</li> </ol>
<b>Alternate Assessment Tools (AATs) suggested:</b> <ol style="list-style-type: none"> <li>1. Develop an application with proper interface and database.</li> </ol>
<b>Web links/e-resources:</b> <ol style="list-style-type: none"> <li>1. Stored Procedure: <a href="https://www.youtube.com/watch?app=desktop&amp;v=Sggdhot-MoM">https://www.youtube.com/watch?app=desktop&amp;v=Sggdhot-MoM</a></li> <li>2. Research paper using DBMS <a href="https://www.ijrte.org/wp-content/uploads/papers/v7i6s5/F10370476S519.pdf">https://www.ijrte.org/wp-content/uploads/papers/v7i6s5/F10370476S519.pdf</a></li> </ol>





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### SEMESTER – I

#### Operating System with Unix

Course Code	MMCA15	CIE Marks	50
Contact Hours (L:T:P)	3:0:0	SEE Marks	50
Total Number of Lecture Hours	40L	Exam Hours	3

**Credits: 03**

#### Course objectives:

This course will enable the students

1. To understand the services of operating system.
2. To know about various types of operating systems.
3. To analyse and understand the need for processes, threads and their implementation models.
4. To learn CPU and Memory management technique.
5. To study the architecture of a Linux system.

**Preamble:** Operating system is an interface between the user and the computer. Operating system is critical to implement any software: system software or application software. It's application is there in almost all electronic gadgets/devices viz: Laptops, smart watches, mobiles, refrigerators etc.

#### Module – 1

##### Operating System Basics

Introduction to Operating System, OS types, Feature Migration, Computing Environments, System Components, Operating – System Services, System Calls, System Programs, System Structure, Virtual machines.

(08 Hours)

#### Module – 2

##### Process Management

Process Concept, Process control block, Scheduling Criteria, Scheduling Algorithms. Process Synchronization: The Critical Section Problem, Semaphores, Readers-Writers Problem, Dining Philosopher's Problem using Semaphores.

(08 Hours)

#### Module – 3

##### Deadlocks

System model, Deadlock Characterization, Methods for handling deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery from deadlock.

(08 Hours)

#### Module – 4

##### Memory Management

Memory Management Strategies, Basic hardware, Swapping, Memory Allocation, Paging, Segmentation, Virtual Memory concept.

(08 Hours)



<b>Module – 5</b>	
<b>Unix</b>	Unix architecture, Components of Unix, Unix file system, Environment variables, Unix files.
<b>Linux Case Study</b>	Basic Linux commands to deal with files and directories, File permissions, Pipes and filters, Pattern matching, Find command, Administrative commands.
	(08 Hours)
<b>Course outcomes:</b>	<p>The students will be able to:</p> <p>CO1: Illustrate operating system concepts.</p> <p>CO2: Apply the suitable OS algorithm for any given use case.</p> <p>CO3: Analyse memory management techniques.</p> <p>CO4: Build shell scripts using Linux commands and language constructs.</p>
<b>CIE:</b>	<ul style="list-style-type: none"> <li>• 60% of CIE is based on Internal Assessment Tests.</li> <li>• 40% of CIE is based on Alternate Assessment Methods.</li> </ul>
<b>SEE:</b>	<ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> </ul>
<b>Text Books:</b>	<ol style="list-style-type: none"> <li>1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, “Operating Systems Principles”, 8th Edition, Wiley – India.</li> <li>2. Unix Concepts and Applications- Sumitaba Das, 4<sup>th</sup> Edition, Mc Graw Hill Publications.</li> </ol>
<b>References:</b>	<ol style="list-style-type: none"> <li>1. D M Dhamdhare, “Operating Systems – A Concept Based Approach”, 2nd Edition, Tata McGraw – Hill, 2002.</li> <li>2. Behrouz A Forouzan and Richard F Gilberg, “LINUX and Shell Programming”, 1st Edition, Thomson Course Technology, 2005.</li> </ol>
<b>Alternate Assessment Tools (AATs) suggested:</b>	<ol style="list-style-type: none"> <li>1. Unix commands.</li> <li>2. Shell Script.</li> </ol>
<b>Web links/e-resources:</b>	<ol style="list-style-type: none"> <li>1. Basic Unix Commands <a href="https://www.unixtutorial.org/basic-unix-commands">https://www.unixtutorial.org/basic-unix-commands</a>.</li> </ol>





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**SEMESTER – I**

**Data Structures and Algorithms Lab**

Course Code	MMCAL16	CIE Marks	50
Contact Hours (L:T:P)	0:0:2	SEE Marks	50
Total Number of Lecture Hours	28P	Exam Hours	3

**Credits: 01**

**Course objectives:**

This course will enable the students to

1. Develop linear data structures and their applications such as stacks, queues and lists.
2. Develop non-linear data structures and their applications
3. Implement sorting and searching algorithms based on their complexity metrics.

Sl.No.	Experiments
1	Design, Develop and Implement a menu driven Program in C for the following operations on STACK of Integers (Array Implementation of Stack with maximum size MAX) a. Push an Element on to Stack b. Pop an Element from Stack c. Demonstrate Overflow and Underflow situations on Stack d. Display the status of Stack e. Exit Support the program with appropriate functions for each of the above operations
2	Design, Develop and Implement a Program in C for converting an Infix Expression to Postfix Expression. Program should support for both parenthesized and free parenthesized expressions with the operators: +, -, *, /, %( Remainder), ^ (Power) and alphanumeric operands.
3	Design, Develop and Implement a menu driven Program in C for the following operations on QUEUE of integers (Array Implementation of Queue with maximum size MAX) a. Insert an Element on to QUEUE b. Delete an Element from QUEUE c. Demonstrate Overflow and Underflow situations on QUEUE d. Display the status of QUEUE e. Exit Support the program with appropriate functions for each of the above operations.
4	Design, Develop and Implement a menu driven Program in C for the following operations on Circular QUEUE of integers (Array Implementation of Queue with maximum size MAX) a. Insert an Element on to Circular QUEUE b. Delete an Element from Circular QUEUE c. Demonstrate Overflow and Underflow situations on Circular QUEUE d. Display the status of Circular QUEUE e. Exit



5	<p>Design, Develop and Implement a menu driven Program in C for the following operations on Singly Linked List (SLL) of Student Data with the fields: USN, Name, PhNo</p> <ol style="list-style-type: none"> <li>Create a SLL of N Students Data by using front insertion.</li> <li>Display the status of SLL and count the number of nodes in it</li> <li>Perform Insertion / Deletion at End of SLL</li> <li>Perform Insertion / Deletion at Front of SLL (Demonstration of stack)</li> <li>Exit</li> </ol>
6	<p>Design, Develop and Implement a menu driven Program in C for the following operations on Doubly Linked List (DLL) of Employee Data with the fields: SSN, Name, Dept.</p> <ol style="list-style-type: none"> <li>Create a DLL of N Employees Data by using end insertion.</li> <li>Display the status of DLL and count the number of nodes in it</li> <li>Perform Insertion and Deletion at End of DLL</li> <li>Perform Insertion and Deletion at Front of DLL</li> <li>Demonstrate how this DLL can be used as Double Ended Queue</li> <li>Exit</li> </ol>
7	<p>Design, Develop and Implement a menu driven Program in C for the following operations on Circular Linked List (CLL) of Employee Data with the fields: SSN, Name, Dept.</p> <ol style="list-style-type: none"> <li>Create a CLL of N Employees Data by using end insertion.</li> <li>Display the status of CLL and count the number of nodes in it</li> <li>Perform Insertion and Deletion at End of CLL</li> <li>Perform Insertion and Deletion at Front of DLL</li> <li>Exit</li> </ol>
8	<p>Implement a menu driven Program in C for the following operations on Binary Search Tree(BST) of Integers</p> <ol style="list-style-type: none"> <li>Create a BST of N Integers</li> <li>Traverse the BST in Inorder, Preorder and Post Order</li> <li>Search the BST for a given element and report the appropriate message</li> <li>Exit</li> </ol>
9	<p>Sort a given set of n integer elements using Quick Sort method and compute its time complexity. Run the program for varied values of n&gt; 5000 and record the time taken to sort. Plot a graph of the time taken versus n. The elements can be read from a file or can be generated using the random number generator. Demonstrate using C/C++ how the divide and conquer method works along with its time complexity analysis</p>
10	<p>Design, Develop and Implement a Program in C for the following operations on Graph(G) of Cities</p> <ol style="list-style-type: none"> <li>Create a Graph of N cities using Adjacency Matrix.</li> <li>Print all the nodes reachable from a given starting node in a digraph using any traversal method (DFS/BFS).</li> </ol>
<p><b>Course outcomes:</b>  The students will be able to:  C01: Illustrate linear and non-linear data structures.  C02: Apply suitable data structures for a given problem.  C03: Implement sorting and searching techniques.  C04: Analyse the algorithms using complexity metrics.</p>	



**CIE:**

- 60% of CIE is based on Cumulative assessment of laboratory program execution.
- 40% of CIE is based on IA Test and Alternate Assessment Method.

**SEE:**

- SEE will be conducted for 100 marks





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**SEMESTER – I**

**Database Management System LAB**

Course Code	MMCAL17	CIE Marks	50
Contact Hours (L:T:P)	0:0:2	SEE Marks	50
Total Number of Lecture Hours	28P	Exam Hours	3

**Credits: 01**

**Course objectives:**

This course will enable the students to

1. Design ER diagrams, schema and relational tables.
2. Formulate SQL queries.
3. Develop real-time database applications.

Sl.No.	Experiments
1	<p>Implementation of</p> <p>DDL Commands</p> <ul style="list-style-type: none"><li>• CREATE</li><li>• DROP</li><li>• ALTER</li></ul> <p>DML commands</p> <ul style="list-style-type: none"><li>• INSERT</li><li>• UPDATE</li><li>• DELETE</li><li>• SELECT</li></ul> <p>TCL Commands</p> <ul style="list-style-type: none"><li>• Commit</li><li>• Rollback</li><li>• Savepoint</li></ul> <p>Integrity Constraints</p> <ul style="list-style-type: none"><li>• Domain Constraints</li><li>• Entity Integrity Constraints</li><li>• Referential Integrity Constraint</li><li>• Key Constraint</li></ul>
2	<p>STUDENT DATABASE</p> <p>Consider the following schema:</p> <p>STUDENT (USN, name, date_of_birth, branch, mark1, mark2, mark3, total, GPA)</p> <p>Execute the following queries:</p> <ol style="list-style-type: none"><li>1. Update the column total by adding the columns mark1, mark2, mark3.</li><li>2. Find the GPA score of all the students.</li><li>3. Find the students who were born on a particular year of birth from the date_of_birth column.</li><li>4. List the students who are studying in a particular branch of study.</li><li>5. Find the maximum GPA score of the student branch-wise.</li></ol>



	<p>6. Find the students whose name starts with the alphabet "S".</p> <p>7. Find the students whose name ends with the alphabets "AR".</p> <p>Delete the student details whose USN is given as 1BY24MC005.</p>
3	<p>COMPANY DATABASE</p> <p>Consider the schema for Company Database:</p> <p>EMPLOYEE (SSN, Name, Address, Sex, Salary, SuperSSN,DNo)</p> <p>DEPARTMENT (DNo, DName, MgrSSN, MgrStartDate)</p> <p>DLOCATION (DNo,DLoc)</p> <p>PROJECT (PNo, PName, PLocation, DNo)</p> <p>WORKS_ON (SSN, PNo, Hours)</p> <p>Execute the following queries:</p> <ol style="list-style-type: none"> <li>1. Make a list of all project numbers for projects that involve an employee whose last name is 'Scott', either as a worker or as a manager of the department that controls the project.</li> <li>2. Show the resulting salaries if every employee working on the 'IoT' project is given a 10 percent raise.</li> <li>3. Find the sum of the salaries of all employees of the 'Accounts' department, as well as the maximum salary, the minimum salary, and the average salary in this department.</li> <li>4. Retrieve the name of each employee who works on all the projects controlled by department number 5 (use NOT EXISTS operator).</li> <li>5. For each department that has more than five employees, retrieve the department number and the number of its employees who are making more than Rs. 6,00,000.</li> </ol>
4	<p>MOVIE DATABASE</p> <p>Consider the schema for Movie Database:</p> <p>ACTOR (Act_id, Act_Name, Act_Gender)</p> <p>DIRECTOR (Dir_id, Dir_Name, Dir_Phone)</p> <p>MOVIES (Mov_id, Mov_Title, Mov_Year, Mov_Lang, Dir_id)</p> <p>MOVIE_CAST (Act_id, Mov_id, Role)</p> <p>RATING (Mov_id, Rev_Stars)</p> <p>Execute the following queries:</p> <ol style="list-style-type: none"> <li>1. List the titles of all movies directed by 'Hitchcock'.</li> <li>2. Find the movie names where one or more actors acted in two or more movies.</li> <li>3. List all actors who acted in a movie before 2000 and also in a movie after 2015 (use JOIN operation).</li> <li>4. Find the title of movies and number of stars for each movie that has at least one rating and find the highest number of stars that movie received. Sort the result by movie title.</li> <li>5. Update rating of all movies directed by 'Steven Spielberg' to 5.</li> </ol>
5	<p>LIBRARY DATABASE</p> <p>Consider the following schema for a Library Database:</p> <p>BOOK (Book_id, Title, Publisher_Name, Pub_Year)</p> <p>BOOK_AUTHORS (Book_id, Author_Name)</p> <p>PUBLISHER (Name, Address, Phone)</p> <p>BOOK_COPIES (Book_id, Branch_id, No-of_Copies)</p> <p>BOOK_LENDING (Book_id, Branch_id, Card_No, Date_Out, Due_Date)</p> <p>LIBRARY_BRANCH (Branch_id, Branch_Name, Address)</p> <p>Execute the following queries:</p>



	<ol style="list-style-type: none"> <li>1. Retrieve details of all books in the library-id, title, name of publisher, authors, number of copies in each branch, etc.</li> <li>2. Get the particulars of borrowers who have borrowed more than 3 books, but from Jan 2017 to Jun 2017.</li> <li>3. Delete a book in BOOK table. Update the contents of other tables to reflect this data manipulation operation.</li> <li>4. Partition the BOOK table based on year of publication. Demonstrate its working with a simple query.</li> <li>5. Create a view of all books and its number of copies that are currently available in the Library.</li> </ol>
6	<p>Election Database</p> <p>Design an ER-diagram for the following scenario. Convert the same into a relational model, normalize Relations into a suitable Normal form and then solve the following queries.</p> <p>A country wants to conduct an election for the parliament. A country having many constituencies. Each constituency is identified uniquely by Constituency_id, having the Name, belongs to a state, Number_of_voters. A constituency can have many voters. Each voter is uniquely identified by using Voter_id, having the Name, age, address (involves Houseno, city, state, pincode). Each voter belongs to only one constituency. There are many candidates contesting in the election. Each candidate is uniquely identified by using candidate_id, having Name, phone_no, age, state. A candidate belongs to only one party. There are many parties. Each party is uniquely identified by using Party_id, having Party_Name, Party_symbol. A candidate can contest from many constituencies under a same party. A party can have many candidates contesting from different constituencies. No constituency having the candidates from the same party. A constituency can have many contesting candidates belongs to different parties. Each voter votes only one candidate of his/her constituency.</p> <p>Execute the following queries:</p> <ol style="list-style-type: none"> <li>1. List the details of the candidates who are contesting from more than one constituencies which belongs to different states.</li> <li>2. Display the state name having maximum number of constituencies.</li> <li>3. Create a stored procedure to insert the tuple into the voter table by checking the voter age. If voter's age is at least 18 years old, then insert the tuple into the voter else display the "Not an eligible voter" msg.</li> <li>4. Create a stored procedure to display the number of voters in the specified constituency, where the constituency name is passed as an argument to the stored procedure.</li> <li>5. Create a TRIGGER to UPDATE the count of "Number_of_voters" of the respective constituency in "CONSTITUENCY" table, AFTER inserting a tuple into the "VOTERS" table.</li> </ol>
<p><b>Course outcomes:</b></p> <p>The students will be able to:</p> <p>C01: Apply the basic concepts of database management.</p> <p>C02: Formulate SQL queries for a given problem scenario.</p> <p>C03: Improve the database design by normalization.</p> <p>C04: Create stored procedures/ functions for a given use case.</p> <p>C05: Implement transaction management concepts.</p>	



**CIE:**

- 60% of CIE is based on Cumulative assessment of laboratory program execution.
- 40% of CIE is based on IA Test and Alternate Assessment Method.

**SEE:**

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**SEMESTER – I**

**Web Programming Lab**

Course Code	MMCAL18	CIE Marks	50
Contact Hours (L:T:P)	0:0:2	SEE Marks	50
Total Number of Lecture Hours	28P	Exam Hours	3

**Credits: 01**

**Course objectives:**

This course will enable the students to

1. Explore the various web scripting technologies.
2. Use HTML/XHTML, CSS, and Bootstrap to Design and Decorate simple to complex web pages.
3. Validate the web page at client side, server side using either JavaScript.
4. Build a Web application for any use case.

**Preamble:** Web Technology is a basic web development programming language. We can develop both static and responsive webpages using this. Many real-time web applications are developed using this programming.

Sl.No.	Experiments
1	Create an XHTML page that provides information about your department. Your XHTML page must use the following tags: a. Text Formatting tags b. Horizontal rule c. Meta element d. Links e. Images f. Ordered list unordered list (use of additional tags encouraged)
2	Write a HTML program for time-table using tables.
3	Write a HTML program to divide the webpage using frames.
4	Develop and demonstrate the usage of inline, external and internal style sheet using CSS. Use HTML page that contains at least three paragraphs of text, listed elements and a table with four rows and four columns.
5	Develop and demonstrate a HTML file that includes JavaScript script for the following problems: a) Input: A number n obtained using prompt Output: The first n Fibonacci numbers b) Input: A number n obtained using prompt Output : A table of numbers from 1 to n and their squares using alert
6	Develop and demonstrate, using JavaScript script, a XHTML document that contains three short paragraphs of text, stacked on top of each other, with only enough of each showing so that the mouse cursor can be placed over some part of them. When the cursor is placed over the exposed part of any paragraph, it should rise to the top to become completely visible. Modify the above document so that when a text is moved



	from the top stacking position, it returns to its original position rather than to the bottom.
7	Develop and demonstrate a HTML file which includes JavaScript that uses functions for the following problems: a. Parameter: A string Output: The position in the string of the left-most vowel. b. Parameter: A number Output: The number with its digits in the reverse order.
8	Develop a simple calculator to perform arithmetic (addition, subtraction, multiplication and division) operations on given two numbers. Use an HTML tag that allows the user to input two numbers and to display the result of arithmetic operation. Write suitable HTML and JavaScript and CSS to your simple calculator.
9	Design a Login web page to accept the username and password as input and do the following: Validate the password, it should consist of at least 8 characters in length, must consists 1 capital case, 1 small case, 1 special characters.
10	Write a HTML program to develop a static Web Page for Book Catalog.
<b>Course outcomes:</b> The students will be able to: CO1: Apply basic concepts and tools of web technologies. CO2: Design web pages using suitable tools & technologies. CO3: Build a web application with proper validation.	
<b>CIE:</b> <ul style="list-style-type: none"> <li>60% of CIE is based on Cumulative assessment of laboratory program execution.</li> <li>40% of CIE is based on IA Test and Alternate Assessment Method.</li> </ul>	
<b>SEE:</b> <ul style="list-style-type: none"> <li>SEE will be conducted for 100 marks.</li> </ul>	
<b>Alternate Assessment Tools (AATs) suggested:</b> <ul style="list-style-type: none"> <li>Develop a website using appropriate tags.</li> </ul>	





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**SEMESTER – I**

**Bridge Course**

Course Code	BC	CIE Marks	-
Contact Hours (L:T:P)	0:2:0	SEE Marks	-
Total Number of Lecture Hours	25T	Exam Hours	-

**Credits: 00**

**Course objectives:**

This course will enable the students to

1. Realize the functionality of logic gates.
2. Apply Boolean axioms to simplify Boolean expressions, combinational and sequential circuits.
3. Explain the basic principles and operations of different components of digital computer.
4. Apply C concepts to simple programs.
5. Obtain a thorough understanding of fundamentals.

**Preamble:** Bridge Course is designed to fill the gap and connect non-computer science background students so that they easily adapt to the curriculum of MCA.

**Module – 1**

**Introduction**

Digital logic gates, Number systems, Boolean Algebra, Simplification, Construction of logic circuits, Adders, Subtractors, 1's and 2's complement.

(05 Hours)

**Module – 2**

**Computer Basics**

Functional units of computers, Operational concepts, Byte addressability, Instruction types, Sequencing, Addressing modes.

(05 Hours)

**Module – 3**

**Memory**

Basic memory concepts, Memory types, Semi-Conductor RAM organization, Memory hierarchy, Cache memory, Virtual memory, Secondary storage devices.

(05 Hours)

**Module – 4**

**C Basics**

Data Types, Operators, Control structures, Arrays, Procedures and Functions, Parameter passing, Recursion.

(05 Hours)

**Module – 5**

**C Basics**

Structures and Unions, Pointers, Memory allocation functions, I/o formatting.

(05 Hours)

**Textbooks:**



1. M.Morris Mano, "Digital Logic and Computer Design", Pearson, 2012.
2. Carl Hamacher, Zvonko Vranesic Safwat Zaky, "Computer Organization", 5<sup>th</sup> edition, TataMcGraw-Hill, 2011
3. Balaguruswamy, "Basics of C Programming".

**Alternate Assessment Tools (AATs) suggested:**

1. Assignment on problem solving in digital electronics.
2. Writing C programs to solve simple problems.

**Web links/e-resources:**

1. <https://www.coursera.org/courses?query=computer%20architecture>
2. <https://www.edx.org/learn/computer-architecture>
3. <https://www.udemy.com/topic/computer-architecture/>
4. <https://www.linkedin.com/learning/>
5. <https://www.youtube.com/c/Freecodecamp>
6. <https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-823-computer-system-architecture-fall-2005/>
7. <https://www.cs.cmu.edu/~213/>
8. <https://cs50.harvard.edu/>
9. <https://cs50.harvard.edu/discuss/>
10. <https://www.geeksforgeeks.org/computer-organization-and-architecture-tutorials/>
11. <https://www.youtube.com/user/Computerphile>
12. <https://www.youtube.com/c/GateSmashers>
13. <https://www.youtube.com/user/nesoacademy>





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**SEMESTER – I**

**Communication and Soft Skills**

Course Code	MMCAL19	CIE Marks	-
Contact Hours (L:T:P)	0:0:2	SEE Marks	-
Total Number of Lecture Hours	26P	Exam Hours	-

**Credits: 0**

**Course objectives:**

This course will enable students to

1. Familiarise with basic English Grammar and Communication Skills in general.
2. Identify the nuances of phonetics, intonation and enhance pronunciation skills.
3. Enhance English vocabulary and language proficiency for better communication skills.
4. Learn about Techniques of Information Transfer through presentation.

**Module – 1**

**Fundamentals of Communication**

Introduction, Communication-an overview, Definition of communication, Features of successful professional communication, Importance of communication, Purpose of professional communication, Rule of critical and creative thinking in effective communication, Role of emotions in communication, Role of Inter-Cultural Communication, Different forms of communication, Communication network in an organization, Barriers to communication, Some remedies.

**Non-verbal communication**

Introduction, Body language, Paralinguistic features, Proxemics/ Space distance, Haptics.

(04 Hours)

**Module – 2**

**Grammar: Essentials and Applications**

Introduction, Parts of Speech, Articles and Prepositions, Modals, Sentences and their types, Subject-verb, Concord, using tenses, Moods of Verbs, Active passive voice, Direct indirect speech, Clause and its types, Using non-Finites.

**Basic of Phonetics**

Introduction, Reasons for incorrect pronunciations, received pronunciation, Misconceptions about sounds, Transcriptions, Problems of Indian English, Syllables, Word stress, How to transcribe, Weak forms, Intonation and rhythm, Difference between British American and Indian spoken English.

(06 Hours)

**Module – 3**

**Reading skills**

Introduction, need for developing efficient reading skills, Benefits of effective reading, Speed of reading, four basic steps to effective reading, overcoming common obstacles, Types, Approaches to efficient reading, Tips for effective reading, employing different reading skills, Understanding the authors point of view, Identifying the central idea, inferring lexical and contextual meaning, employing discourse analysis, Worked out passages.

**Listening skills**



<p>Introduction, Listening is an art, Listening vs hearing, Poor vs effective listening, Advantages of good listening, Process of listening, Types of listening. Intensive listening vs extensive listening, Barriers to effective listening, five steps of active listening techniques for effective listening, Listening and not taking.</p> <p style="text-align: right;">(08 Hours)</p>
<b>Module – 4</b>
<p><b>Paragraphs and Precis Writing</b>  Precise, Summary, Abstract, Synopsis, Paraphrasing, Art of condensation, Some working principles, Seven step ladder to writing an effective precis, Writing precise for given passages, Structure of a paragraph, Construction of a paragraph, Features of a paragraph, Descriptive writing techniques, Argumentative paragraph, Analytical paragraph.</p> <p style="text-align: right;">(04 Hours)</p>
<b>Module – 5</b>
<p><b>Professional Presentations</b>  Introduction, combating stage fright, preparing PPT slides, Describing objects, Situations and people, Individual and group presentations, Delivering JAMs</p> <p><b>Essays, Letters, Resumes</b>  Introduction, Types of essays, Characteristic features of an essay, Stages in essay writing, Components comprising an essay, Essay writing-guiding principles, Business letters and resumes- Importance, Elements of structure, Layout. Business letters- Elements of style, Types of business letters, Resume preparation.</p> <p style="text-align: right;">(04 Hours)</p>
<p><b>Course outcomes:</b>  The students will be able to:  CO1: Understand and apply basic English grammar for effective communication.  CO2: Identify the nuances of phonetics, intonation, and enhance pronunciation skills.  CO3: Understand and use all types of English vocabulary and language proficiency.  CO4: Enhance their knowledge about techniques of information transfer through presentations.</p>
<p><b>Textbooks</b></p> <ol style="list-style-type: none"> <li>1. Meenakshi Raman and Sangeeta Sharma, Technical Communication Principles and Practice, Oxford Publications, 3<sup>rd</sup> Edition, 2015</li> <li>2. Sanjay Kumar and Pushpa Lata, Communication Skills, Oxford University Press,</li> <li>3. A Textbook of English Language Communication Skills, (ISBN-978-81-955465-2-7), Published by Infinite Learning Solutions, Bengaluru - 2022.</li> </ol> <p><b>References</b></p> <ol style="list-style-type: none"> <li>1. Gajendra Singh Chauhan, Technical Communication Cengage Learning India Pvt Limited, Latest Revised Edition, 2019</li> <li>2. Michael Swan, Practical English Usage, Oxford University Press, 2016</li> <li>3. N.P.Sudharshana and C.Savitha, English for Engineers, Cambridge University Press, 2018</li> </ol>





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**SEMESTER – II**

**Full Stack Development**

Course Code	MMCA21	CIE Marks	50
Contact Hours (L:T:P)	3:0:2	SEE Marks	50
Total Number of Lecture Hours	40L 28P	Exam Hours	3

**Credits: 04**

**Course objectives:**

This course will enable the students to

1. Understanding the MERN stack and its role in full-stack development.
2. Learn to build dynamic React apps using components, state, events, and controlled forms with Bootstrap.
3. Build RESTful APIs with Express for efficient data handling, validation, and error management.
4. Understand MongoDB basics.
5. Learn project setup, automation, and code organization for improved productivity.

**Preamble:** The MERN stack equips students with essential skills for developing modern web applications using MongoDB, Express, React, and Node.js. This course enables the creation of dynamic user interfaces and robust back-end services, meeting the high demand for full-stack developers in today's job market and creates opportunities in web development and software engineering, particularly in e-commerce, social media, and real-time applications.

**Module – 1**

**Introduction**

What's MERN? MERN Components, Why MERN?, Server-less Hello World, JSX, Project setup, Express, Separate script files, JSX transform, Older browsers support, Automate.

(08 Hours)

**Module – 2**

**React Component**

Issue tracker, React classes, Composing components, Passing data using properties, Passing data using children, Dynamic composition.

**React State**

Initial state, Async state initialization, Updating state, Lifting state up, Event handling, Stateless components, Designing components.

(08 Hours)

**Module – 3**

**React Forms**

Controlled components in forms, More filters, Typed input, Edit form, Specialized input components, Number input, Date input, Text input, Update API, Updating an issue, Updating a field, Delete API, Deleting an issue.

**React Bootstrap**

Bootstrap Installation, Buttons, Navigation bar, Panels, Tables, Forms, The grid system, Inline forms, Horizontal forms, Validation alerts, Toasts, Modals.

(08 Hours)



Module – 4	
<b>Express</b> Express, Rest API, The List API, List API integration, The create API, Create API integration, Query variables, Input validations, Displaying errors. (08 Hours)	
Module – 5	
<b>MongoDB</b> MongoDB basics, MongoDB CRUD operations, MongoDB node.js driver, Schema initialization, reading from MongoDB, Writing to MongoDB. (08 Hours)	
Practical components for IPCC	
Sl.No.	Experiments
1	Build a web application using the MERN stack that enables users to create, manage, and track tickets for various issues or tasks. <ul style="list-style-type: none"> <li>Create models and routes for handling ticket data.</li> <li>Create the Frontend React App and Installing Module.</li> <li>Add CSS file to add styles to front end.</li> </ul>
2	Build the blogging platform using MERN stack that allows user to create, read, update and delete blog posts. <ul style="list-style-type: none"> <li>Create the Backend Server.</li> <li>Setup Frontend with React.</li> <li>Add CSS file to add styles to front end.</li> </ul>
3	Build Summarizer Website using MERN Stack. (API Integration) <ul style="list-style-type: none"> <li>Generate OpenAI API Key.</li> <li>Create React App.</li> <li>Set up Express Server.</li> <li>Create the 'server.js' file in the server directory.</li> <li>Start the Development Servers.</li> </ul>
<b>Course outcomes:</b> The students will be able to: CO1: Demonstrate MERN stack and its components. CO2: Design React applications using various components. CO3: Build dynamic web applications. CO4: Implement RESTful APIs. CO5: Integrate MongoDB for data management.	
<b>CIE:</b> <ul style="list-style-type: none"> <li>CIE is based on Theory and Laboratory Components of the course.</li> <li>Theory component is evaluated for 60% of CIE i.e., 30 Marks and Laboratory component is evaluated for 40% of CIE i.e., 20 Marks.</li> </ul>	
<b>SEE:</b> <ul style="list-style-type: none"> <li>SEE will be conducted for 100 marks.</li> </ul>	
<b>Text Books:</b> <ol style="list-style-type: none"> <li>Vasan Subramanian, Pro MERN Stack Full Stack Web App development with Mongo, Express, React and Node, Second Edition, Apress, ISBN-13 (pbk): 978-1-4842-4390-9 ISBN-13 (electronic): 978-1-4842-4391-6 <a href="https://doi.org/10.1007/978-1-4842-4391-6">https://doi.org/10.1007/978-1-4842-4391-6</a>.</li> </ol>	



**References:**

1. David Choi, Full-Stack React, TypeScript, and Node: Build cloud-ready web applications using React 17 with Hooks and GraphQL, Packt Publishing, 2020.
2. Frank Zammetti, Modern Full-Stack Development Using TypeScript, React, Node.js, Webpack, and Docker, Apress, 2020.

**Alternate Assessment Tools (AATs) suggested:**

1. Building an Application Development using MERN stack.
2. Case study on tools implemented to deploy Full Stack Application.

**Web links/e-resources:**

1. <https://youtu.be/98BzS5Oz5E4?si=MDuN9SaSFir-u-8M>.
2. <https://www.youtube.com/watch?v=O3BUHwfHf84>.





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**SEMESTER – II**

**Machine Learning**

Course Code	MMCA22	CIE Marks	50
Contact Hours (L:T:P)	3:0:0	SEE Marks	50
Total Number of Lecture Hours	40L	Exam Hours	3

**Credits: 03**

**Course objectives:**

This course will enable the students to

1. Understand the basic theory underlying machine learning.
2. Formulate machine learning problems corresponding to different applications.
3. Explore a range of machine learning algorithms along with their pros and cons.
4. Apply machine learning algorithms to solve problems of moderate complexity.
5. Optimize the models learnt and report on the expected accuracy achieved.

**Preamble:** Machine learning (ML) is the science of getting computers to act in particular applications, without being explicitly programmed for every possible outcome. ML has paved the way to self-driving cars, on-device speech recognition, fast and efficient web search, improved understanding of the human genome, etc. This course will deal with the most common and effective ML algorithms, and ways to implement these algorithms from scratch. The theoretical foundations of frequently used ML algorithms and the practical know-how needed will be addressed. Several case studies and applications will be utilized to learn how to apply learning algorithms to new/unforeseen practical applications.

**Module – 1**

**Overview**

Data objects and Attribute types, Overview of Machine Learning Algorithms – Basics of Supervised and Unsupervised Algorithms.

**Machine Learning Basics**

Well posed learning problems, Perspectives and issues in Machine Learning, Concept Learning: Concept learning task, Concept learning as search, Find-S algorithm, Version Space, Candidate Elimination Algorithm.

(08 Hours)

**Module – 2**

**Decision Tree Learning**

Decision Tree representation, Appropriate problems for decision tree learning, Basic decision tree learning algorithm, Problems based on ID3 algorithm, Issues in decision tree learning.

(08 Hours)

**Module – 3**

**Bayesian Learning**

Introduction, Bayes theorem and concept learning, ML and LS error hypothesis, ML for predicting probabilities, Naïve Bayes Classifier, Bayesian belief networks.

(08 Hours)

**Module – 4**

**Unsupervised Learning**



Association Analysis - basic concepts and methods, Frequent itemset Generation, Apriori algorithm, FP-Growth Algorithm, Categorization of Major Clustering Methods, Instance based learning: Introduction to K-NN.
(08 Hours)
<b>Module – 5</b>
<b>Evaluating Hypothesis</b> Motivation, Estimating hypothesis accuracy, Basics of sampling theorem, General approach for deriving confidence intervals, Difference in error of two hypotheses, Case study based on 1-tail and 2-tail tests, AB Testing.
(08 Hours)
<b>Course outcomes:</b> The students will be able to: CO1: Analyze the various learning models. CO2: Apply machine learning algorithms for the given problems. CO3: Build an appropriate learning model for a given data set. CO4: Perform statistical and probabilistic analysis of machine learning techniques. CO5: Evaluate machine learning algorithms on various data sets.
<b>CIE:</b> <ul style="list-style-type: none"> <li>60% of CIE is based on Internal Assessment Tests</li> <li>40% of CIE is based on Alternate Assessment Methods</li> </ul>
<b>SEE:</b> <ul style="list-style-type: none"> <li>SEE will be conducted for 100 marks.</li> </ul>
<b>Text Books:</b> <ol style="list-style-type: none"> <li>Tom M. Mitchell, Machine Learning, India Edition 2013, McGraw Hill Education</li> <li>Pang-Ning Tan, Michael Steinbach, Vipin Kumar, Introduction to Data Mining, Pearson Education Inc, 4<sup>th</sup> Edition.</li> </ol>
<b>References:</b> <ol style="list-style-type: none"> <li>Ethem Alpaydin, Introduction to Machine learning, 2<sup>nd</sup> Edition, MIT Press.</li> <li>Jiawei Han, Micheline Kamber, Jian Pei, Data Mining Concepts and Techniques, Morgan Kauffman Publishing, 3<sup>rd</sup> Edition, 2012</li> </ol>
<b>Alternate Assessment Tools (AATs) suggested:</b> <ol style="list-style-type: none"> <li>Case Study / Implementation of ML algorithms.</li> <li>Evaluate ML algorithms on data sets.</li> </ol>
<b>Web links/e-resources:</b> <ol style="list-style-type: none"> <li>Reinforcement Learning - IIT Madras, <a href="https://tinyurl.com/3ptxbf43">https://tinyurl.com/3ptxbf43</a></li> <li>Statistics for Data Science – IIT Madras, <a href="https://tinyurl.com/yc4uk5ya">https://tinyurl.com/yc4uk5ya</a></li> </ol>





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**SEMESTER – II**

**Mobile Application Development**

Course Code	MMCA23	CIE Marks	50
Contact Hours (L:T:P)	3:0:0	SEE Marks	50
Total Number of Lecture Hours	40L	Exam Hours	3

**Credits: 03**

**Course objectives:**

This course will enable the students to

1. Understand the preliminary requirements to build mobile applications.
2. Design the GUI based activity screens using one of the tools of mobile application.
3. Analyze the flows of activities of mobile applications.
4. Apply the technologies to create mobile adaptive web applications.
5. Implement and Test Builds using one of the marketing tools of mobile.

**Preamble:** Mobile application development refers to the process of creating software applications that run on mobile devices, such as smartphones and tablets. It involves a combination of design, programming, testing, and deployment to produce apps that provide users with specific functionalities and experiences. As mobile devices have become integral to daily life, mobile app development has grown significantly, influencing industries, services, and entertainment globally.

**Module – 1**

**Introduction**

Preliminary considerations, Cost of development, Importance of mobile Strategies in the business world and Effective use of screen real estate.

**Understanding Mobile Applications**

Understanding mobile applications users, Understanding mobile information design, Understanding mobile platforms, Using the tools of mobile interface design.

(08 Hours)

**Module – 2**

**Getting Started with Android Programming**

What is Android, Obtaining the required tools, Anatomy of an android application, Components of android applications, Activities, and Fragments, Utilizing the action bar.

(08 Hours)

**Module – 3**

**Android UI Design and Location Based Services**

Views and view groups, Basic views, Fragments, Displaying maps, Getting location data, Publishing for publishing, Deploying APK Files.

(08 Hours)

**Module – 4**

**Android Messaging and Networking**

SMS Messaging, Sending Email, Networking, Downloading binary data, Text files, Accessing web services, Performing asynchronous call, Creating your own services, Communicating between a service and an activity, Binding, Activities to services.

(08 Hours)



<b>Module – 5</b>	
<b>Flutter</b>	Installation on windows, Architecture of flutter application, Introduction to DART programming, Widgets and layouts, State management, Writing android specific code. (08 Hours)
<b>Course outcomes:</b>	The students will be able to: CO1: Analyze the features of mobile devices. CO2: Design applications using Android components. CO3: Develop mobile based application using database. CO4: Design an application using image capturing and location details. CO5: Create a mobile application for any given use case.
<b>CIE:</b>	<ul style="list-style-type: none"> <li>60% of CIE is based on Internal Assessment Tests.</li> <li>40% of CIE is based on Alternate Assessment Methods.</li> </ul>
<b>SEE:</b>	<ul style="list-style-type: none"> <li>SEE will be conducted for 100 marks.</li> </ul>
<b>Text Books:</b>	<ol style="list-style-type: none"> <li>Jeff McWherter and Scott Gowell, "Professional Mobile Application Development", 1st Edition, 2012, ISBN: 978-1-118-20390-3.</li> <li>Wei-Meng Lee, "Beginning Android Application Development", Wiley 2011.</li> <li>Flutter – Tutorials Point, Tutorials Point (I) Pvt. Ltd – 2019.</li> </ol>
<b>References:</b>	<ol style="list-style-type: none"> <li>Reto Meier, "Professional Android 4 Application Development", WroxPublications 2012.</li> </ol>
<b>Alternate Assessment Tools (AATs) suggested:</b>	<ol style="list-style-type: none"> <li>Mobile Application Development on Societal/Environmental issues using Android Studio.</li> <li>Mobile Application Development on Management issues using Flutter framework.</li> </ol>
<b>Web links/e-resources:</b>	<ol style="list-style-type: none"> <li><a href="https://flutter.dev/docs">https://flutter.dev/docs</a></li> <li><a href="https://developer.android.com/">https://developer.android.com/</a></li> <li><a href="https://reactnative.dev/docs/getting-started">https://reactnative.dev/docs/getting-started</a></li> <li><a href="https://www.udemy.com/">https://www.udemy.com/</a></li> <li><a href="https://www.freecodecamp.org/">https://www.freecodecamp.org/</a></li> </ol>





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**SEMESTER – II**

**CLOUD COMPUTING**

Course Code	MMCA24	CIE Marks	50
Contact Hours (L:T:P)	3:0:0	SEE Marks	50
Total Number of Lecture Hours	40L	Exam Hours	3

**Credits: 03**

**Course objectives:**

This course will enable the students to

1. Explore basics of Cloud.
2. Know the purpose of various cloud services and their limitations.
3. Understand various services provided by different cloud service providers.
4. Differentiate between various service models and deployment models.
5. Deploy applications using AWS.

**Preamble:** Cloud is further extension of Distributed computing. Cloud provides us so many services that can be accessed via web. It has become an indispensable part of our lives. From entertainment to programming to storage, cloud is very critical in today's world.

**Module – 1**

**Cloud Computing Basics**

Distributed System Models and Enabling Technologies - Scalable Computing Service over the Internet, System Models for Distributed and Cloud Computing, Performance, Security and Energy efficiency.

(08 Hours)

**Module – 2**

**Virtualization**

Implementation levels of Virtualization, Virtualization structure/tools and mechanisms: Hypervisor and Xen architecture, Binary translation with full virtualization, Para virtualization with compiler support, Live VM migration steps.

**Cloud computing architecture**

Cloud computing and Service models: IaaS, PaaS, SaaS.

(08 hours)

**Module – 3**

**Data Center design and inter-connection networks**

Warehouse-scale datacentre, Data centre inter-connection networks, Modular data centres

**Cloud security**

Cloud security defence strategies, Distributed intrusion/anomaly detection

(08 hours)

**Module – 4**

**Cloud Implementations**

Programming the GAE, Google file system(GFS), BigTable, Google's NoSQL system.

**AWS**

Creating an EC2 instance using AWS, Hosting a web application, S3 storage service, Lambda service, Auto scaling.



<b>Azure Cloud</b> Architecture, Storage, Infrastructure and Compute services. <div>(08 hours)</div>
<b>Module – 5</b>
<b>Emerging Software Cloud Environments</b> Open source Eucalyptus and Nimbus <b>Applications of Cloud:</b> Healthcare, Business, Social media applications. <b>Case study:</b> Salesforce Cloud <div>(08 hours)</div>
<b>Course outcomes:</b> The students will be able to: C01: Analyse the requirements for scalable services and computing environment. C02: Classify various cloud service models and their providers. C03: Compare various cloud deployment models. C04: Deploy applications on real-time cloud platforms.
<b>CIE:</b> <ul style="list-style-type: none"> <li>60% of CIE is based on Internal Assessment Tests</li> <li>40% of CIE is based on Alternate Assessment Methods</li> </ul>
<b>SEE:</b> <ul style="list-style-type: none"> <li>SEE will be conducted for 100 marks.</li> </ul>
<b>Text Books:</b> <ol style="list-style-type: none"> <li>Kai Hwang, Geoffrey C. Fox. Jack J Dongarra, “Distributed and Cloud Computing, From Parallel Processing to the Internet of Things”, MK Publishers, 2012.</li> </ol> <b>References:</b> <ol style="list-style-type: none"> <li>Judith Hurwitz, R.Bloor, M. Kanfman, F.Halper , “Cloud Computing for Dummies” (Wiley India Edition).</li> <li>J.Vette, Toby J. Vette, Robert Elsenpeter, “Cloud Computing: A Practical Approach”, (Tata McGraw Hill).</li> </ol>
<b>Alternate Assessment Tools (AATs) suggested:</b> <ol style="list-style-type: none"> <li>Deploy any project using EC2 and demonstrate its execution using AWS.</li> <li>Explain the role of Cloud in DevOps. Illustrate the use of commonly used cloud services with the help of an example.</li> </ol>
<b>Web links/e-resources:</b> <ol style="list-style-type: none"> <li>Manage AWS Resources - AWS Management Console - AWS (Module 5)</li> </ol>





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**SEMESTER – II**

**Computer Networks**

Course Code	MMCA25	CIE Marks	50
Contact Hours (L:T:P)	3:0:0	SEE Marks	50
Total Number of Lecture Hours	40L	Exam Hours	3

**Credits: 03**

**Course objectives:**

This course will enable the students to

1. Learn the Basic concepts of Computer Networking.
2. Understand the concepts of OSI and TCP/IP model.
3. Describe the functions of Physical and Data Link layers.
4. Describe the functions of Network and Transport layers.
5. Demonstrate the TCP/IP sockets in UNIX operating System.

**Preamble:** Computer networks are systems that connect multiple computing devices to share resources, data, and communication across physical or digital distances. They form the backbone of modern digital communication, enabling everything from personal emails to large-scale data transfers and cloud computing. Computer networks allow for resource sharing, internet access, collaborative working, and global connectivity, making them essential in both personal and organizational environments.

**Module – 1**

**Introduction**

Networks, protocols and standards, Layered tasks, The OSI model, Layers in the OSI model, TCP/IP protocol suite, Addressing.

(08 Hours)

**Module – 2**

**Physical Layer and Media**

Periodic analog signals, Digital signals, Transmission impairment, Data rate limits, performance, Transmission media.

**Data Link Layer**

Error detection and Correction, Data link control, Multiple access.

(08 Hours)

**Module – 3**

**Network Layer**

Logical addressing, Internet protocol, Address Mapping, Error reporting and Multicasting, Delivery forwarding and Routing.

(08 Hours)

**Module – 4**

**Transport Layer**

Process-to-Process Delivery, UDP, TCP and SCTP, Congestion control and Quality of service.

(08 Hours)

**Module – 5**

**Application Layer**



<p>Domain name system, Distribution of name space, DNS in the Internet, Resolution, DNS messages.</p> <p><b>Linux Networking</b></p> <p>Elementary TCP sockets, TCP client/server example.</p> <p style="text-align: right;">(08 Hours)</p>
<p><b>Course outcomes:</b></p> <p>The students will be able to:</p> <p>C01: Apply the basic concepts of computer networking.</p> <p>C02: Demonstrate OSI reference model and TCP/IP model.</p> <p>C03: Analyze the working of network protocols.</p> <p>C04: Implement networking concepts using appropriate tools.</p>
<p><b>CIE:</b></p> <ul style="list-style-type: none"> <li>• 60% of CIE is based on Internal Assessment Tests</li> <li>• 40% of CIE is based on Alternate Assessment Methods</li> </ul>
<p><b>SEE:</b></p> <ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> </ul>
<p><b>Text Books:</b></p> <ol style="list-style-type: none"> <li>1. Forouzan, "Data Communications and Networking 5E", McGraw Hill Education.</li> <li>2. W. Richard Stevens, Bill Fenner, Andrew M. Rudoff, "UNIX Network Programming", Volume 1, 3<sup>rd</sup> Edition, PHI Learning Publication, 2010.</li> </ol> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Andrew S. Tanenbaum, "Computer Networks", 5<sup>th</sup> Edition, Pearson Publication, 2011</li> <li>2. Larry Peterson and Bruce Davie, "Computer Networks: A Systems Approach", Version 6.2, MK Publication.</li> </ol>
<p><b>Alternate Assessment Tools (AATs) suggested:</b></p> <ol style="list-style-type: none"> <li>1. Implementation of Computer Network concepts using Java/Python</li> </ol>
<p><b>Web links/e-resources:</b></p> <ol style="list-style-type: none"> <li>1. <a href="https://www.geeksforgeeks.org/network-configuration-trouble-shooting-commands-linux/">https://www.geeksforgeeks.org/network-configuration-trouble-shooting-commands-linux/</a></li> <li>2. <a href="https://www.javatpoint.com/java-networking">https://www.javatpoint.com/java-networking</a></li> <li>3. <a href="https://www.coursera.org/courses?query=computer%20networks">https://www.coursera.org/courses?query=computer%20networks</a></li> <li>4. <a href="https://www.edx.org/learn/computer-networking">https://www.edx.org/learn/computer-networking</a></li> <li>5. <a href="https://www.udemy.com/topic/computer-networking/">https://www.udemy.com/topic/computer-networking/</a></li> <li>6. <a href="https://www.youtube.com/c/Freecodecamp">https://www.youtube.com/c/Freecodecamp</a></li> </ol>





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**SEMESTER – II**

**Cyber Security**

Course Code	<b>MMCA261</b>	CIE Marks	50
Contact Hours (L:T:P)	3:0:0	SEE Marks	50
Total Number of Lecture Hours	40L	Exam Hours	3

**Credits: 03**

**Course objectives:**

This course will enable the students to

1. Understand the fundamental concepts of cyber security and its importance.
2. Identify and analyse potential security threats and vulnerabilities.
3. Implement security measures to protect computer systems.
4. Develop skills to detect and respond to cyber-attacks.
5. Apply cryptography techniques to ensure data security.

**Preamble:** The Cyber Security course covers fundamental concepts, techniques, and best practices to protect computer systems, networks, and data. It has various real-time applications including secure online transactions and data protection. Career paths include Cyber security specialist, information security analyst and Chief Information Security Officer (CISO). The field has high demand and growth prospects, roughly 32% annual growth rate. Average salaries range from 10K dollars to 20K dollars per year.

**Module – 1**

**Introduction**

Introduction to Cyber Security - - Defining cyber security, History of cyber security, Types of cyber-attacks, Security threats and vulnerabilities.

(08 Hours)

**Module – 2**

**Security Frameworks and Foundations**

National Institute of Standards and Technology (NIST) Framework, MITRE ATT&CK Framework, OWASP Foundation, OSINT framework.

(08 Hours)

**Module – 3**

**Cryptography**

Introduction to cryptography, - Types of cryptography (symmetric, asymmetric), Hash functions and digital signatures, Public key infrastructure (PKI).

(08 Hours)

**Module – 4**

**Operating System Security**

Operating system security fundamental, Access control and authentication, File system security, Secure boot and firmware protection.

(08 Hours)

**Module – 5**

**Incident Response and Forensic Analysis**



Incident response planning, Forensic analysis tools and techniques, Network traffic analysis, Malware analysis and reverse engineering.
(08 Hours)
<b>Course outcomes:</b> The students will be able to: C01: Analyse cyber security threats and vulnerabilities. C02: Apply cryptographic techniques to secure the data. C03: Demonstrate system resilience to cyber-attacks. C04: Develop incident response plans with forensic analyses.
<b>CIE:</b> <ul style="list-style-type: none"> <li>60% of CIE is based on Internal Assessment Tests</li> <li>40% of CIE is based on Alternate Assessment Methods</li> </ul>
<b>SEE:</b> <ul style="list-style-type: none"> <li>SEE will be conducted for 100 marks.</li> </ul>
<b>Text Books:</b> <ol style="list-style-type: none"> <li>"Cyber Security" by Nina Godbole Sunit Belapure, 2012, Wiley India.</li> <li>"Cyber Security: A Comprehensive Introduction" by Dr. Mark Ciampa (Publisher: Cengage Learning)</li> </ol> <b>References:</b> <ol style="list-style-type: none"> <li>"Hacking: The Art of Exploitation" by Jon Erickson (Publisher: No Starch Press)</li> <li>"Security in Computing" by Charles P. Pfleeger (Publisher: Prentice Hall)</li> </ol>
<b>Alternate Assessment Tools (AATs) suggested:</b> <b>Assessment 1: Group Project (20%)</b> <ol style="list-style-type: none"> <li>Develop a comprehensive security plan for a hypothetical organization.</li> <li>Include risk assessment, vulnerability analysis, and incident response plan.</li> </ol> <b>Assessment 2: Written Examination (80%)</b> <ol style="list-style-type: none"> <li>Multiple-choice questions (40%)</li> <li>Short-answer questions (30%)</li> <li>Essay questions (30%)</li> </ol>
<b>Web links/e-resources:</b> <ol style="list-style-type: none"> <li>Cyber Attacks and Defense Tactics, Techniques and Procedures: <a href="https://attack.mitre.org/">https://attack.mitre.org/</a></li> <li>Cyber Security Certifications, Trainings and Resources: <a href="https://www.sans.org/apac/">https://www.sans.org/apac/</a></li> <li>Penetration Test Tools collection: <a href="https://www.kali.org/">https://www.kali.org/</a></li> </ol>





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**SEMESTER – II**

**Robotic Process Automation(RPA)**

Course Code	MMCA262	CIE Marks	50
Contact Hours (L:T:P)	3:0:0	SEE Marks	50
Total Number of Lecture Hours	40L	Exam Hours	3

**Credits: 03**

**Course objectives:**

This course will enable the students to

1. Gain a clear understanding of RPA and benefits, understanding the limits and constraints of automation.
2. Understand the basic Automation components, features and technology.
3. Acquire the knowledge on purpose and use of the control centre.
4. Understand the various use cases and write bots.

**Preamble:** Robotic process automation (RPA) is a form of business process automation technology based on metaphorical software robots or on artificial intelligence /digital workers. It is sometimes referred to as software robotics. RPA involves the use of software that mimics human actions while interacting with applications in a computer and accomplishing rule-based tasks. This often requires reading from and typing or clicking on existing applications that are used to perform the given tasks.

**Module – 1**

**RPA Foundations**

What is RPA? Flavors of RPA, The Benefits of RPA- The downsides of RPA, RPA Compared to BPO, BPM and BPA, Consumer Willingness for Automation, The Workforce of the Future.

**RPA Skills**

On-Premise Vs. the Cloud, Web Technology, Programming Languages and Low Code, OCR, Databases, APIs, AI, Cognitive Automation, Agile, Scrum, Kanban and Waterfall, DevOps, Flowcharts.

(08 Hours)

**Module – 2**

**Components of RPA**

RPA Platforms, About UiPath, The future of automation.

**Record and Play**

UiPath stack, Downloading and installing UiPath Studio, Learning UiPath Studio, Task recorder, Step-by-step examples using the recorder.

(8 Hours)

**Module – 3**

**Sequence, Flowchart, and Control Flow**

Sequencing the workflow, Activities, Control flow, various types of loops, and decision making, Step-by-step example using Sequence and Flowchart, Step-by-step example using Sequence and Control flow.



<b>Data Manipulation</b> Variables and scope, Collections, Arguments – Purpose and use, Data table usage with examples, Clipboard management, File operation with step-by-step example, CSV/Excel to data table and vice versa (with a step-by-step example). <div style="text-align: right;">(8 Hours)</div>
<b>Module – 4</b>
<b>Taking Control of the Controls</b> Finding and attaching windows, Finding the control, Techniques for waiting for a control, Act on controls – mouse and keyboard activities, Working with UiExplorer, Handling events, Revisit recorder, Screen Scraping, When to use OCR? Types of OCR available, How to use OCR?, Avoiding typical failure points. <div style="text-align: right;">(8 Hours)</div>
<b>Module – 5</b>
<b>Exception Handling, Debugging, and Logging</b> Exception handling, Common exceptions and ways to handle them, Logging and taking screenshots, Debugging techniques, Collecting crash dumps, Error reporting. <div style="text-align: right;">(8 Hours)</div>
<b>Course outcomes:</b> The students will be able to: C01: Analyse the problem to understand the scope and extent of process automation. C02: Apply the robotic process automation knowledge to automate operations. C03: Implement exception handling and automation strategies in real time applications. C04: Interpret various aspects of debugging in RPA applications. C05: Develop basic robots using UiPath Community Edition.
<b>CIE</b> <ul style="list-style-type: none"> <li>60% of CIE is based on Internal Assessment Tests.</li> <li>40% of CIE is based on Alternative Assessment Methods.</li> </ul>
<b>SEE:</b> <ul style="list-style-type: none"> <li>SEE will be conducted for 100 marks.</li> </ul>
<b>Text Books:</b> <ol style="list-style-type: none"> <li>Tom Taulli, The Robotic Process Automation Handbook: A Guide to Implementing RPA Systems, 2020, ISBN-13 (electronic):978-7-4842-5729-6, Publisher: A press.</li> <li>Alok Mani Tripathi, Learning Robotic Process Automation, Packt, 1st Edition, 2018.</li> </ol>
<b>References:</b> <ol style="list-style-type: none"> <li>Srikanth Merianda, Robotic Process Automation Tools, Process Automation and Their Benefits, CreateSpace Independent Publishing Platform, 2018.</li> </ol>
<b>Alternate Assessment Tools (AATs) suggested:</b> <ol style="list-style-type: none"> <li>Develop a bot that can fetch details about IBM Laptop prices from Flipkart website.</li> <li>Bring out the pros and cons of any two RPA tools and their applications.</li> </ol>
<b>Web links/e-resources:</b> <ol style="list-style-type: none"> <li><a href="https://www.uipath.com/">https://www.uipath.com/</a></li> </ol>





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**MASTER OF COMPUTER APPLICATIONS**  
**Scheme of Teaching and Examination**  
(Effective from the Academic year 2024-25)

**SEMESTER – II**

**Big Data Analytics**

Course Code	MMCA263	CIE Marks	50
Contact Hours (L:T:P)	3:0:0	SEE Marks	50
Total Number of Lecture Hours	40L	Exam Hours	3

**Credits: 03**

**Course objectives:**

This course will enable the students to

1. Understand the basics of analytics process model and its requirements.
2. Solve any given analytics problem by applying various algorithms for handling large volumes of data.
3. Understand the HDFS architecture and Map-Reduce techniques for solving the big data problems.
4. Explore Spark architecture and its APIs.
5. Explore advanced big data analytics concepts.

**Preamble:** The Big Data Analytics course teaches students key skills for analysing large datasets and understanding the entire data analytics process. With real-time applications in sectors like IT, healthcare, and marketing, the course emphasizes the growing demand for professionals who can derive actionable insights from big data. Graduates will be well-prepared for dynamic career opportunities, ready to tackle real-world challenges in data analytics.

**Module – 1**

**Big Data and Analytics**

Example applications, Basic nomenclature, Analysis Process Model, Analytical model requirements, Types of data sources, Sampling, Types of data elements, Data exploration, Exploratory statistical analysis, Missing values, Outlier detection and Treatment, Standardizing data labels, Categorization.

(08 Hours)

**Module – 2**

**Descriptive Analytics and Data Processing**

Overview of predictive and descriptive analytics, Basic descriptive analytics concepts, Association rules and Sequence rules, Segmentation techniques, Handling large-scale data.

(08 Hours)

**Module – 3**

**The Hadoop Distributed File System (HDFS)**

The Design of HDFS, HDFS architecture, HDFS concepts, Blocks, Namenodes and Datanodes, HDFS federation, HDFS high-availability.

**File Operations**

Anatomy of a file read, Anatomy of a file write.

**MapReduce Framework**



Using a sample dataset (Weather Data), Map and reduce functions, Data flow, Scaling out, Java MapReduce, Combiner functions, Input splits, Configuration files and Running distributed jobs on a cluster. (08 Hours)
<b>Module – 4</b>
<b>Introduction to Apache Spark</b> Spark's Architecture, Language APIs, Data frames, Partitions, Lazy evaluation, Spark's toolset, Structured API execution, Key transformations and actions. (08 Hours)
<b>Module – 5</b>
<b>Programming Hive</b> Hive in the Hadoop Ecosystem, Data Types and File Formats, HiveQL: Data Definition, Databases in Hive, Alter Database, Creating Tables, External Tables, Partitioned Tables, External Partitioned Tables, Dropping Tables, Alter Tables, HiveQL: Data Manipulation, Queries (till GROUP BY Clauses). (08 Hours)
<b>Course outcomes:</b> The students will be able to: CO1: Apply big data analytics concepts to real-world challenges. CO2: Analyse large datasets using descriptive/predictive techniques. CO3: Illustrate distributed data processing using Hadoop components. CO4: Write Hive queries against large datasets on clusters.
<b>CIE:</b> <ul style="list-style-type: none"> <li>60% of CIE is based on Internal Assessment Tests</li> <li>40% of CIE is based on Alternate Assessment Methods</li> </ul>
<b>SEE:</b> <ul style="list-style-type: none"> <li>SEE will be conducted for 100 marks.</li> </ul>
<b>Text Books:</b> <ol style="list-style-type: none"> <li>Bart Baesens, "Analytics in a Big Data World: The Essential Guide to Data Science and its Applications" Wiley.</li> <li>Tom White, "Hadoop: The Definitive Guide", 3rd Edition, O'reilly, 2012.</li> <li>Bill Chambers, Matei Zaharia, "Spark: The Definitive Guide", O'reilly, 2018.</li> <li>Jason R, Dean W, Edward C, "Programming Hive", O'reilly, 2012.</li> </ol>
<b>References:</b> <ol style="list-style-type: none"> <li>Boris Lublinsky, Kevin T. Smith, Alexey Yakubovich, "Professional Hadoop Solutions", Wiley.</li> <li>Chris Eaton, Dirk Deroos et al., "Understanding Big data", McGraw Hill, 2012.</li> </ol>
<b>Alternate Assessment Tools (AATs) suggested:</b> <ol style="list-style-type: none"> <li>Case study on analyzing a dataset using exploratory data analysis techniques.</li> <li>Hands-on assignments where students apply segmentation techniques on dataset provided.</li> </ol>
<b>Web links/e-resources:</b> <ol style="list-style-type: none"> <li><a href="https://www.youtube.com/live/XueP_cx_rqg?si=PLRXLywCTRtr24mk">https://www.youtube.com/live/XueP_cx_rqg?si=PLRXLywCTRtr24mk</a></li> <li><a href="https://youtu.be/zez2Tv-bcXY?si=Qg96qLtwR07QQ9Wb">https://youtu.be/zez2Tv-bcXY?si=Qg96qLtwR07QQ9Wb</a></li> </ol>





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**SEMESTER – II**

**Blockchain Technology**

Course Code	MMCA264	CIE Marks	50
Contact Hours (L:T:P)	3:0:0	SEE Marks	50
Total Number of Lecture Hours	40L	Exam Hours	3

**Credits: 03**

**Course objectives:**

This course will enable students to

1. Understand the fundamentals of Blockchain and Bitcoin
2. Differentiate variants of Blockchain and Cryptocurrencies
3. Apply complex methods in Blockchain for privacy and conflict resolution
4. Implement the key concepts of Bitcoin
5. Design smart contracts in real-time applications

**Preamble:** Securing the transactions and eliminating the third party involvement in financial transactions is gaining importance and Blockchain technology will provide lots of use cases in multiple domains like banking, healthcare etc. Blockchain expertise will provide good career growth as businesses turn to implementation of Blockchain technology for secure transactions.

**Module – 1**

**Introduction**

Introduction to Blockchain, How Blockchain works, Blockchain vs Bitcoin, Practical applications, Public and private key basics, Pros and cons of Blockchain, Myths about Bitcoin.  
(08 Hours)

**Module – 2**

**Architecture**

Blockchain: Architecture, versions, variants, use cases, Life use cases of blockchain, Blockchain vs shared Database, Introduction to cryptocurrencies, Types, Applications.  
(08 Hours)

**Module – 3**

**Hashing in Blockchain**

Concept of Double Spending, Hashing, Mining, Proof of work.  
Introduction to Merkel tree, Privacy, payment verification, Resolving Conflicts, Creation of Blocks.  
(08 Hours)

**Module – 4**

**Bitcoin concepts**

Introduction to Bitcoin, key concepts of Bitcoin, Merits and De Merits Fork and Segwits, Sending and Receiving bitcoins, Choosing bitcoin wallet, Converting Bitcoins to Fiat Currency.  
(08 Hours)

**Module – 5**

**Smart Contract**

Introduction to Smart contracts, usage, Application, working principle, Laws and Regulations, Introduction to Ethereum, Advantages and Disadvantages, Ethereum vs Bitcoin, Case Studies  
(08 Hours)



**Course outcomes:**

The students will be able to:

C01: Explain the significance of Blockchain for security and transparency.

C02: Illustrate the Blockchain Architecture.

C03: Outline the concepts of Cryptocurrency networks.

C04: Analyse the applications of smart contracts in various domains.

C05: Identify various use cases of Blockchain technology.

**CIE:**

- 60% of CIE is based on Internal Assessment Tests
- 40% of CIE is based on Alternate Assessment Methods

**SEE:**

- SEE will be conducted for 100 marks.

**Textbooks:**

1. Bikramaditya Singhal , Gautam Dhameja, "Beginning Blockchain: A Beginner's Guide to Building Blockchain Solutions", APress
2. Arshdeep Bahga, Vijay Madisetti, "Blockchain Applications: A Hands-On Approach", APress

**References:**

1. Melanie Swan, "Blockchain", Oreilly
2. Arthu.T, "Bitcoin and Blockchain Basics: A non-technical introduction for beginners"
3. Aravind Narayan. Joseph Bonneau, "Bitcoin and Cryptocurrency Technologies", Princeton

**Alternate Assessment Tools (AATs) suggested:**

1. Case studies on public, private and hybrid blockchain
2. Creation of Cryptocurrency wallet

**Web links/e-resources:**

1. <https://builtin.com/blockchain/blockchain-applications>
2. Smart Contracts - [https://www.youtube.com/watch?v=wT6Qa\\_kxM6Y](https://www.youtube.com/watch?v=wT6Qa_kxM6Y)





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**SEMESTER – II**

**Software Quality Assurance**

Course Code	MMCA265	CIE Marks	50
Contact Hours (L:T:P)	3:0:0	SEE Marks	50
Total Number of Lecture Hours	40L	Exam Hours	3

**Credits: 03**

**Course objectives:**

This course will enable the students to

1. Differentiate the various testing techniques.
2. Analyse the problem and derive suitable test cases.
3. Apply suitable technique for designing of flow graph.
4. Explain the need for planning and monitoring a process

**Preamble:** Software Testing is one of the critical aspect of software development life cycle. It deals with verification and validation of a software. Any software before its release, has to undergo rigorous testing process. Testing individual components and testing an entire system is equally important to ensure the correctness. A combination of techniques is used to test a software system. Specialized testing teams will carry-out the testing process.

**Module – 1**

**Basics of Software Testing**

Humans, Errors and Testing, Software Quality; Requirements, Behavior and Correctness, Correctness Vs Reliability; Testing and Debugging; Test Metrics; Software and Hardware Testing; Testing and Verification.

**Basic Principles, Test case selection**

Defect Management; Execution History; Test Generation Strategies; Static Testing; Test Generation from Predicates. Sensitivity, Redundancy, Restriction, Partition, Visibility and Feedback, Test Specification and cases, Adequacy Criteria.

(08 Hours)

**Module – 2**

**A perspective on Testing**

Basic definitions, Test cases, Insights from a Venn diagram, identifying test cases, Error and fault taxonomies, Level of testing, Examples: Generalized pseudo code, The triangle problem, the Next Date function, The commission problem, The SATM (Simple Automation Teller Machine) problem, The currency converter.

(08 Hours)

**Module – 3**

**Boundary value testing, Equivalence class testing, Decision table based testing**

Boundary value analysis, Robustness testing, Worst-case testing, special value testing, Examples, Random testing, Equivalence classes, Equivalence test cases for triangle problem, Next Date function and commission problem, Guidelines and observations, Decision tables, Test cases for triangle problem.

(08 Hours)

**Module – 4**



<b>Path Testing, Data flow testing, Levels of Testing, Integration Testing</b> DD Paths, Test coverage metrics Basis path testing, Guidelines and observations, Definition Use testing, Traditional view of testing levels, Alternative life cycle models, Separating integration and system testing.
(08 Hours)
<b>Module – 5</b>
<b>Fault Based Testing, Planning and Monitoring the Process, Documenting Analysis and Test</b> Assumptions in fault-based testing, Mutation Analysis, Fault-based Adequacy Criteria; Variations on mutation Analysis; From Test case specification to Test Cases, Scaffolding, Generic vs. specific Scaffolding, Test Oracles, Self-checks as oracles, Capture and Replay. Quality and Process, Test and Analysis strategies and plans, Test strategy document, Analysis and test plan, Test and analysis reports.
(08 Hours)
<b>Course outcomes:</b> The students will be able to: CO1: Demonstrate the phases of Software testing life cycle. CO2: Differentiate between various Testing types. CO3: Design test cases for any given use case. CO4: Evaluate the software application using suitable testing tools.
<b>CIE:</b> <ul style="list-style-type: none"> <li>• 60% of CIE is based on Internal Assessment Tests</li> <li>• 40% of CIE is based on Alternate Assessment Methods</li> </ul>
<b>SEE:</b> <ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> </ul>
<b>Text Books:</b> <ol style="list-style-type: none"> <li>1. Paul C. Jorgensen: Software Testing, A Craftsman's Approach, 3rd Edition, Auerbach Publications, 2008.</li> <li>2. Mauro Pezze, Michal Young: Software Testing and Analysis – Process, Principles and Techniques, Wiley India, 2009.</li> <li>3. Aditya P Mathur: Foundations of Software Testing, Pearson Education, 2008.</li> </ol>
<b>References:</b> <ol style="list-style-type: none"> <li>1. Software testing Principles and Practices – Gopalaswamy Ramesh, Srinivasan Desikan, 2<sup>nd</sup> Edition, Pearson, 2007.</li> <li>2. Software Testing – Ron Patton, 2nd edition, Pearson Education, 2004.</li> <li>3. The Craft of Software Testing – Brian Marrick, Pearson Education, 1995.</li> <li>4. Anirban Basu, Software Quality Assurance, Testing and Metrics, PHI, 2015.</li> <li>5. Naresh Chauhan, Software Testing, Oxford University press.</li> </ol>
<b>Alternate Assessment Tools (AATs) suggested:</b> <ol style="list-style-type: none"> <li>1. Take a mini project and write a test cases.</li> <li>2. Take BMSIT Department of MCA page find error, faculty in it.</li> </ol>
<b>Web links/e-resources:</b> <ol style="list-style-type: none"> <li>1. <a href="https://www.cypress.io/">https://www.cypress.io/</a></li> <li>2. <a href="https://www.selenium.dev/">https://www.selenium.dev/</a></li> <li>3. <a href="https://www.istqb.org/">https://www.istqb.org/</a></li> <li>4. <a href="https://www.ministryoftesting.com/">https://www.ministryoftesting.com/</a></li> </ol>





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**SEMESTER – II**

**Machine Learning Lab**

Course Code	MMCAL27	CIE Marks	50
Contact Hours (L:T:P)	0:0:2	SEE Marks	50
Total Number of Lecture Hours	28P	Exam Hours	3

**Credits: 01**

**Course objectives:**

This course will enable the students to

1. Understand the basic theory underlying machine learning.
2. Formulate machine learning problems corresponding to different applications.
3. Explore a range of machine learning algorithms along with their pros and cons.
4. Apply machine learning algorithms to solve problems of moderate complexity.
5. Optimize the models learnt and report on the expected accuracy achieved.

Sl.No.	Experiments
1.	<b>Web Scraping</b> – A method to obtain large amounts of data from websites. Most of this data is unstructured data in an HTML format which is then converted into structured data in a spreadsheet or a database so that it can be used in various applications. BeautifulSoup is a Python web scraping library that allows us to parse and scrape HTML and XML pages and prepare the dataset in the .csv format.
2.	<b>Data Pre-processing</b> - Process of cleaning, organizing, and transforming raw data before it is used for analysis or modeling. Pre-processing tasks to be included are removing incorrect or irrelevant data, handling missing values, smoothing noisy data, data transformation and data reduction.
3.	<b>Linear Regression</b> - A type of supervised machine learning algorithm that computes the linear relationship between the dependent variable and one or more independent features by fitting a linear equation to observed data. Simple Linear Regression and Multiple Linear Regression will be covered.
4.	K-NN Algorithm
5.	SVM Algorithm
6.	Naïve-Bayes Classifier
7.	Bagging Methods
8.	Boosting Methods

**Course outcomes:**

The students will be able to:

- C01: Analyze the various learning models.  
 C02: Apply machine learning algorithms for the given problems.  
 C03: Build an appropriate learning model for a given data set.  
 C04: Perform statistical and probabilistic analysis of machine learning techniques.  
 C05: Evaluate machine learning algorithms on various data sets.

**CIE:**

- 60% of CIE is based on Cumulative assessment of laboratory program execution.



<ul style="list-style-type: none"> <li>• 40% of CIE is based on IA Test and Alternate Assessment Method.</li> </ul>
<b>SEE:</b> <ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> </ul>
<b>Alternate Assessment Tools (AATs) suggested:</b> <ul style="list-style-type: none"> <li>• Application of ML algorithms on any data set</li> </ul>





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**SEMESTER – II**

**Mobile Application Development Lab**

Course Code	MMCAL28	CIE Marks	50
Contact Hours (L:T:P)	0:0:2	SEE Marks	50
Total Number of Lecture Hours	28P	Exam Hours	3

**Credits: 01**

**Course objectives:**

This course will enable the students to

1. Understand the preliminary requirements to build mobile applications.
2. Design the GUI based activity screens using one of the tools of mobile application.
3. Analyse the flows of activities of mobile applications.
4. Apply the technologies to create mobile adaptive web applications.
5. Implement Test Builds using one of the marketing tools of mobile.

Sl.No.	Experiments
1	Views
2	Activities
3	Fragments
4	Intents
5	Graphics & Media
6	Internal & External Database
7	SMS Messaging
8	Image capturing and Location based applications

**Course outcomes:**

The students will be able to:

- CO1: Analyze the features of mobile devices.
- CO2: Design applications using Android components.
- CO3: Develop mobile based application using database.
- CO4: Design an application using image capturing and location details.
- CO5: Create a mobile application for any given use case.

**CIE:**

- 60% of CIE is based on Cumulative assessment of laboratory program execution.
- 40% of CIE is based on IA Test and Alternate Assessment Method.

**SEE:**

- SEE will be conducted for 100 marks.

**Alternate Assessment Tools (AATs) suggested:**

- Design a Mobile application to track location on google maps.
- Design a Mobile application to capture image and store in mobile memory.





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**SEMESTER – II**

**Communication and Soft Skills**

Course Code	MMCAL29	CIE Marks	-
Contact Hours (L:T:P)	0:0:2	SEE Marks	-
Total Number of Lecture Hours	26P	Exam Hours	-

**Credits: 0**

**Course objectives:**

This course will enable students to

1. Identify the Common Errors in Writing and Speaking of English.
2. Achieve better technical writing and Presentation skills for employment.
3. Acquire Employment and Workplace communication skills.
4. Enhance their conversation and public speaking skills.

**Module – 1**

**Advanced Vocabulary**

Introduction, learning through speeches, Descriptions, Word formation, Synonyms, Antonyms, learning words through situations, Homonyms and Homophones, Words often confused, One word substitution, Phrasal verbs, Idiomatic expressions, Developing technical vocabulary, Eponyms, Jumbled sentences: Introduction, Steps to approach jumbled sentences, Unscrambling a paragraph.

(04 Hours)

**Module – 2**

**Technical Reports and Proposals**

Introduction, Definition, Salient Features, Significance, Types, Use of Graphic Aids/Illustrations, Preparation and Planning, Data Collection, Analyzing and Organizing the Data, Writing and Revising, Preparing an Outline, Structure of Formal Reports, Styles of Reports, Preparing a Checklist, Sample Reports, Technical Proposals - Purpose, Importance, Types and Structure.

(04 Hours)

**Module – 3**

**Technical Writing Skills**

**Email and Other Writings:** Introduction, Email Writing- Reasons for Popularity, Some Common Pitfalls, Guiding Principles for Composition, Maintaining Common Etiquette. Itinerary Writing, Inter-office Memorandum (Memos), Circulars, Notice, Agenda, and Minutes, Writing Instructions, Advertising.

**Blogs and Reviews:** Introduction, Movie Review, Book Review, Blog Writing

(06 Hours)

**Module – 4**



<p><b>Professional Speaking Practices</b></p> <p><b>Conversations, Dialogues and Debates:</b> Introduction, Purpose of General Conversations, Features of a Good Conversation, Tips for Improving Conversations, Short Conversations, Telephonic Skills, Debate, Situational Dialogues and Role Plays.</p> <p><b>The Art of Negotiation:</b> Introduction, Definition, Different Types of Negotiation Styles, Tips for Win-Win Negotiation.</p> <p style="text-align: right;">(06 Hours)</p>
<p><b>Module – 5</b></p>
<p><b>Communication in Workplace</b></p> <p><b>Public Speaking:</b> Introduction, choosing an appropriate pattern, selecting an appropriate method, Art of Persuasion, making speeches interesting, Delivering different types of speeches.</p> <p><b>Group Discussion:</b> Introduction, Definition, Difference between GD and debate, Number and duration, Personality traits to be evaluated, Dynamics of Group Behaviors/Group Etiquette and mannerisms, Type, opening of a GD, summarizing a discussion, Some tips for GD</p> <p><b>Job Interviews:</b> Introduction, Definition, Process, Stages of Interview, Types, Desirable Qualities, Preparation, Using Proper Verbal and Non-verbal Clues, Exhibiting Confidence, Tips for Success.</p> <p style="text-align: right;">(06 Hours)</p>
<p><b>Course outcomes:</b></p> <p>The students will be able to:</p> <p>C01: Understand and identify the Common Errors in Writing and Speaking.</p> <p>C02: Enhance Technical Writing and Presentation skills.</p> <p>C03: Exhibit Employment and Workplace communication skills.</p> <p>C04: Analyze and apply various Techniques of Information Transfer through presentation in different levels</p>
<p><b>Textbooks</b></p> <ol style="list-style-type: none"> <li>1. “Professional Writing Skills in English” published by Fillip Learning – Education (ILS), Bangalore – 2022.</li> <li>2. “Functional English” (As per AICTE 2018 Model Curriculum) (ISBN-978-93-5350-047-4) Cengage learning India Pvt Limited [Latest Edition 2019]</li> </ol> <p><b>References</b></p> <ol style="list-style-type: none"> <li>1. Gajendra Singh Chauhan, Technical Communication, Cengage Learning India Pvt Limited, Latest Revised Edition, 2019.</li> <li>2. N.P. Sudharshana and C. Savitha, English for Engineers, Cambridge University Press, 2018.</li> <li>3. Meenakshi Raman and Sangeetha Sharma, Technical Communication – Principles and Practice, Oxford University Press, Third Edition 2017.</li> </ol>



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**M. Tech – Computer Science and Engineering**  
**Scheme and Syllabus 2024**  
**Year: 2024 - 2025**



# **Institute Vision**

**To emerge as one of the finest technical institutions of higher learning, to develop engineering professionals who are technically competent, ethical and environment friendly for betterment of the society.**

# **Institute Mission**

**Accomplish stimulating learning environment through high quality academic instruction, innovation and industry-institute interface.**



# **Department of Computer Science and Engineering**

## **VISION**

**To develop technical professionals acquainted with recent trends and technologies of computer science to serve as valuable resources for the nation/society.**

## **MISSION**

**Facilitating and exposing the students to various learning opportunities through dedicated academic teaching, guidance and monitoring.**



# **M. Tech in Computer Science and Engineering**

## **Program Educational Objectives (PEOs)**

- PEO1** Apply analytical thinking to solve problems through research and development in the areas of Computer Science and Engineering and allied engineering domains.
- PEO2** Adapt to changing technological trends through life-long learning by exhibiting professional ethics, integrity and career growth.
- PEO3** Develop skills to facilitate in providing sustainable solutions by addressing the growing challenges of the society.

## **Program Outcomes (POs)**

- PO1** Independently carry out research and development work to solve practical problems related to Computer Science and Engineering and allied engineering domains.
- PO2** Write and present a substantial technical report/document.
- PO3** Demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
- PO4** Analyze the acquired domain knowledge for providing feasible security solution(s).
- PO5** Relate the learning outcomes to build requisite competency in professional environment.
- PO6** Appraise the need for engaging in lifelong learning.



## **About the Department**

The Department of Computer Science & Engineering was started in the year 2002 – 2003 with an intake of 60, the Year 2010 with an intake of 90 and 180 in the year 2017 – 2018. Department intake got enhanced to 240 in the year 2023 – 24, currently the intake is 900 for the academic year 2024 - 25. The Department is highly progressive and has a team of well qualified, experienced and dedicated faculty. 47 faculty members hold Doctoral degrees, and 22 Faculty members are currently pursuing their Doctorate degrees. The Department of Computer Science & Engineering continues to recruit faculty members with high experience in academics, industry, and research.

The Department has well-equipped computer laboratories for course work, teaching and to carry out projects. The servers and nodes are all connected in the network with all necessary licensed software. Exposure to cutting edge technologies is provided by means of Industrial Projects and technical talks from domain experts of reputed research organizations. The students are encouraged to involve themselves in creative, technical and research activities. Students have been performing well in the university examination.

The Department maintains a wireless network (Wi-Fi) with unlimited Internet access for use by staff and students. Our graduates are working in leading IT industries and many students have secured admissions to prestigious universities in India and abroad. The Department has an R&D Center as well as an Incubation Center which is facilitating the students to acquire practical knowledge. The Department also offers an M.Tech. Program (post-graduation) in Computer Science & Engineering, which was introduced in the year 2014 with an approved intake of 18.

## **About M.Tech in Computer Science and Engineering**

M.Tech (Computer Science and Engineering) commenced in the year 2014 with an intake of 18 students. The Post Graduate Program in Computer Science & Engineering is an affiliated program offered by Visvesvaraya Technological University (VTU), Belagavi. The curriculum is designed by the university and has been common across all the institutions affiliated to it. Highly experienced faculty members with doctoral degrees handle the courses for this program. The program is accredited by National Board of



Accreditation (NBA) till Jun 2025. This is only PG program in the state of Karnataka to have got accreditation in the first attempt under Tier II. Students and faculty members are proactively involved in high end research activities and have published impetus research publications in domains of Computer Network, Network Security, AI and Data Science. Students undergo 8 weeks industrial internship in many reputed companies like Nokia, Siemens, Robert Bosch, Phillips and many more. Many students are aspirant of the higher studies (Ph.D.) in various domains

## **PREAMBLE**

In keeping abreast with India's recent National Education Policy (NEP 2020), the Indian Institute of Science, Bengaluru, has designed the Master of Technology (Online) degree program, for practicing engineers and scientists. Towards the attainment of such a holistic and multidisciplinary education, the flexible and innovative curriculum has been provided at BMSIT&M with credit-based courses and projects/internships/special courses in the areas of community engagement and public service, environmental education, and value-based education.

The emphasis is more on the core competency in the curriculum of the program to enhance opportunities for placement through industry relevant courses as program core and program electives. This is effectively attained with proper design, operation and improvement in academic components in the system with inclusive focus on Modern teaching methods, advanced curricula, innovative assessment methods, research temperament, industry associated curriculum. Implementation of academic autonomy can be with supportive governance and administrative structure is properly planned and put in place.

Curricular inputs for the framework are from all the stakeholders involved in the academic process and referring curriculum from standard and well-known universities/colleges. Input for the framework is also from Professional bodies like IEEE and CSI which recommends the advanced courses for the PG program of 2 years. The expected learning outcomes of autonomous curriculum of BMSIT&M cater to the aspiration of learner in terms of higher education, research, industry requirements. Develop learner's inquisitiveness and focus on research and development of disruptive technologies. Incorporation of ICT tools imperatively blended in the autonomous curricula reaching all class of learners.

With this preamble, the curriculum for the autonomous BMSIT&M has been designed to meet the contemporary needs (aspirations) of primary stakeholders (students) with the following.



## **Salient features**

1. **Inclusion of NEP 2020:** The aspiration of NEP 2020 and various levels has been incorporated in the M.Tech Computer Science Engineering (Autonomous) with inclusive focus on practical work, industrial internship, emphasis on research to solve the societal issues and latest trends as courses.
2. **Induction Programme:** There will be a week-long induction program for the PG students entering the institution. The incumbents learn about the institutional policies, processes, practices, culture and values.
3. **Post Graduate Program Outcomes (PO) Based Curriculum:** The curricula for the program is designed to meet the post graduate attributes (Program Outcomes) defined by National Board of Accreditation which are based on the knowledge, research, skill, ethics and higher learning.
4. **Emphasis on Research Project Based Learning:** To impart the skills to the prospective researcher, the emphasis on practical sessions is extended in the curricula for all the programs. At each semester, the adequate number of practical/laboratory courses is included. Further, some of the theory courses are blended with practical as integrated course.



5. **Industry exposure through Lab work, Mini projects and Internships:** The curricula include industry internships and mini projects for the students to expose them to the real-world experience at industrial environment. Mini projects expose to better technical articulation and project cycles.
6. **Self-Learning:** The curriculum provides with an opportunity for the students to take the initiative, with or without the assistance of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, and evaluating learning outcomes.
7. **Multiple avenues based on aspirations of the students:** The students will study the program specific courses for two years. There are three major avenues for the aspiring students to pursue:
  - **Industry/Placement:** The students who are aspiring to work as professional engineers in their core industrial domain have the option of studying the courses in the curriculum which are aligned towards the placement opportunities.
  - **Research:** The curriculum provides an opportunity for the students to pursue the courses which are in support of higher learning enabling the learner to do research work in the desired domain of interest.
  - **Presentation and Articulation:** The curriculum provides opportunities to present flexible assessment method for the course which improves communication and expect document this as report.

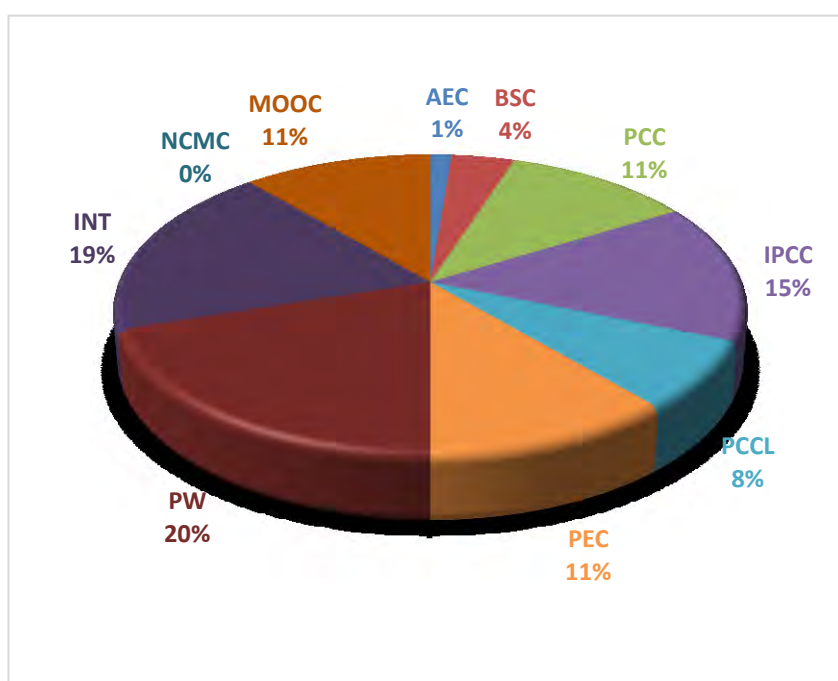


## Credit Distribution of M. Tech Computer Science and Engineering (Autonomous-2024)

SEM	AEC	BSC	PCC	IPCC	PCCL	PEC	MDC	PW	PBLC	INT	NCMC	MOOC	Total Credits
I		3	9	4	4						PP		20
II	1			8	2	9							20
III								4		5		9	18
IV								12		10			22
<b>Total</b>	<b>1</b>	<b>3</b>	<b>9</b>	<b>12</b>	<b>6</b>	<b>9</b>		<b>16</b>		<b>15</b>		<b>9</b>	<b>80</b>

<b>AEC/SEC</b>	Ability/Skill Enhancement Course	<b>BSC</b>	Basic Science Course
<b>PCC</b>	Professional Core Course	<b>IPCC</b>	Integrated Professional Core Course
<b>PCCL</b>	Professional Core Course Lab	<b>PEC</b>	Professional Elective Course
<b>MDC</b>	Multi-Disciplinary Course	<b>PW</b>	Project Work
<b>PBLC</b>	Project Based Learning Course	<b>INT</b>	Internship
<b>NCMC</b>	None Credit Mandatory Course	<b>MOOC</b>	Massive Online Open Course

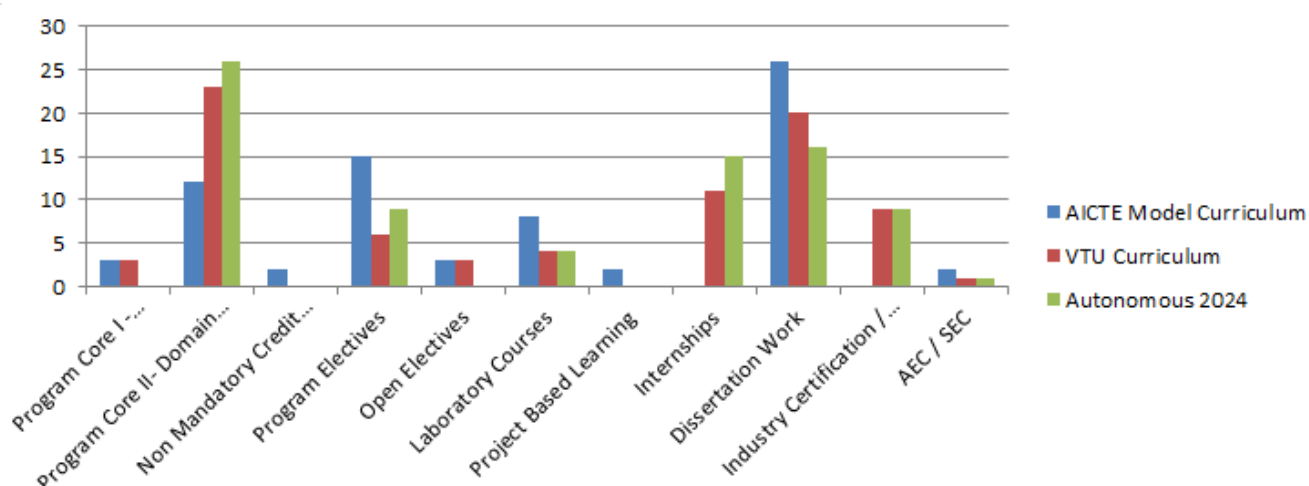
### CREDIT DISTRIBUTION M. TECH - CSE





## Statistical Comparison Curriculum Components with AICTE and VTU

Sl. No	Curriculum Components	AICTE Model Curriculum	VTU Curriculum	Autonomous 2024
1	Program Core I - Mathematics	3	3	-
2	Program Core II- Domain Specific	12	23	26
3	Non-Mandatory Credit Courses	2	-	PP
4	Program Electives	15	6	9
5	Open Electives	3	3	-
6	Laboratory Courses	8	4	4
7	Project Based Learning	2	-	-
8	Internships	-	11	15
9	Dissertation Work	26	20	16
10	Industry Certification / MOOC	-	9	9
11	AEC / SEC	2	1	1



**Inclusion the autonomous curriculum is at par and above the standard prescribed**





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(Effective from the academic year 2024 - 25 onwards)

## I Semester M Tech COMPUTER SCIENCE AND ENGINEERING

Sl. No.	Course Category	Course Code	Course Name	Teaching Department	Credits Distribution				Examination				Contact Hours/week
					L	T	P	Total	CIE Marks	SEE Marks	Total Marks	SEE Duration (H)	
1	BSC	24MAT11	Applied Mathematics	MT	2	2	0	3	50	50	100	3	4
2	IPCC	24MCS12	Advanced Algorithms	CS	3	0	2	4	50	50	100	3	5
3	PCC	24MCS13	Artificial Intelligence	CS	3	0	0	3	50	50	100	3	3
4	PCC	24MCS14	Fundamentals of Data Science	CS	3	0	0	3	50	50	100	3	3
5	PCC	24MCS15	Cryptography and Network security	CS	2	2	0	3	50	50	100	3	4
6	PCCL	24MCSL16	Artificial Intelligence Laboratory	CS	0	1	2	2	50	50	100	3	4
7	PCCL	24MCSL17	No SQL Database Laboratory	CS	0	1	2	2	50	50	100	3	4
8	NMC	24MRMI18	Research Methodology and IPR	-	-	-	-	PP	Online courses (online.vtu.ac.in)				
<b>TOTAL</b>					<b>13</b>	<b>4</b>	<b>3</b>	<b>20</b>	<b>350</b>	<b>350</b>	<b>700</b>		

Note: **BSC**-Basic Science Courses, **PCC**: Professional core. **IPCC**-Integrated Professional Core Courses, **PCC(PB)**: Professional Core Courses (Project Based), **PCCL**-Professional Core Course lab, **NMC**- None Credit Mandatory Course, **L**-Lecture, **P**-Practical, **T/SDA**-Tutorial / Skill Development Activities (Hours are for Interaction between faculty and students)

**MRMI19**- Research Methodology and IPR (**Online**) for the students who have **not studied** this course in the Undergraduate level. This course is not counted for vertical progression, Students have to qualify for the award of the master's degree.

**M**- Master program **xx** – **ME** for Mechanical Engineering Stream, **CV** for Civil Engineering Stream, **EE** – Electrical & Electronics Engineering Stream, **EC**- Electronics and Communication Engineering Stream, **CS**- Computer Science and Engineering **BA** - Business Administration **AR**- Architecture- etc.



**BSC: Basic Science Courses:** Courses like Mathematics/ Science are the prerequisite courses that the concerned engineering stream board of Studies will decide. **PCC: Professional Core Course:** Courses related to the stream of engineering, which will have both CIE and SEE components, students have to qualify in the course for the award of the degree. **Integrated Professional Core Course (IPCC):** Refers to a Professional Theory Core Course Integrated with practical of the same course. The IPCC's theory part shall be evaluated by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper. **Project Based Learning Course (PCC(PB):** Project Based Learning course is a professional core Course only Students have to complete a project out of learning from the course and SEE will be viva voce on project work. **PCCL: Professional Core Course Laboratory:** Practical courses whose CIE will be evaluated by the class teacher and SEE will be evaluated by the two examiners.

**Skill development activities: Under Skill development activities** in a concerning course, the students should

1. Interact with industry (small, medium, and large).
2. Involve in research/testing/projects to understand their problems and help creative and innovative methods to solve the problem.
3. Involve in case studies and field visits/ fieldwork.
4. Accustom to the use of standards/codes etc., to narrow the gap between academia and industry.
5. Handle advanced instruments to enhance technical talent.
6. Gain confidence in the modelling of systems and algorithms for transient and steady-state operations, thermal study, etc. Work on different software/s (tools) to simulate, analyze and authenticate the output to interpret and conclude.

All activities should enhance student's abilities to employment and/or self-employment opportunities, management skills, Statistical analysis, fiscal expertise, etc. Students and the course instructor/s are to be involved either individually or in groups to interact together to enhance the learning and application skills of the study they have undertaken. The students with the help of the course teacher can take up relevant technical –activities that will enhance their skills. The prepared report shall be evaluated for CIE marks.

**MRMI19-Research Methodology and IPR-** None Credit Mandatory Course (NMC) if students have not studied this course in their undergraduate program then he /she has to take this course at <http://online.vtu.ac.in> and to qualify for this course is compulsory before completion of the minimum duration of the program (Two years), however, this course will not be considered for vertical progression.





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### II Semester M Tech Computer Science and Engineering

Sl. No.	Course Category	Course Code	Course Name	Teaching Department	Credits Distribution				Examination				Contact Hours/week
					L	T	P	Total	CIE Marks	SEE Marks	Total Marks	SEE Duration (H)	
1	IPCC	24MCS21	Machine Learning	CS	3	0	2	4	50	50	100	3	3
2	IPCC	24MCS22	Internet of Things	CS	3	0	2	4	50	50	100	3	4
3	PEC	24MCS23X	Specialization Course-I	CS	3	0	0	3	50	50	100	3	4
4	PEC	24MCS24X	Specialization Course-II	CS	3	0	0	3	50	50	100	3	4
5	PEC	24MCS25X	Specialization Course-III	CS	3	0	0	3	50	50	100	3	3
6	PCCL	24MCSL26	Web Applications Development Laboratory	CS	0	1	2	2	50	50	100	3	4
7	AEC/SEC	24MCS27X	Ability/Skill Enhancement Course (Offline/Online)	CS	0	0	2	1	50	50	100	3	2
<b>TOTAL</b>					<b>15</b>	<b>0</b>	<b>8</b>	<b>20</b>	<b>350</b>	<b>350</b>	<b>700</b>	<b>-</b>	<b>-</b>

Note: **PCC**: Professional core. **IPCC**-Integrated Professional Core Courses, **PCC(PB)**: Professional Core Courses (Project Based), **PCCL**-Professional Core Course lab, **PEC**- Professional Elective Courses, **MDC**- Multi-Disciplinary Courses

, **L-Lecture, P-Practical, T/SDA-Tutorial / Skill Development Activities** (Hours are for Interaction between faculty and students)

**L-Lecture, P-Practical, T/SDA-Tutorial / Skill Development Activities** (Hours are for Interaction between faculty and students) **PBLC**: Project Based Learning Course,

Note: **xxx** means specialization code for example **MDE- Design** Engineering, **LDN**- Digital Communication and Networking, **SCE**- Computer Engineering, **CCT**- Construction Technology, **AUD**- Urban Design, **MBA**- Master of Business Administration, **MCA**-Master of Computer Application, etc



Ability / Skill Enhancement Courses					
Course Code	Course title	L	T/SD A	P	
24MCS27A	Mobile Application Development Laboratory	0	0	2	
24MCS27B	Requirement Analysis and Software Testing Tools	0	0	2	
24MCS27C	GIT for DEVOPS	0	0	2	
24MCS27D	Introduction to Kafka	0	0	2	
24MCS27E	Kubernetes and Docker Laboratory	0	0	2	
<p><b>Ability Enhancement Courses (AEC):</b>. These courses are designed to help students enhance their skills in communication, language, and personality development. They also promote a deeper understanding of subjects like social sciences and ethics, culture and human behavior, human rights, and the law.</p> <p><b>Skill Enhancement Course (SEC):</b> Skill Enhancement Course means a course designed to provide value-based or skill-based knowledge and should contain both theory and lab/hands- on/training/fieldwork. The main purpose of these courses is to provide students with life skills in the hands-on mode to increase their employability.</p> <p><b>If AEC/SEC courses are ONLINE (MOOCs) courses</b> suggested by the concerned board of studies. These courses will be made available on <b>www.online.vtu.ac.in</b>, however online courses are not considered for vertical progression, but qualifying in online courses is mandatory for the award of the degree.</p>					

Specialization Basket 1			
Course Code	Course Title	Course Code	Course Title
24MCS23A	Probability, Statistics and Queuing Theory	24MCS23B	Statistical Learning and Data Mining
24MCS23C	Queuing Theory in Network Communications	24MCS23D	Graph Algorithms and Mining
24MCS23E	Cyber Security and Forensics	24MCS23F	Secure Cloud Computing
24MCS23G	Blockchain Technologies	24MCS23H	Secure Software Development

Specialization Basket 2			
Course Code	Course Title	Course Code	Course Title
24MCS24A	Augmented and Virtual Reality	24MCS24B	Spatial Computing and Mixed Reality
24MCS24C	3D Modeling and Animation for AR/VR	24MCS24D	Human-Computer Interaction
24MCS24E	Natural Language Processing	24MCS24F	Web Based Information Retrieval
24MCS24G	Semantic Web	24MCS24H	Generative AI and Prompt Engineering



Specialization Basket 3			
Course Code	Course Title	Course Code	Course Title
24MCS25A	Agile Technology	24MCS25B	Web Engineering
24MCS25C	Object Oriented Analysis and Design	24MCS25D	Program Management





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### III Semester M. Tech COMPUTER SCIENCE AND ENGINEERING

Sl. No.	Course Category	Course Code	Course Name	Teaching Department	Credits Distribution				Examination			
					L	T	P	Total	CIE Marks	SEE Marks	Total Marks	SEE Duration (H)
1	PCC	24MCS31	Online Course (12 weeks duration)	CS	3	0	0	3	25	75	100	-
2	PCC	24MCS32	Online Course (12 weeks duration)	CS	3	0	0	3	25	75	100	-
3	PCC	24MCS33	Online Course (12 weeks duration)	CS	3	0	0	3	25	75	100	-
4	INT	24MINT34	Internship Phase I (Research/Industry Internship leading to Project work)	CS	0	0	10	5	100	---	100	-
5	PW	24MPROJ35	Project Phase I	CS	0	0	8	4	100	---	100	-
<b>TOTAL</b>					<b>9</b>	<b>0</b>	<b>18</b>	<b>18</b>	<b>275</b>	<b>225</b>	<b>500</b>	

- **Professional Core Course (PCC):** It is an Online course and been proctored by the faculty throughout the semester. Students can choose the online course/certification programs from NPTEL (The courses are identified by BOS). They may present the final certificate for internal assessment. Student can take the course during II semester break and need to submit the course completion certificate before semester end examination for evaluation.
- **Project Work Phase-1:** Students in consultation with the guide/co-guide if any shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall prepare relevant introductory project document and present a seminar. CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded for project work phase -1 shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session in the ratio 50:25:25.
- **Internship Phase-1:** All the students shall have to undergo mandatory internship of 4-6 weeks during the semester. Those, who have not pursued /completed the internship, shall be declared as fail in internship course and have to complete the same during subsequent semester end examinations after satisfying the internship requirements.





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## IV Semester M Tech COMPUTER SCIENCE AND ENGINEERING

Sl. No.	Course Category	Course Code	Course Name	Teaching Department	Credits Distribution				Examination				Contact Hours
					L	T	P	Total	CIE Marks	SEE Marks	Total Marks	SEE Duration	
1	INT	24MINT41	Internship Phase II (Research/Industry Internship leading to Project work)	CS	0	0	20	10	100	100	200	3	20
2	PW	24MPROJ42	Project Phase II	CS	0	0	24	12	100	100	200	3	24
TOTAL					0	0	44	22	200	200	400	-	44

- **Internship Phase-2:** All the students shall have to undergo mandatory internship of 6-8 weeks during the semester. Those, who have not pursued /completed the internship, shall be declared as fail in internship course and have to complete the same during subsequent semester end examinations after satisfying the internship requirements.
- **Project Work Phase-2:** CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide, if any, and a senior faculty of the department. The CIE marks awarded for project work phase -2 shall be based on the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25. SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check (below 20%).



# Online Course Pool for M.TECH. COMPUTER SCIENCE AND ENGINEERING

## NPTEL Courses (Currently Offered) July-2024

Sl no.	Course ID	Course Name	SME Name	Institute	UG/PG
1	noc24-cs86	Distributed Optimization and Machine Learning	Prof. Mayank Baranwal	IIT Bombay	PG
2	noc24-cs112	Secure Computation: Part II	Prof. Ashish Choudhury	IIIT Bangalore	PG
3	noc24-cs85	Practical Cyber Security for Cyber Security Practitioners	Prof. Sandeep K. Shukla	IIT Kanpur	UG/PG
4	noc24-cs100	Randomized Methods in Complexity	Prof. Nitin Saxena	IIT Kanpur	UG/PG
5	noc24-cs87	Computational Arithmetic - Geometry for Algebraic Curves	Prof. Nitin Saxena	IIT Kanpur	UG/PG
6	noc24-cs102	Reinforcement Learning	Prof. Balaraman Ravindran	IIT Madras	UG/PG
7	noc24-cs89	Deep Learning for Computer Vision	Prof. Vineeth N Balasubramanian	IIT Hyderabad	UG/PG
8	noc24-cs117	Parameterized Algorithms	Prof. Neeldhara Misra Prof. Saket Saurabh	IIT Gandhinagar	UG/PG
9	noc24-cs104	Applied Accelerated Artificial Intelligence	Prof. Satyajit Das Prof. Satyadhyan Chickerur Prof. Bharatkumar Sharma Prof. Adesuyi Tosin	IIT Palakkad KLE Technological University NVIDIA	PG
10	noc24-cs90	Social Network Analysis	Prof. Tanmoy Chakraborty	IIT Delhi	UG/PG
11	noc24-cs119	Software Engineering	Prof. Rajib Mall	IIT Kharagpur	PG
12	noc24-cs106	Computational Complexity	Prof. Subrahmanyam Kalyanasundaram	IIT Hyderabad	PG
13	noc24-cs114	Deep Learning - IIT Ropar	Prof. Sudarshan Iyengar Prof. Sukrit Gupta	IIT Ropar	UG/PG
14	noc24-cs121	Cyber Security and Privacy	Prof. Saji K Mathew	IIT Madras	PG
15	noc24-cs93	Multi-Core Computer Architecture	Prof. John Jose	IIT Guwahati	UG/PG
16	noc24-cs107	Statistical Learning for Reliability Analysis	Prof. Monalisa Sarma	IIT Kharagpur	UG/PG
17	noc24-cs94	Ethical Hacking	Prof. Indranil Sengupta	IIT Kharagpur	UG/PG
18	noc24-cs125	Programming in Modern C++	Prof. Partha Pratim Das	IIT Kharagpur	UG/PG
19	noc24-cs95	Introduction to Industry 4.0 and Industrial Internet of Things	Prof. Sudip Misra	IIT Kharagpur	PG
20	noc24-cs116	Introduction To Algorithms and Analysis	Prof. Sourav Mukhopadhyay	IIT Kharagpur	UG/PG
21	noc24-cs109	Algorithmic Game Theory	Prof. Palash Dey	IIT Kharagpur	PG
22	noc24-cs126	Design & Implementation of Human-Computer Interfaces	Prof. Samit Bhattacharya	IIT Guwahati	UG/PG
23	noc24-cs97	Approximation Algorithm	Prof. Palash Dey	IIT Kharagpur	UG/PG
24	noc24-cs132	Responsible & Safe AI Systems	Prof. Ponnurangam Kumaraguru Prof. Balaraman Ravindran Prof. Arun Rajkumar	IIIT Hyderabad and IIT Madras	UG/PG



# **SEMESTER – I**



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**

Choice Based Credit System (CBCS)

**SEMESTER - I****Applied Mathematics (2:2:0) 3**

(Effective from the academic year 2024-25)

Course Code	24MAT11	CIE Marks	50
Teaching Hours/Week (L:T:P)	2:2:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3

**Course Objectives:** This course will enable students to:

1. Explore the foundational aspects of statistical methods and Linear Algebra.
2. Apply the concept of probability distribution of discrete and continuous random variables.
3. Apply the concept of Linear Algebra and Vector Spaces to solve real world problems.
4. Analyze the statistical data for testing of hypothesis and draw inferences using Number Theory

**Preamble:** Applied Mathematics is a branch of mathematics that focuses on the practical application of mathematical techniques to solve real-world problems across various fields such as science, engineering, economics, and industry. It involves using mathematical models, algorithms, and computational methods to analyze and predict the behavior of complex systems. Applied mathematicians work on problems like optimizing processes, modeling natural phenomena, and designing systems for efficiency and reliability. The field bridges the gap between theoretical mathematics and practical applications, enabling innovations in areas such as cryptography, data analysis, fluid dynamics, financial modeling, and more.

**Module – 1**

**Introduction:** Understanding of Vector spaces, graph theory, Statistical models & their applications in Engineering, Economics and Statistics.

**Linear Algebra-I**

**Vector Spaces:** Vector spaces; subspaces Linearly independent and dependent vectors, Basis and dimension, coordinate vectors-Illustrative examples. Linear transformations, Representation of transformations by matrices.

(8 hours)

**Module – 2****Linear Algebra-II**

Computation of Eigen values and Eigen vectors of real symmetric matrices-Jacobi and Given's method. Orthogonal vectors and orthogonal basis. Gram-Schmidt Orthogonalization process. QR decomposition, singular value decomposition.

(8 hours)

**Module – 3**

**Random Variables:** Review of Random Variables, Probability Distributions: Binomial distribution, Poisson distribution, Normal distribution, Exponential distribution and Uniform distribution.

(8 hours)



<b>Module – 4</b>
<b>Joint probability distribution and Stochastic Process:</b> Joint probability distribution (both discrete and continuous). Stochastic Processes: Introduction, Classification of stochastic processes, discrete time processes, Stationary, Ergodicity, Autocorrelation. <div style="text-align: right;">(8 hours)</div>
<b>Module – 5</b>
<b>Number Theory:</b> Divisibility, GCD, Euclidean algorithm, Congruences, Linear Congruences, The Chinese Remainder theorem, Solving Polynomials, Linear Diophantine Equation, System of Linear Congruences, Euler's Theorem, Wilson Theorem and Fermat's little theorem. <div style="text-align: right;">(8 hours)</div>
<b>Course Outcomes:</b> The students will be able to CO1: Apply probability formulations for new predictions with discrete and continuous RV's. CO2: Solve the vector spaces and related topics arising in magnification and rotation of images. CO3: Interpret the probability distribution arising in the study of engineering problems and their applications. CO4: Apply the statistical tools in multi variable distributions. CO5: Demonstrate knowledge and critical understanding of the well-established principles within Number Theory.
<b>Question paper pattern:</b> <ul style="list-style-type: none"> <li>● SEE will be conducted for 100 marks.</li> <li>● Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>● CIE will be announced prior to the commencement of the course.</li> <li>● 25 marks for test. An average of three tests will be taken.</li> <li>● 25 marks for Flexible Assessment Method.</li> </ul>



**Textbooks:**

1. David C.Lay, Steven R.Lay and J.J.McDonald, “Linear Algebra and its Applications”, 5th Edition, Pearson Education Ltd., 2015.
2. T.Veerarajan, “Probability, Statistics and Random Process”, 3rdEdition,Tata McGraw Hill Co., 2016.
3. Neal Coblitz, “A Course in Number Theory and Cryptography”, Springer Verlag, Second edition, 2012.

**References:**

1. B.S. Grewal, “Higher Engineering Mathematics”, Khanna Publishers, 44th Edition, 2017.
2. John Vince, “Foundation Mathematics for Computer Science”, Springer International Publishing, Switzerland, 2015.
3. Burton, David M. Elementary number theory. Second edition. W. C. Brown Publishers, Dubuque, IA, 1989.

**Web Resources:**

1. Introduction to Probability and Statistics by the University of London: University of London. “Introduction to Probability and Statistics.” Coursera, [www.coursera.org/learn/probability-statistics](http://www.coursera.org/learn/probability-statistics).
2. Introduction to Number Theory by Stanford University (offered through Stanford Online but listed on Coursera): Stanford University. “Introduction to Number Theory.” Coursera, [www.coursera.org/learn/number-theory](http://www.coursera.org/learn/number-theory)



**Textbooks:**

1. William Stallings, Cryptography and Network Security Principles and Practice, 7 th edition, Pearson, 2019.

**References:**

1. Damien Vergnaud and Michel Abdalla, Applied Cryptography and Network Security, 7th International Conference, ACNS 2009, Paris-Rocquencourt, France, June 2-5, 2009, Proceedings.
2. B. Schneier, "Applied Cryptography: Protocols, Algorithms, and Source Code in C", 2<sup>nd</sup> Edition, John Wiley & Sons, 1995.
3. Mihir Bellare and Phillip Rogaway, "Introduction to Modern Cryptography", 2005.
4. Alfred J. Menezes, Paul C. van Oorschot and Scott A. Vanstone, "Handbook of Applied Cryptography" CRC Press.
5. Neal Koblitz, A Course in Number Theory and Cryptology, Springer 1987.

**Web Resources:**

1. "Cryptography" by Stanford University: Stanford University. "Cryptography." Coursera, [www.coursera.org/learn/crypto](http://www.coursera.org/learn/crypto).
2. "Applied Cryptography" by the University of Colorado System: University of Colorado System. "Applied Cryptography." Coursera, [www.coursera.org/learn/applied-cryptography](http://www.coursera.org/learn/applied-cryptography).
3. "Introduction to Cryptography" by the University of London: University of London. "Introduction to Cryptography." Coursera, [www.coursera.org/learn/crypto-introduction](http://www.coursera.org/learn/crypto-introduction).



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> Choice Based Credit System (CBCS) <b>SEMESTER - I</b>			
<b>Advanced Algorithms (3:0:2) 4</b> (Effective from the academic year 2024-25)			
Course Code	24MCS12	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:2	SEE Marks	50
Total Number of Contact Hours	50	Exam Hours	3
<b>Course Objectives:</b> This course will enable students to: <ol style="list-style-type: none"> <li>1. Develop skills in analysing and implementing advanced sorting algorithms and matrix multiplication techniques.</li> <li>2. Master string-matching techniques and probabilistic algorithms for efficient data processing.</li> <li>3. Explore graph algorithms and tackle NP-complete problems using various strategies.</li> <li>4. Design parallel algorithms using OpenMP and MPI libraries.</li> </ol>			
<b>Module – 1</b>			
<p><b>Preamble:</b> The Advanced Algorithms course provides learners with a comprehensive understanding of how to create efficient algorithms and analyze their performance. This course covers fundamental algorithmic techniques such as divide-and-conquer, dynamic programming, greedy algorithms, and graph algorithms, as well as complexity analysis to evaluate their efficiency in terms of time and space. Students learn to design algorithms to solve complex computational problems and gain the skills to critically assess the trade-offs between different approaches. By the end of the course, students are well-prepared to apply these principles in both academic and real-world scenarios, ensuring optimal solutions in software development and problem-solving tasks.</p> <p><b>Algorithm Analysis:</b> Algorithm complexity - Growth of functions, Master method solution, Sorting Techniques &amp; their time Complexity: Insertion Sort, Merge Sort, Heap Sort and Quick Sort, Sorting in Linear Time, Amortized Analysis, aggregation method, counting method, Strassen’s algorithm for matrix multiplication. The recurrence – tree method.</p> <p><b>Lab Programs/Experiments:</b></p> <ol style="list-style-type: none"> <li>1. Program to implement Merge Sort, Heap Sort and Quick Sort algorithms.</li> <li>2. Program to implement Strassen’s algorithm for matrix multiplication.</li> <li>3. Solving Algorithm Analysis problems.</li> </ol> <p style="text-align: right;">(10 hours)</p>			
<b>Module – 2</b>			
<p><b>String-Matching Algorithms:</b> Naïve string Matching, Rabin - Karp algorithm; String matching with finite automata, Knuth-Morris-Pratt algorithm; Boyer – Moore algorithms.</p> <p><b>Probabilistic and Randomized Algorithms:</b> Probabilistic algorithms; Randomizing deterministic algorithms, Monte Carlo and Las Vegas algorithms; Probabilistic numeric algorithms.</p> <p><b>Lab Programs:</b></p> <ol style="list-style-type: none"> <li>1. Program to implement Naive algorithm.</li> <li>2. Program to implement Rabin - Karp algorithm.</li> <li>3. Program to implement Boyer – Moore algorithm.</li> <li>4. Program to implement Monte Carlo algorithm.</li> </ol> <p style="text-align: right;">(10 hours)</p>			
<b>Module – 3</b>			
<p><b>Graph Algorithms:</b> Bellman - Ford Algorithm; Single source shortest paths in a DAG; Johnson’s Algorithm for sparse graphs; Flow networks and Ford-Fulkerson method; Maximum bipartite matching. Polynomials and the FFT: Representation of polynomials; The DFT and FFT; Efficient</p>			



<p>implementation of FFT.</p> <p><b>Lab Programs:</b></p> <p>Program to implement Ford-Fulkerson method.</p> <p>Program to implement Johnson's Algorithm.</p> <p style="text-align: right;">(10 hours)</p>
<b>Module – 4</b>
<p><b>Distributed Memory Programming with MPI:</b> Distributed Memory Programming with MPI Getting Started, The Trapezoidal Rule in MPI, Dealing with I/O, Collective Communication, MPI Derived Data types, A Parallel Sorting Algorithm.</p> <p><b>Shared Memory Programming with OpenMP:</b> Introduction to OpenMP, The Trapezoidal Rule, Scope of Variables, The Reduction Clause, The Parallel For Directive.</p> <p><b>Lab Programs:</b></p> <p>Compare the speedup of the parallel implementation of Quick sort using MPI (On a cluster of 5 Nodes) and OpenMP (Shared Memory Implementation on multicore machine).</p> <p>Compare the speedup of the parallel implementation of Merge sort using MPI (On a cluster of 5 Nodes) and OpenMP (Shared Memory Implementation on multicore machine).</p> <p style="text-align: right;">(10 hours)</p>
<b>Module – 5</b>
<p><b>NP-Complete Problems:</b> Polynomial-time solvable problems, NP-Completeness and Reducibility, NP-Complete problems, NP- Hard Problems, Cooke's theorem, Clique decision problem, Graph coloring problem, Directed Hamiltonian cycle problem, Traveling salesman problem.</p> <p><b>Lab Programs:</b></p> <p><b>Traveling Salesman Problem (TSP)</b></p> <p><b>Description:</b> Given a list of cities and the distances between each pair, find the shortest possible route that visits each city exactly once and returns to the origin city.</p> <p><b>Implementation:</b> Use a brute force approach to calculate all possible permutations of city tours and find the shortest one, or use heuristics like nearest neighbour, genetic algorithms, or dynamic programming (e.g., Held-Karp algorithm).</p> <p><b>Graph Colouring Problem</b></p> <p><b>Description:</b> Assign colours to the vertices of a graph so that no two adjacent vertices share the same colour using the minimum number of colours.</p> <p><b>Implementation:</b> Use backtracking to try all possible colourings or employ heuristic algorithms like the greedy colouring algorithm.</p> <p style="text-align: right;">(10 hours)</p>
<p><b>Course outcomes:</b> The students will be able to</p> <p>CO1: Understand advanced methods of designing and analyzing algorithms.</p> <p>CO2: Discuss different areas such as network flows, number theory and utilize concepts therein to develop algorithms in various domains.</p> <p>CO3: Design and implement various algorithms.</p> <p>CO4: Evaluate the implementations with respect to time and space complexity.</p> <p>CO5: Design parallel algorithms with MPI and OpenMP</p>
<p><b>Question paper pattern:</b></p> <ul style="list-style-type: none"> <li>• <b>SEE</b> will be conducted for 100 marks.</li> <li>• Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>• <b>CIE</b> will be announced prior to the commencement of the course.</li> <li>• 25 marks for test. Average of three tests will be taken.</li> <li>• 25 marks for Flexible Assessment Method.</li> </ul>



**Textbooks:**

1. Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest, and Clifford Stein, Introduction to Algorithms, MIT Press, 3rd Edition, 2009.
2. Michael T. Goodrich and Roberto Tamassia, Algorithm Design Foundations, Analysis, and Internet Examples, John Wiley & Sons, Inc., 2nd Edition, 2009.
3. Peter S Pacheco and Matthew Malensek An introduction to parallel programming, Second Edition, Morgan Kaufmann Publishers, 2021.
4. Grama, Ananth, Anshul Gupta, George Karypis, and Vipin Kumar. Principles of parallel algorithm design. Introduction to Parallel Computing, 2nd ed. Addison Wesley, Harlow (2003).

**References:**

1. Dave and Dave, Design and Analysis of Algorithms, Pearson Education.
2. A.V. Aho, J.E. Hopcroft, Design & Analysis of Computer Algorithms, 2nd Edition, PHI.

**Web Resources:**

1. "Algorithms Specialization." Coursera, offered by Stanford University, <https://www.coursera.org/specializations/algorithms>. Accessed 28 Aug. 2024.
2. "Advanced Algorithms and Complexity." Coursera, offered by University of California, San Diego, <https://www.coursera.org/learn/advanced-algorithms>. Accessed 28 Aug. 2024.



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**

Choice Based Credit System (CBCS)

**SEMESTER – I****Artificial Intelligence (3:0:0) 3**

(Effective from the academic year 2024-25)

Course Code	24MCS13	CIE Marks	50
Teaching Hours/Week (L: T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3

**Course Objectives:** This course will enable students to:

Apply the basic principles, models, and algorithms of AI

Recognize, model, and solve problems in the analysis and design of information systems.

Explore structures and algorithms of a selection of techniques related to searching, reasoning, machine learning, and language processing.

Implement AI models using industry-standard tools and frameworks.

**Preamble:** Studying Artificial Intelligence opens doors to a realm where human ingenuity intersects with cutting-edge technology. This field delves into the creation of intelligent systems that can perceive, reason, and learn, revolutionizing how we interact with machines and data. Its significance spans industries, from healthcare to finance, driving innovation and efficiency. As AI continues to advance, understanding its principles and applications becomes crucial for shaping the future of technology and society. Pursuing this field promises a journey of discovery, innovation, and limitless possibilities.

**Module – 1**

**Intelligent agents:** Introduction, How agents should act, mapping from percept sequences to actions, Agents and Environments, the concept of Rationality, The Nature of Environments, Rational Agent, Structure of intelligent agents: Agent programs Simple reflex agents, model-based, goal-based agents, utility-based agents and learning agents, behavior and environment in which a particular agent operates, properties of agent.

(8 Hours)

**Module – 2**

**Problem-Solving and Agents:** Uniform Cost Search, Best First Search, Hill Climbing, Simulated Annealing, Problem Solving Agents, Software Agents- Concepts, Definition and Characteristics, Designing Agents as if People Mattered, Agents from Direct Manipulation to Delegation, Agents for Information Gathering

(7 Hours)

**Module – 3**

**Knowledge Representation:** Representations and Mappings, Approaches to Knowledge Representation, Issues in Knowledge Representation, Ontologies and Ontological Engineering Using Predicate Logic: Representing Simple Facts in Logic, Representing Instance and ISA Relationships, Computable Functions and Predicates, Forward Chaining, Parse Tree Representation of Knowledge

(9 Hours)



<p style="text-align: center;"><b>Module – 4</b></p>
<p><b>Uncertain Knowledge and Reasoning:</b> Quantifying Uncertainty: Acting under Uncertainty, Bayes’ Rule and Its Use. Probabilistic Reasoning: Representing Knowledge in an Uncertain Domain, The Semantics of Bayesian Networks, Efficient Representation of Conditional Distributions. Making Simple Decisions: Combining Beliefs and Desires under Uncertainty, The basis of Utility Theory.</p> <p style="text-align: right;">(8 Hours)</p>
<p style="text-align: center;"><b>Module – 5</b></p>
<p><b>Expert Systems and Knowledge Acquisition:</b> Representing and Using Domain Knowledge, Expert system Shells, Knowledge Acquisition. <b>Genetic Algorithms: Copying Natures Approaches:</b> A peek into Biological World, Significance of Genetic Operators, Termination Parameter</p> <p><b>Case Studies:</b> KAoS Open Agent Architecture, Real Time Case Studies on Semantic Artificial Intelligence, eXplainable Intelligence</p> <p style="text-align: right;">(8 Hours)</p>
<p><b>Course Outcomes:</b> The students will be able to:</p> <p>CO1: Illustrate basic principles and applications of Artificial Intelligence.</p> <p>CO2: Apply the different search algorithms for problem solving.</p> <p>CO3: Analyze the knowledge representation and reasoning with different decision-making theories.</p> <p>CO4: Apply Artificial Intelligence techniques for real solving Real world problems.</p>
<p><b>Question paper pattern:</b></p> <ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> <li>• Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub- questions.</li> <li>• CIE will be announced prior to the commencement of the course.</li> <li>• 25 marks for the test. Average of three tests will be taken.</li> <li>• 25 marks for Flexible Assessment Method.</li> </ul>
<p><b>Textbooks:</b></p> <ol style="list-style-type: none"> <li>1. Kevin Knight, Elaine Rich and B. Nair, Artificial Intelligence, Third Edition, 2017.</li> <li>2. Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach, Fourt Edition, 2020.</li> <li>3. Jeffrey M Bradshaw, An introduction to software agents, Software agents 4 (2012): 3-46.</li> </ol> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Flasiński M, Introduction to Artificial Intelligence, SPRINGER 2017.</li> <li>2. Elaine Rich and Kevin Knight, “Artificial Intelligence”, 3rd Edition, Tata McGraw-Hill, 2003</li> </ol> <p><b>Web Resources:</b></p> <ol style="list-style-type: none"> <li>1. AI Foundations for Everyone by IBM: IBM. “AI Foundations for Everyone.” Coursera, <a href="http://www.coursera.org/learn/ai-foundations-for-everyone">www.coursera.org/learn/ai-foundations-for-everyone</a>.</li> <li>2. Deep Learning Specialization by Andrew Ng (DeepLearning.AI): DeepLearning.AI. “Deep Learning Specialization.” Coursera, <a href="http://www.coursera.org/specializations/deep-learning">www.coursera.org/specializations/deep-learning</a>.</li> <li>3. Artificial Intelligence: Principles and Techniques by Stanford University: Stanford University. “Artificial Intelligence: Principles and Techniques.” Coursera, <a href="http://www.coursera.org/learn/artificial-intelligence">www.coursera.org/learn/artificial-intelligence</a>.</li> </ol>



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**

Choice Based Credit System (CBCS)

**SEMESTER – I****Fundamentals of Data Science (3:0:0) 3**

(Effective from the academic year 2024-25)

Course Code	24MCS14	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3

**Course Objectives:** This course will enable students to:

1. Understand the foundational aspects of data science and the role of a data scientist in the analytics process.
2. Explore the mathematical concepts for Data Science.
3. Apply concepts of linear algebra and statistical models for data analytics.
4. Develop skills for interpretation of types of data Visualization techniques and Model Evaluations.
5. Explore Linear Algebra concepts and Big Data Algorithmics operations.

**Preamble:** In today's data-driven world, the field of data science has become a pivotal force in shaping decisions and strategies across various sectors. At its core, data science involves harnessing vast amounts of data to extract meaningful insights and drive informed decisions.

**Module – 1**

**Introduction To Data Science:** Definition, Big Data and Data Science Hype, Datafication , Data Science Profile, Meta-Definition, Data Scientist, Statistical Inference, Populations and Samples, Populations and Samples of Big Data, Big Data Can Mean Big Assumptions, Modeling, Philosophy of Exploratory Data Analysis, The Data Science Process , A Data Scientist's Role in this Process  
Case Study: RealDirect.

(8 hours)

**Module – 2**

**Mathematical Preliminaries:** Probability, Descriptive Statistics, Correlation Analysis. **Data Munging:** Properties of Data, Languages for Data Science, Collecting Data, Cleaning Data, Crowdsourcing.

(8 hours)

**Module – 3**

**Scores and Rankings:** Developing Scoring Systems, Z-scores and Normalization, Advanced Ranking Techniques. **Statistical Analysis:** Sampling from Distributions, Statistical Distributions, Statistical Significance, Permutation Tests and P-values.

(8 hours)

**Module – 4**

**Visualizing Data:** Exploratory Data Analysis, Developing a Visualization Aesthetic, Chart Types, Great Visualizations. **Mathematical Models:** Philosophies of Modeling, A Taxonomy of Models, Baseline Models, Evaluating Models, Evaluation Environment. **Linear Algebra:** The Power of Linear Algebra, Visualizing Matrix Operations, Factoring Matrices, Eigenvalues and Eigenvectors, Eigenvalue Decomposition.

(9 hours)



### Module – 5

**Big Data: Achieving Scale:** What is Big Data?, Algorithmic for Big Data, Filtering and Sampling, Parallelism, MapReduce. **Big Data Programming models:** Introduction, Distributed File systems Case Study:HDFS/GFS, MapReduce Programming Model, Case Study: Hbase/BigTable, Matrixoperations.

(7 hours)

**Course outcomes:** The students will be able to

**CO1:** Design and implement innovative solutions by synthesizing various data science techniques to address complex, multidisciplinary problems.

**CO2:** Critically analyze real-world problems to identify and formulate them as data science problems, considering the appropriate methods and techniques for analysis.

**CO3:** Build, and prepare data for use with a variety of statistical methods and models

**CO4:** Analyze Data using various Visualization techniques.

**CO5:** Apply Linear Algebra operations and Big Data Algorithmic in data analytics.

#### Question paper pattern:

1. SEE will be conducted for 100 marks.
2. Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
3. CIE will be announced prior to the commencement of the course.
4. 25 marks for test. Average of three tests will be taken.
5. 25 marks for Flexible Assessment Method.

#### Textbooks:

1. Steven S. Skiena, “The Data Science Design Manual”, Springer 2017.
2. Rachel Schutt & O’neil, “Doing Data Science”, Straight Talk from The Frontline O’REILLY, ISBN:978-1-449-35865-5, 1st edition, October 2013.
3. “Hadoop: The Definitive Guide, Tom White”, 4th Edition, O’Reilly,2015

#### References:

1. Joel Grus,” Data Science from Scratch” First Edition, April 2015
2. Gareth James, Daniela Witten, Trevor Hastie, Robert Tibshirani , “An Introduction to Statistical Learning-with Applications in R“, 2013
3. Jure Leskovek, Anand Rajaraman and Jeffrey Ullman. Mining of Massive Datasets. v2.1, Cambridge University Press. 2 edition (30 September 2014)
4. R Programming for Data Science, Roger D. Peng, LeanPub, 2015.

#### Web Resources:

- “Data science for engineers” <https://nptel.ac.in/noc/courses/noc20/SEM1/noc20-cs28/>
- “ Python for Data Science”<https://archive.nptel.ac.in/noc/courses/noc22/SEM1/noc22-cs32/>



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> Choice Based Credit System (CBCS) <b>SEMESTER – I</b>			
<b>Cryptography and Network Security (2:2:0) 3</b> (Effective from the academic year 2024-25)			
Course Code	24MCS15	CIE Marks	50
Teaching Hours/Week (L: T:P)	2:2:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<b>Course Objectives:</b> This course will enable students to: <ol style="list-style-type: none"> <li>1. Explain standard algorithms used to provide confidentiality, integrity and authenticity.</li> <li>2. Distinguish key distribution and management schemes.</li> <li>3. Apply encryption techniques to secure data in transit across data networks</li> <li>4. Implement security applications in the field of Information technology.</li> </ol> <p><b>Preamble:</b> Embarking on the study of "Advanced Cryptography" delves into the intricate world of securing digital communication and information. This field explores advanced cryptographic algorithms and protocols, essential for safeguarding sensitive data in an increasingly interconnected world. Its significance lies in thwarting cyber threats and ensuring privacy and integrity in digital transactions and communications. As cybersecurity concerns escalate, expertise in advanced cryptography becomes pivotal for protecting critical infrastructure and preserving digital trust. Pursuing this specialization promises a deep dive into the forefront of cryptographic techniques, offering opportunities to innovate and defend against evolving cyber threats.</p>			
<b>Module – 1</b>			
<b>Computer and Network Security:</b> Computer Security Concepts, The OSI Security Architecture, Security Attacks, Security Services, Security Mechanisms, Fundamental Security Design Principles, Attack Surfaces and Attack Trees, A Model for Network Security, and Standards. <b>Symmetric Ciphers, Classical encryption techniques:</b> Symmetric Cipher Model, Substitution Techniques, Transposition Techniques, Rotor Machines, Stenography. (Chapter 1 , 2 & 3) (8 Hours)			
<b>Module – 2</b>			
<b>Block Ciphers and the Data Encryption Standard:</b> Traditional Block Cipher Structure, The Data Encryption Standard, A DES Example, The Strength of DES, Block cipher design principles and modes of operation. <b>Advanced Encryption Standard:</b> Finite Field Arithmetic, AES Structure, AES Transformation Functions, AES Key Expansion, An AES Example and AES Implementation. <b>Asymmetric Ciphers: Public-Key Cryptography and RSA:</b> Principles of Public-Key Cryptosystems, The RSA Algorithm and Diffie-Hellman Key Exchange, Elliptic Curve Arithmetic, Elliptic Curve Cryptography. (Topics from Chapter 4, 6, 9 & 10) (8 Hours)			
<b>Module – 3</b>			
<b>Cryptographic Data Integrity Algorithms</b> <b>Cryptographic Hash Functions :</b> Applications of Cryptographic Hash Functions Two Simple Hash Functions, Requirements and Security, Hash Functions Based on Cipher Block Chaining, Secure Hash Algorithm (SHA) , & SHA-3. <b>Message Authentication Codes:</b> Message Authentication Requirements, Message Authentication			



<p>Functions, Requirements for Message Authentication Codes, Security of MACs, MACs Based on Hash Functions: HMAC.</p> <p><b>Digital Signatures:</b> Digital Signatures, Elgamal Digital Signature Scheme, Schnorr Digital Signature Scheme.</p> <p>(Topics from Chapter 11, 12, &amp; 13) (8 Hours)</p>
<b>Module – 4</b>
<p><b>Mutual Trust</b></p> <p><b>Key Management and Distribution:</b> Symmetric Key Distribution Using Symmetric Encryption, Symmetric Key Distribution Using Asymmetric Encryption, Distribution of Public Keys, X.509 Certificates, public-Key Infrastructure.</p> <p><b>User Authentication:</b> Remote User-Authentication Principles, Remote User-authentication Using Symmetric Encryption, Kerberos, Remote User-Authentication Using Asymmetric Encryption.</p> <p><b>Network Access Control and Cloud Security :</b> Network Access Control, Extensible Authentication Protocol, IEEE 802.1X Port-Based Network Access Control, Cloud Computing , Cloud Security Risks and Countermeasures , Data Protection in the Cloud, Cloud Security as a Service, Addressing Cloud Computing Security Concerns.</p> <p>(Topics from Chapter 14, 15, &amp; 16) (8 Hours)</p>
<b>Module – 5</b>
<p><b>Transport Layer Security:</b> HTTPS, Secure Shell (SSH), Wireless Security, Mobile Device Security, IEEE 802.11 Wireless LAN Overview, IEEE 802.11i Wireless LAN Security.</p> <p><b>Electronic Mail Security:</b> internet Mail Architecture, Email Formats, Email Threats and Comprehensive Email Security , S/MIME, Pretty Good Privacy, DNSSEC, DNS-Based Authentication of Named Entities.</p> <p><b>IP Security Overview:</b> IP Security Policy, Encapsulating Security Payload, Combining Security Associations, Internet Key Exchange, Cryptographic Suite.</p> <p><b>Recap/Summary of the course.</b></p> <p>(Topics from Chapter 17, 18, &amp; 19) (8 Hours)</p>
<p><b>Course Outcomes:</b> The students will be able to:</p> <p>CO1: Apply the OSI security architecture, number theory and cipher techniques for the given problem.</p> <p>CO2: Compare the performance of various cryptographic data integrity techniques for the identified problem.</p> <p>CO3: Analyze the vulnerabilities in any computing system and design a cryptographic solution for the given problem/ case study</p> <p>CO4: Examine the working of the techniques used for Mutual trust and security on internet and compare their performance.</p>
<p><b>Question paper pattern:</b></p> <ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> <li>• Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>• CIE will be announced prior to the commencement of the course.</li> <li>• 25 marks for test. Average of three tests will be taken.</li> <li>• 25 marks for Flexible Assessment Method.</li> </ul>



**Textbooks:**

1. William Stallings, Cryptography and Network Security Principles and Practice, 7 th edition, Pearson, 2019.

**References:**

1. Damien Vergnaud and Michel Abdalla, Applied Cryptography and Network Security, 7th International Conference, ACNS 2009, Paris-Rocquencourt, France, June 2-5, 2009, Proceedings.
2. B. Schneier, "Applied Cryptography: Protocols, Algorithms, and Source Code in C", 2<sup>nd</sup> Edition, John Wiley & Sons, 1995.
3. Mihir Bellare and Phillip Rogaway, "Introduction to Modern Cryptography", 2005.
4. Alfred J. Menezes, Paul C. van Oorschot and Scott A. Vanstone, "Handbook of Applied Cryptography" CRC Press.
5. Neal Koblitz, A Course in Number Theory and Cryptology, Springer 1987.

**Web Resources:**

1. "Cryptography" by Stanford University: Stanford University. "Cryptography." Coursera, [www.coursera.org/learn/crypto](http://www.coursera.org/learn/crypto).
2. "Applied Cryptography" by the University of Colorado System: University of Colorado System. "Applied Cryptography." Coursera, [www.coursera.org/learn/applied-cryptography](http://www.coursera.org/learn/applied-cryptography).
3. "Introduction to Cryptography" by the University of London: University of London. "Introduction to Cryptography." Coursera, [www.coursera.org/learn/crypto-introduction](http://www.coursera.org/learn/crypto-introduction).



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**

Choice Based Credit System

(CBCS) SEMESTER – I

**Artificial Intelligence Laboratory (0:1:2) 2**

(Effective from the academic year 2024-25)

Course Code	24MCSL16	CIE Marks	50
Teaching Hours/Week (L: T:P)	0:1:2	SEE Marks	50
Total Number of Contact Hours	30	Exam Hours	2

**Course Objectives:**

This course will enable students to:

1. To enable learners to implement AI algorithms using various programming languages and tools, emphasizing practical applications in areas such as search, optimization, and decision-making.
2. Implement AI search algorithms.
3. Develop the ability to apply AI methodologies to solve real-world problems in domains.

**Preamble:** This course offers an in-depth study of essential AI techniques, focusing on search algorithms, game-playing strategies, and optimization methods. Students will learn to implement algorithms such as DFS, BFS, and A\*, explore game strategies like Minimax and Monte Carlo Tree Search, and apply heuristic methods like Hill Climbing and Simulated Annealing. Additionally, the course covers logical reasoning with First-Order Predicate Logic and resolution principles, providing a solid foundation for solving complex AI problems.

**Part A- Tutorial**

**Fundamentals of AI:** Definition and goals of AI, History and applications of AI Types of AI (Narrow AI, General AI, Strong AI).

**Search Algorithms in AI:** Uniform Cost Search, Informed Search Strategies (Best First Search), Optimization Search Strategies (Hill Climbing, Simulated Annealing).

**Heuristic Search and Problem Solving:** Concept of Heuristics, Heuristic Search Strategies, Solving Constraint Satisfaction Problems (e.g., N-Queens).

**Logical Reasoning and Knowledge Representation:** First-Order Predicate Logic (FOPL), Principle, Forward Chaining. Ontologies and their Concepts for Knowledge Representation, Web Protege.

**PART-B: Experiments**

1. Implement Best First Search Algorithm to find the shortest path in a city.
2. Implement Uniform Cost Search Algorithm for Finding the Shortest Path.
3. Implement the Hill Climbing Algorithm for Solving the N-Queens Problem.
4. Implement the Simulated Annealing Algorithm for Optimization.
5. Create a simple ontology representing medical conditions, symptoms, and treatments using Protégé or Web Protégé as a Tool of Choice. Introduce data properties to capture more detailed information. Develop a more complex hierarchy and explore inheritance. Introduce SWRL (Semantic Web Rule Language) to define rules for automatic inference.
6. Create a simple ontology representing key concepts in an e-commerce system, including products, customers, orders, and payments. Introduce data properties to capture more detailed information about products, customers, and orders. Develop a more complex hierarchy and explore inheritance within the e-commerce domain. Align your e-commerce ontology with an existing standard ontology (e.g., GoodRelations - an ontology for e-commerce).

**PROJECT**



Making use of the concepts learnt in Artificial Intelligence, develop an expert system for any prospective domain of your choice. The project must encompass Knowledge Representation, Inference Rules and Inferencing Engine, Decision Making, and Optimization if necessary.

**Course Outcomes:** The students will be able to:

CO1: Demonstrate the ability to solve practical problems using different AI search algorithms.

CO2: Create AI-driven game strategies for various board games.

CO3: Apply heuristic and optimization methods to effectively tackle complex computational problems.

CO4: Implement logical reasoning techniques to represent knowledge in AI systems using suitable tools.

**Text Books**

1. Stuart J. Russell and Peter Norvig, “Artificial Intelligence – A Modern Approach”, 4th Edition, Pearson Education, 2021.
2. Saroj Kaushik, “Artificial Intelligence”, 2nd Edition, Cengage Learning India Pvt. Ltd. 2023

**Web Resources**

1. [https://onlinecourses.nptel.ac.in/noc22\\_cs56/preview](https://onlinecourses.nptel.ac.in/noc22_cs56/preview)
2. "AI For Everyone." Coursera, offered by Andrew Ng, <https://www.coursera.org/learn/ai-for-everyone>. Accessed 28 Aug. 2024.



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**

Choice Based Credit System (CBCS)

SEMESTER – I

**No SQL Database Laboratory (0:1:2) 2**

(Effective from the academic year 2024-25)

Course Code	24MCSL17	CIE Marks	50
Teaching Hours/Week (L: T:P)	0:1:2	SEE Marks	50
Total Number of Contact Hours	30	Exam Hours	2

**Course Objectives:** This course will enable students to:

1. Understand various NoSQL database types and their applications.
2. Explore various concepts in NoSQL database technologies to develop advanced data models.
3. Apply NoSQL solutions to solve complex data storage and retrieval challenges.

**Preamble:** NoSQL databases have become essential for handling large-scale, distributed, and unstructured data in modern applications. This lab provides hands-on experience with various NoSQL databases, including key-value stores, document stores, column-family stores, and graph databases. Students will learn to design, implement, and manage NoSQL databases, focusing on scalability, performance, and data modeling. The lab emphasizes practical skills in solving real-world data storage and retrieval challenges across different domains such as e-commerce, social media, IoT, and big data analytics. By the end of the lab, students will be well-prepared to utilize NoSQL databases effectively in their future projects and professional roles.

**Part A- Tutorial**

**Introduction to NoSQL Databases:** Understand what NoSQL databases are and how they differ from traditional SQL databases. Types of NoSQL databases: document stores, key-value stores, column-family stores, and graph databases.

**Data Models and Schema Design:** different data models used in NoSQL databases. Basic schema design principles for document, key-value, column-family, and graph databases.

**CRUD Operations:** Basic CRUD operations (Create, Read, Update, Delete) in NoSQL databases. NoSQL database-specific commands for these operations.

**Query Languages and APIs:** Get acquainted with the query languages and APIs of various NoSQL databases (e.g., MongoDB Query Language, Redis commands, Cassandra Query Language (CQL), Cypher for Neo4j).

**Data Storage and Retrieval:** stored and retrieved in NoSQL databases. Understand the basics of data indexing and retrieval techniques. **Scaling and Performance:** Understand the concepts of scalability and performance in NoSQL databases. Learn about sharding, replication, and partitioning.



PART-B: Experiments	
1	Create and query a simple database using MongoDB.
2	Implement CRUD operations in MongoDB using a programming language (e.g., Python).
3	Perform aggregation operations in MongoDB.
4	Perform map-reduce queries in MongoDB.
5	Design a schema for a MongoDB database.
6	Implement indexing in MongoDB to optimize query performance.
7	Set up a replica set in MongoDB for high availability.
8	Use MongoDB Atlas to deploy a cloud-based MongoDB cluster.
9	Perform text search operations in MongoDB.
10	Implement transactions in MongoDB for multi-document operations.
<p><b>Course Outcomes:</b> The students will be able to:</p> <p>CO1: Evaluate different NoSQL database technologies determining the most suitable choice for specific real-world scenarios.</p> <p>CO2: Design complex, scalable NoSQL database architectures for applications requiring high availability, horizontal scaling, and distributed data storage.</p> <p>CO3: Develop advanced data models tailored to NoSQL databases, optimizing for performance, consistency, and scalability across various application domains.</p>	
<p><b>Text Books:</b></p> <ol style="list-style-type: none"> <li>Sadalage, P. &amp; Fowler, NoSQL Distilled: A Brief Guide to the Emerging World of Polyglot Persistence, Wiley Publications, 1st Edition, 2019.</li> <li>MongoDB: The Definitive Guide- Powerful and Scalable Data Storage Third Edition 2020</li> </ol> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>Strauch, Christoph. NoSQL Databases: A Step-by-Step Guide for Beginners. Springer, 2018.</li> <li>Sadalage, Patrick, and Martin Fowler. NoSQL Distilled: A Brief Guide to the Emerging World of Polyglot Persistence. Addison-Wesley, 2012.</li> <li>Harrison, C.J. Seven Databases in Seven Weeks: A Guide to Modern Databases and the NoSQL Movement. Pragmatic Bookshelf, 2012.</li> <li>Robinson, Ian, Jim Webber, and Emil Eifrem. Graph Databases: New Opportunities for Connected Data. O'Reilly Media, 2015.</li> </ol> <p><b>Web Resources:</b></p> <ol style="list-style-type: none"> <li>"Databases and SQL for Data Science with Python." Coursera, offered by IBM, <a href="https://www.coursera.org/learn/sql-data-science">https://www.coursera.org/learn/sql-data-science</a>. Accessed 28 Aug. 2024.</li> <li>"NoSQL Database Systems." Coursera, offered by University of California, San Diego, <a href="https://www.coursera.org/learn/nosql-database-systems">https://www.coursera.org/learn/nosql-database-systems</a>. Accessed 28 Aug. 2024.</li> <li>"Introduction to MongoDB." Coursera, offered by MongoDB University, <a href="https://www.coursera.org/learn/introduction-to-mongodb">https://www.coursera.org/learn/introduction-to-mongodb</a>. Accessed 28 Aug. 2024.</li> </ol>	



## **SEMESTER – II**



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> Choice Based Credit System (CBCS) SEMESTER – II			
<b>Machine Learning (3:0:2) 4</b> (Effective from the academic year 2024-25)			
Course Code	24MCS21	CIE Marks	50
Teaching Hours/Week (L: T:P)	3:0:2	SEE Marks	50
Total Number of Contact Hours	50	Exam Hours	3
<p><b>Course Objectives:</b> This course will enable students to:</p> <ol style="list-style-type: none"> <li>1. Master foundational machine learning concepts including algorithms, overfitting, underfitting, and hyperparameter tuning, preparing for advanced applications.</li> <li>2. Develop proficiency in designing and training deep feedforward networks, understanding regularization techniques, and implementing back-propagation for efficient learning.</li> <li>3. Acquire expertise in convolutional neural networks for image analysis and recognition tasks, utilizing efficient convolution algorithms and understanding the neuroscientific basis of their design.</li> <li>4. Explore practical methodologies for model evaluation, hyperparameter selection, and debugging strategies, enabling deployment in real-world applications such as computer vision and speech recognition.</li> </ol> <p><b>Preamble:</b> Machine Learning helps in accurately predicting or classifying outcomes for new data points by learning patterns from historical data. Machine Learning (ML) is a subset of artificial intelligence that enables computers to learn and make decisions or predictions based on data. Unlike traditional programming, where explicit instructions are provided, ML algorithms identify patterns and relationships within large datasets to improve their performance over time without being explicitly programmed for specific tasks. Data scientists can work with machine learning with equal ease. Data science allows data collected for other purposes to be applied to model problems related to various domains. The most popular programming languages among data scientists are open source tools that include or support pre-built statistical and machine learning capabilities. Machine learning is expanding across all fields such as banking and finance, information technology, media entertainment, gaming etc.</p>			
<b>Module – 1</b>			
<p><b>Machine Learning Basics:</b> Learning Algorithms, Capacity, Overfitting and Underfitting, Hyper parameters and Validation Sets, Estimators, Bias and Variance, Maximum Likelihood Estimation, Bayesian Statistics, Supervised Learning Algorithms, Unsupervised Learning Algorithms, Stochastic Gradient Descent, Building a Machine Learning Algorithm, Challenges Motivating Deep Learning</p> <p style="text-align: right;">(10 Hours)</p>			



<b>Module – 2</b>
<p><b>Deep Feedforward Networks:</b> Example: Learning XOR, Gradient-Based Learning, Hidden Units, Architecture Design, Back-Propagation and Other Differentiation Algorithms.</p> <p><b>Regularization for Deep Learning:</b> Parameter Norm Penalties, Norm Penalties as Constrained Optimization, Regularization and Under-Constrained Problems, Dataset Augmentation, Noise Robustness, Semi-Supervised Learning, Multi-Task Learning, Early Stopping, Parameter Tying and Parameter Sharing, Sparse Representations, Bagging and Other Ensemble Methods Dropout, Adversarial Training, Tangent Distance, Tangent Prop, and Manifold Tangent Classifier.</p> <p>(10 Hours)</p>
<b>Module – 3</b>
<p><b>Convolutional Networks:</b> The Convolution Operation, Motivation, Pooling, Convolution and Pooling as an Infinitely Strong Prior, Variants of the Basic Convolution Function, Structured Outputs, Data Types, Efficient Convolution Algorithms, Random or Unsupervised Features, The Neuroscientific Basis for Convolutional Networks, Convolutional Networks and the History of Deep Learning.</p> <p>(10 Hours)</p>
<b>Module – 4</b>
<p><b>Sequence Modeling:</b> Recurrent and Recursive Nets, Unfolding Computational Graphs, Recurrent Neural Networks, Bidirectional RNNs, Encoder-Decoder Sequence-to-Sequence Architectures, Deep Recurrent Networks, Recursive Neural Networks, The Challenge of Long-Term Dependencies, Echo State Networks, Leaky Units and Other Strategies for Multiple Time Scales, The Long Short-Term Memory and Other Gated RNNs, Optimization for Long-Term Dependencies, Explicit Memory.</p> <p>(10 Hours)</p>
<b>Module – 5</b>
<p><b>Practical Methodology:</b> Performance Metrics, Default Baseline Models, Determining Whether to Gather More Data, Selecting Hyperparameters, Debugging Strategies, Example: Multi-Digit Number Recognition. <b>Applications:</b> Large-Scale Deep Learning, Computer Vision, Speech Recognition, Natural Language Processing, Other Applications.</p> <p>(10 Hours)</p>
<p><b>Machine Learning Laboratory:</b></p> <p><b>Part A: Exercises</b></p> <ol style="list-style-type: none"> <li>1. Demonstrate the Principal Component Analysis for Dimensionality Reduction.</li> <li>2. Design and Develop the AdaBoost classifier from scratch using Python.</li> <li>3. Implement the concept of Decision Tree Learning on a suitable dataset of your choice.</li> <li>4. Demonstrate the concept of Bagging using Random Forests for a dataset of your choice.</li> <li>5. Demonstrate the concept of Logistic Regression for classification on a suitable dataset.</li> </ol>



**Part B: Project**

Implement a machine learning project to address a specific problem using a provided dataset. The objective of the project is to develop a model that can make accurate predictions or classifications based on the data and evaluate its performance. The deliverables must include a comprehensive report documenting process and findings, Code files for your implementation and visualizations and results of your model evaluation.

**Course Outcomes:** The students will be able to:

- CO1: Apply foundational machine learning principles to analyze and solve real-world problems, demonstrating understanding through algorithm selection and hyperparameter tuning.
- CO2: Design deep feedforward networks proficiently, demonstrating knowledge of regularization techniques and back-propagation for efficient learning.
- CO3: Analyze machine learning algorithms to understand their underlying principles, strengths, and weaknesses.
- CO4: Design advanced machine learning models and architectures tailored to specific problems and datasets. Utilize frameworks and tools to build and train these models.

**Question paper pattern:**

- SEE will be conducted for 100 marks.
- Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
- CIE will be announced prior to the commencement of the course.
- 25 marks for test. Average of three tests will be taken.
- 25 marks for Flexible Assessment Method.

**Textbooks:**

1. Ian Goodfellow, Yoshua Bengio, and Aaron Courville. Deep learning. MIT press, 2016.
2. Alpaydin, Ethem. Introduction to machine learning. MIT press, 2020.

**References:**

1. Kevin P. Murphy, "Machine Learning: A Probabilistic Perspective", MIT Press, 2012.
2. References
3. S. Raschka and V. Mirjalil, Python Machine Learning, 1 st ed, Packt Publishing, 2019.
4. C. M. Bishop, Pattern Recognition and Machine Learning, 1st ed, Springer, 2006.
5. R. O. Duda, P. E. Hart and D. G. Stork, Pattern Classification, 2nd ed, Wiley, 2000.

**Web Resources:**

1. Machine Learning with Python. Coursera, IBM, [www.coursera.org/learn/machine-learning-with-python](https://www.coursera.org/learn/machine-learning-with-python). Accessed 28 Aug. 2024.
2. Introduction to Machine Learning. Coursera, Duke University, [www.coursera.org/learn/intro-to-machine-learning](https://www.coursera.org/learn/intro-to-machine-learning). Accessed 28 Aug. 2024.



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**

Choice Based Credit System (CBCS)

Semester – II

**Internet of Things (3:0:2) 4**

(Effective from the academic year 2024-25)

Course Code	24MCS22	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:2	SEE Marks	50
Total Number of Lecture Hours	50	Exam Hours	3

**Course objectives:** This course will enable students to:

1. Understand the fundamentals of Internet of Things.
2. Explore the working of basic IoT protocols.
3. Apply the concept of Internet of Things in the real-world scenario.
4. Build a small low-cost embedded system using Raspberry Pi/ Arduino.

**Preamble:** Internet of Things (IoT) is presently a hot technology worldwide. Government, academia, and industry are involved in different aspects of research, implementation, and business with IoT. The Internet of Things (IoT) is a course about the new paradigm of objects interacting with people, with information systems, and with other objects. Important to learn the fundamentals of this emerging technology.

**Module – 1**

**INTRODUCTION TO IoT :** What is The Internet of Things? Overview and Motivations, Examples of Applications, IPV6 Role, Areas of Development and Standardization, Scope of the Present Investigation. Internet of Things Definitions and frameworks-IoT Definitions, IoT Frameworks, Basic Nodal Capabilities. Internet of Things Application Examples-Overview, Smart Metering/Advanced Metering Infrastructure- Health/Body Area Networks, City Automation, Automotive Applications, Home Automation, Smart Cards, Tracking, Over-The-Air-Passive Surveillance/Ring of Steel, Control Application Examples, Myriad Other Applications.

(10 Hours)

**Module – 2**

Fundamental IoT Mechanism and Key Technologies-Identification of IoT Object and Services, Structural Aspects of the IoT, Key IoT Technologies. Evolving IoT Standards- Overview and Approaches, IETF IPV6 Routing Protocol for RPL Roll, Constrained Application Protocol, Representational State Transfer, ETSI M2M, Third Generation Partnership Project Service Requirements for Machine-Type Communications, CENELEC, IETF IPv6 Over Low power WPAN, Zigbee IP(ZIP), IPSO

(10 Hours)

**Module – 3**

Layer ½ Connectivity: Wireless Technologies for the IoT-WPAN Technologies for IoT/M2M, Cellular and Mobile Network Technologies for IoT/M2M. Case Studies illustrating IoT Design- Introduction, Home Automation, Cities, Environment, Agriculture, Productivity Applications.

(10 Hours)



<b>Module – 4</b>
Data Analytics for IoT – Introduction, Apache Hadoop, Using Hadoop MapReduce for Batch Data Analysis, Apache Oozie, Apache Spark, Apache Storm, Using Apache Storm for Realtime Data Analysis, Structural Health Monitoring Case Study. (10 Hours)
<b>Module – 5</b>
Building IoT with Raspberry pi/Arduino: IoT Physical Devices & Endpoints – What is IoT Device –Exemplary Devices: Raspberry Pi –About the Board - Linux on Raspberry Pi - Raspberry Pi Interfaces -Programming Raspberry Pi with Python - Other IoT Platforms. (10 Hours)
<b>List of Experiments and Mini Project</b>
<p><b>Experiments:</b></p> <ol style="list-style-type: none"> <li>1. Transmit a string using UART.</li> <li>2. Point-to-Point communication of two Motes over the radio frequency.</li> <li>3. Multi-point to single point communication of Motes over the radio frequency. LAN (Subnetting).</li> <li>4. I2C protocol study: Reading Temperature and Relative Humidity value from the sensor.</li> </ol> <p><b>Project:</b></p> <ul style="list-style-type: none"> <li>• For any problem selected in the domain of IoT.</li> <li>• Make sure that the application should use at least 3 or more sensors.</li> <li>• Indicative areas like health care can be included.</li> </ul>
<p><b>Course Outcomes:</b> The students will be able to</p> <p>CO1: Understand the concepts of Internet of Things.</p> <p>CO2: Illustrate basic framework used in IoT architecture.</p> <p>CO3: Identify functionality and usage of various protocols in IoT architecture.</p> <p>CO4: Analyze applications of IoT in real time scenarios.</p> <p>CO5: Design a portable IoT application.</p>
<p><b>Question paper pattern:</b></p> <ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> <li>• Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>• CIE will be announced prior to the commencement of the course.</li> <li>• 25 marks for the test. Average of three tests will be taken.</li> <li>• 25 marks for Flexible Assessment Method.</li> </ul>



**Textbooks:**

1. Arshdeep Bahga, Vijay Madisetti, Internet of Things: A hands-on approach, Universities Press, 2015.
2. Daniel Minoli, "Building the Internet of Things with IPv6 and MIPv6: The Evolving World of M2M Communications", Wiley, 2013.

**References:**

1. Jan Höller, Vlasios Tsiatsis, Catherine Mulligan, Stamatis, Karnouskos, Stefan Avesand. David Boyle, From Machine-to-Machine to the Internet of Things - Introduction to a New Age of Intelligence, Elsevier, 2014.
2. Olivier Hersent, David Boswarthick, Omar Elloumi, The Internet of Things – Key applications and Protocols, Wiley, 2012.

**Web Resources:**

1. University of California, Irvine. An Introduction to Programming the Internet of Things (IoT) Specialization. Coursera, [www.coursera.org/specializations/iot](http://www.coursera.org/specializations/iot). Accessed 28 Aug. 2024.
2. University System of Georgia. Cybersecurity and the Internet of Things. Coursera, [www.coursera.org/learn/iot-cybersecurity](http://www.coursera.org/learn/iot-cybersecurity). Accessed 28 Aug. 2024.



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> Choice Based Credit System (CBCS) <b>SEMESTER – II</b>			
<b>Probability, Statistics and Queuing Theory (3:0:0) 3</b> (Effective from the academic year 2024 -2025)			
Course Code	24MCS23A	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<b>Course Objectives:</b> This course will enable students to: <ol style="list-style-type: none"> <li>1. Develop analytical capability and to impart knowledge of Probability, Statistics and Queuing.</li> <li>2. Apply above concepts in Engineering and Technology.</li> <li>3. Acquire knowledge of Hypothesis testing and Queuing methods and their applications so as to enable them to apply them for solving real world problems</li> </ol>			
<b>Preamble:</b> Embarking on the study of "Probability, Statistics, and Queuing Theory" delves into the mathematical foundations that underpin decision-making and system analysis. This field explores the probabilistic models and statistical methods essential for understanding uncertainty and variability in diverse domains. Its significance extends to optimizing resource allocation, predicting system performance, and informing strategic decision-making across industries. As the backbone of modern data science and operations research, expertise in these disciplines is indispensable for tackling complex real-world problems. Pursuing this specialization promises a profound exploration into the mathematical principles that drive innovation and efficiency in a data-driven world.			
<b>Module – 1</b>			
<b>Introduction:</b> Axioms of probability, Conditional probability, Total probability, Baye's theorem, Discrete Random variable, Probability mass function, Continuous Random variable. Probability density function, Cumulative Distribution Function, and its properties, Two-dimensional Random variables, Joint pdf / cdf and their properties. <p style="text-align: right;">(8 Hours)</p>			
<b>Module – 2</b>			
<b>Probability Distributions / Discrete distributions:</b> Binomial, Poisson Geometric and Hyper-geometric distributions and their properties. Continuous distributions: Uniform, Normal, exponential distributions and their properties. <p style="text-align: right;">(8 Hours)</p>			
<b>Module – 3</b>			
<b>Random Processes:</b> Classification, Methods of description, Special classes, Average values of Random Processes, Analytical representation of Random Process, Autocorrelation Function, Cross-correlation function and their properties, Ergodicity, Poisson process, Markov Process, Markov chain. <p style="text-align: right;">(8 Hours)</p>			



Module – 4
<p><b>Testing Hypothesis:</b> Testing of Hypothesis: Formulation of Null hypothesis, critical region, level of significance, errors in testing, Tests of significance for Large and Small Samples, t- distribution, its properties and uses, F-distribution, its properties and uses, Chi-square distribution, its properties and uses, <math>\chi^2</math> – test for goodness of fit, <math>\chi^2</math> test for Independence.</p> <p style="text-align: right;">(8 Hours)</p>
Module – 5
<p><b>Symbolic Representation:</b> Symbolic Representation of a Queuing Model, Poisson Queue system, Little Law, Types of Stochastic Processes, Birth-Death Process, The M/M/1 Queuing System, The M/M/s Queuing System, The M/M/s Queuing with Finite buffers.</p> <p style="text-align: right;">(8 Hours)</p>
<p><b>Course Outcomes:</b> The students should be able to:</p> <p>CO1: Apply the use of probability functions/ models to solve problems.</p> <p>CO2: Apply discrete and continuous probability distributions techniques.</p> <p>CO3: Evaluate the impact of variability and uncertainty in stochastic systems.</p> <p>CO4: Analyze queuing theory principles to solve real-world problems.</p>
<p><b>Question paper pattern:</b></p> <ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> <li>• Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>• CIE will be announced prior to the commencement of the course.</li> <li>• 25 marks for the test. Average of three tests will be taken.</li> <li>• 25 marks for Flexible Assessment Method.</li> </ul>
<p><b>Textbook:</b></p> <ol style="list-style-type: none"> <li>1. Probability, Statistics and Queuing Theory, V. Sundarapandian, Eastern Economy Edition, PHI Learning Pvt. Ltd, 2009.</li> </ol> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Probability &amp; Statistics with Reliability, Queuing and Computer Applications, 2nd Edition by Kishor. S. Trivedi, Prentice Hall of India ,2004.</li> <li>2. Probability, Statistics and Random Processes, 1st Edition by P Kausalya, Pearson Education, 2013.</li> </ol> <p><b>Web Resources:</b></p> <ol style="list-style-type: none"> <li>1. "Probability Theory." Coursera, offered by University of London and London School of Economics, <a href="https://www.coursera.org/learn/probability-theory">https://www.coursera.org/learn/probability-theory</a>. Accessed 28 Aug. 2024.</li> <li>2. "Introduction to Probability and Data." Coursera, offered by Duke University, <a href="https://www.coursera.org/learn/probability-data">https://www.coursera.org/learn/probability-data</a>. Accessed 28 Aug. 2024.</li> <li>3. "Stochastic Processes and Queueing Theory." Coursera, offered by National Research University Higher School of Economics, <a href="https://www.coursera.org/learn/stochastic-processes-queueing-theory">https://www.coursera.org/learn/stochastic-processes-queueing-theory</a>. Accessed 28 Aug. 2024.</li> </ol>



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> Choice Based Credit System (CBCS) SEMESTER – II			
<b>Statistical Learning and Data Mining (3:0:0) 3</b> (Effective from the academic year 2024-25)			
Course Code	24MCS23B	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<p>Course Objectives: This course will enable students to:</p> <ul style="list-style-type: none"> <li>● Explore advanced statistical learning and data mining techniques.</li> <li>● Implement and evaluate sophisticated algorithms for regression, classification, clustering, and dimensionality reduction on real-world datasets.</li> <li>● Apply advanced model assessment and resampling methods to enhance model performance and reliability.</li> <li>● Utilize unsupervised learning methods to extract and interpret insights from complex data.</li> </ul> <p><b>Preamble:</b> This course delves into advanced statistical learning and data mining techniques, emphasizing complex data analysis, sophisticated model building, and predictive analytics. Students will integrate theoretical knowledge with practical applications using real-world datasets, preparing them for research or professional roles in data science and analytics.</p>			
Module – 1			
<p><b>Introduction: Foundations of Statistical Learning and Data Mining</b>  Historical Evolution and Modern Applications, Differences and Synergies between Data Mining and Statistical Learning, Supervised vs Unsupervised Learning. Generalized Linear Models (GLMs), Regularization Techniques: Ridge and Lasso Regression.</p> <p style="text-align: right;">(8 hours)</p>			
Module – 2			
<p><b>Model Assessment and Resampling Techniques:</b> Advanced Cross-Validation Techniques (e.g., K-Fold, Leave-One-Out), Metrics for Model Evaluation: AUC, Log-Loss, Confusion Matrix, Bias-Variance Tradeoff Analysis</p> <p style="text-align: right;">(8 hours)</p>			
Module – 3			
<p><b>Advanced Predictive Modeling:</b> Decision Trees and Random Forests, Gradient Boosting Machines (GBM) and XGBoost. Kernel Methods for Nonlinear Classification, Neural Networks: Introduction to Deep Learning. Regularization and Optimization in Predictive Modeling.</p> <p style="text-align: right;">(8 hours)</p>			
Module – 4			
<p><b>Data Preprocessing Techniques:</b> Handling Missing Data, Outliers, and Scaling, Feature Engineering and Selection Strategies, Association Rule Mining (e.g., Apriori, Eclat), Density Estimation and Manifold Learning.</p> <p style="text-align: right;">(8 hours)</p>			
Module – 5			
<p><b>Emerging Trends and Technologies in Data Mining:</b> Advanced Data Mining Techniques-Data Mining in Big Data. Impact of AI and ML on data mining practices and applications. Quantum computing concepts and potential implications for data mining. Automated machine learning (AutoML), federated learning, and advanced analytics-Case Studies.</p> <p style="text-align: right;">(8 hours)</p>			



**Course Outcomes:** The students will be able to

- CO1: Understand advanced statistical learning and data mining techniques, including complex regression models, classification algorithms, and ensemble methods.
- CO2: Apply sophisticated algorithms on real-world datasets and evaluate model performance using advanced assessment techniques and resampling methods.
- CO3: Analyze advanced unsupervised learning methods, such as clustering and dimensionality reduction, to derive meaningful insights from complex data.
- CO4: Examine various techniques to address complex case studies and critically assess emerging trends and future directions in data science.

**Question paper pattern:**

- SEE will be conducted for 100 marks.
- Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
- CIE will be announced prior to the commencement of the course.
- 25 marks for the test. Average of three tests will be taken.
- 25 marks for Flexible Assessment Method.

**Textbooks:**

1. James, Gareth, et al. *An Introduction to Statistical Learning*. Springer, 2021.
2. Witten, Ian H., et al. *Data Mining: Practical Machine Learning Tools and Techniques*. Morgan Kaufmann, 2016.

**References:**

1. Hastie, Trevor, et al. *The Elements of Statistical Learning*. Springer, 2009.
2. Hastie, Trevor, Robert Tibshirani, and Jerome Friedman. *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*. 2nd ed., Springer, 2009.
3. Bishop, Christopher M. *Pattern Recognition and Machine Learning*. Springer, 2006.
4. Kuhn, Max, and Kjell Johnson. *Applied Predictive Modeling*. Springer, 2013.
5. James, Gareth, Daniela Witten, Trevor Hastie, and Robert Tibshirani. *An Introduction to Statistical Learning with Applications in R*. Springer, 2013.
6. Han, Jiawei, Micheline Kamber, and Jian Pei. *Data Mining: Concepts and Techniques*. 3rd ed., Morgan Kaufmann, 2011.

**Web Resources:**

1. University of Colorado Boulder. *Data Mining Foundations and Practice Specialization*. Coursera, [www.coursera.org/specializations/data-mining](https://www.coursera.org/specializations/data-mining). Accessed 28 Aug. 2024.
2. Wesleyan University. *Machine Learning for Data Analysis*. Coursera, [www.coursera.org/learn/machine-learning-data-analysis](https://www.coursera.org/learn/machine-learning-data-analysis). Accessed 28 Aug. 2024.
3. DeepLearning.AI. *Mathematics for Machine Learning and Data Science Specialization*. Coursera, [www.coursera.org/specializations/mathematics-machine-learning-data-science](https://www.coursera.org/specializations/mathematics-machine-learning-data-science). Accessed 28 Aug. 2024.



<p align="center"><b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b>  Choice Based Credit System(CBCS)  <b>SEMESTER -II</b></p>			
<p align="center"><b>Queuing Theory in Network Communication (3:0:0) 3</b>  (Effective from the academic year 2024-25)</p>			
Course Code	24MCS23C	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<p><b>Course Objectives:</b> This course will enable students to:</p> <ol style="list-style-type: none"> <li>1. Understand the concepts of queuing theory and its applications in telecommunications.</li> <li>2. Analyze various queuing models and their performance measures.</li> <li>3. Explore advanced topics in queuing theory related to modern network architectures and traffic management.</li> <li>4. Analyze significance of advanced queuing theory in Communication Networks.</li> </ol> <p><b>Preamble:</b> This course provides a comprehensive understanding of queuing theory, focusing on its application in network traffic and telecommunications. The course includes theoretical concepts and advanced topics to equip students with the knowledge required for research and industry applications.</p>			
<b>Module – 1</b>			
<p><b>Introduction to Queuing Theory:</b> Basics of Queuing Theory: Definitions, Terminologies, Queue Characteristics: Arrival Process, Service Process, Queue Discipline, Little's Law, Applications of Queuing Theory in Network Traffic and Telecommunications</p> <p align="right">(8 hours)</p>			
<b>Module – 2</b>			
<p><b>Markov Chains:</b> The Exponential Distribution, the Poisson Process, Discrete Time Markov Chains, Continuous Time Markov Chains</p> <p align="right">(8 hours)</p>			
<b>Module – 3</b>			
<p><b>Markovian Queuing Models:</b> Queues and stochastic processes, Poisson arrival process, Birth-death Markov chains, Notations for queuing systems, Little theorem and insensitivity property, M/M/1 Queue Analysis, M/M/1/K Queue Analysis, M/M/S Queue Analysis, M/M/S/S Queue Analysis, The M/M/S/S/P Queue Analysis, The M/M/∞ Queue Analysis, Solution of Markovian Queues Directly in the z- Domain, Multi-Dimensional Erlang-B Cases, Distribution of the Queuing Delays in the FIFO Case, Erlang-B Generalization for Non-Poisson Arrivals.</p> <p align="right">(8 hours)</p>			
<b>Module – 4</b>			
<p><b>Advanced Queuing Models:</b> The M/G/1 Queuing Theory, M/G/1 System Delay Distribution, Numerical Inversion Method of the Laplace Transform of the Delay, Impact of the Service Time Distribution on M/G/1 Queue, M/G/1 Theory with State-Dependent Arrival Process, Applications of the M/G/1 Analysis to Slotted-Based Arrivals and Departures, Advanced M/G/1 Cases, Different Imbedding Options for M/G/1.</p> <p align="right">(8 hours)</p>			



## Module –5

**Network of Queues:** Traffic Rate Equations, The Little Theorem Applied to the Whole Network, Tandem Queues and the Burke Theorem, The Jackson Theorem, Traffic Matrices, Network Planning Issues, Traffic Engineering and Network Optimization. Case studies.

(8 hours)

**Course Outcomes:** The students will be able to

CO1: Comprehend the basics of queuing theory and its relevance to network traffic and telecommunications.

CO2: Analyze and model different types of queues and evaluate their performance.

CO3: Apply queuing theory models to real-world network scenarios.

CO4: Understand advanced queuing models and techniques for efficient network traffic management.

### Question paper pattern:

- **SEE** will be conducted for 100 marks.
- Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
- **CIE** will be announced prior to the commencement of the course.
- 25 marks for the test. Average of three tests will be taken.
- 25 marks for Flexible Assessment Method.

### Textbooks:

1. D. Gross, J. F. Shortle, J. M. Thompson, C. M. Harris, "Fundamentals of Queueing Theory," 5<sup>th</sup> Edition, Wiley, 2018.
2. Giovanni Giambene, "Queueing Theory and Telecommunications: Networks and Applications", Springer, N.Y., 3<sup>rd</sup> Ed, 2021.

### References:

1. L. Kleinrock, "Queueing Systems, Volume 1: Theory," Wiley, 1975.
2. Jeremiah F. Hayes, "Modeling and Analysis of Computer Communications Networks". Plenum Press.
3. H. Kobayashi, B. L. Mark, "System Modeling and Analysis: Foundations of System Performance Evaluation," Pearson.
4. R. Nelson, "Probability, Stochastic Processes, and Queueing Theory: The Mathematics of Computer Performance Modeling," Springer.
5. Kishore Trivedi, "Probability & Statistics with Reliability Queueing and Computer Science Applications", Wiley.
6. D. Bertsekas and R. Gallager, "Data Networks", Prentice Hall.
7. Haruo Akimaru and Konosuke Kawashima, "Tele traffic Theory and Applications", Springer.

### Web Resources:

1. [https://onlinecourses.nptel.ac.in/noc24\\_ee132/preview](https://onlinecourses.nptel.ac.in/noc24_ee132/preview)
2. [https://onlinecourses.nptel.ac.in/noc24\\_ma97/preview](https://onlinecourses.nptel.ac.in/noc24_ma97/preview)
3. [https://onlinecourses.nptel.ac.in/noc24\\_ee124/preview](https://onlinecourses.nptel.ac.in/noc24_ee124/preview)
4. [https://onlinecourses.nptel.ac.in/noc24\\_ee119/preview](https://onlinecourses.nptel.ac.in/noc24_ee119/preview)



**M.TECH. COMPUTER SCIENCE AND  
ENGINEERING**

Choice Based Credit System(CBCS)  
SEMESTER -II

**Graph Algorithms and Mining (3:0:0) 3**

(Effective from the academic year 2024-25)

Course Code	24MCS23D	CIE Marks	50
Teaching Hours/Week (L: T: P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3

**Course Objectives:** This course will enable students to:

1. To provide the basic concepts and important properties of graphs.
2. To learn and explore several methods on algorithms such as graph traversal, shortest paths, minimum spanning tree
3. To introduce students to the field of graph mining and its application in various domains.
4. To give the students an opportunity to obtain hands-on experience on applications of graph mining.

**Preamble:** Graph algorithms and mining focus on analyzing and extracting useful information from graph-structured data, where entities are represented as nodes and their relationships as edges. Graph algorithms, such as depth-first search, breadth-first search, shortest path, and PageRank, are used to traverse and analyze these structures, uncovering patterns like community detection, node centrality, and connectivity. Graph mining involves identifying frequent subgraphs, motifs, and anomalies within large and complex networks, such as social networks, biological networks, and communication networks. This field is essential in domains like social network analysis, bioinformatics, recommendation systems, and fraud detection, where understanding the relationships between entities is crucial.

**Module – 1**

**Introduction to Graphs:** Introduction to graphs and basic terminology, Representations of a graph, types of graphs, basic algorithms for decomposing graphs into parts, connectivity of graphs, matching on graphs.

(8 hours)

**Module – 2**

**Graph Algorithms:** Graph coloring, graphs on surface, directed graphs, Shortest path algorithms, algorithms to discover minimum spanning tree, Flows in Networks and some important flow algorithms, Searching Graphs and Related algorithms.

(8 hours)

**Module – 3**

**Graph Mining:** Motivation for Graph Mining, Applications of Graph Mining, Mining Frequent Subgraphs –Transactions, BFS/Apriori Approach (FSG and others), DFS Approach (gSpan and others), Diagonal and Greedy Approaches, Constraint-based mining and new algorithms, Mining Frequent Subgraphs, graph visualizations.

(8 hours)

**Module – 4**

**Graph Clustering:** Spectral Clustering-Community Detection Algorithms: Girvan-Newman Hierarchical Clustering: Agglomerative and Divisive Approaches-Evaluation Metrics: Modularity, Conductance, Silhouette ScoreS- Graph Embedding: Node2Vec, DeepWalk, Scalable Clustering Algorithms: Louvain Method, Infomap.

(8 hours)



## Module - 5

**Graph Classification and Knowledge Graphs:** Hierarchical Graph Classification: Handling Graphs with Hierarchical Structures- Graph Contrastive Learning: Self-Supervised Learning, Contrastive Loss for Graphs- Semantic Networks- Biological Networks: Disease Gene Prediction, Drug Interaction Networks-Knowledge Graphs: Entity Classification, Relation Prediction-Case Study using Knowledge Graphs.

(8 hours)

**Course outcomes:** The students will be able to

CO1: Apply graph algorithms to solve problems in various domains and techniques.

CO2: Analyze graph mining methods.

CO3: Solve graph-related problems.

CO4: Apply graph mining algorithms for large-scale datasets on various domains.

### Question paper pattern:

- SEE will be conducted for 100 marks.
- Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
- CIE will be announced prior to the commencement of the course.
- 25 marks for the test. Average of three tests will be taken.
- 25 marks for Flexible Assessment Method.

### Textbooks:

1. Aggarwal, Charu C., and Haixun Wang, editors. Managing and Mining Graph Data. Springer, 2010.
2. Easley, David, and Jon Kleinberg. Networks, Crowds, and Markets: Reasoning about a Highly Connected World. Cambridge University Press, 2010.
3. Hamilton, William L. Graph Representation Learning. Morgan & Claypool Publishers, 2020.
4. Fortunato, Santo, and Markos Hric. "Community Detection in Networks: A User Guide." Physics Reports, vol. 659, 2016, pp. 1-44.

### References:

1. Sarkar, Deepayan. Graph Mining: Laws, Tools, and Case Studies. Wiley, 2016.
2. Zhang, X., and H. Zhou. Graph-Based Semi-Supervised Learning. Springer, 2011.
3. Agerri, R., and M. Moens. Mining Graph Data. Wiley, 2015.
4. Barabási, Albert-László. Network Science. Cambridge UP, 2016.
5. Han, Jiawei, Micheline Kamber, and Jian Pei. Data Mining: Concepts and Techniques. Morgan Kaufmann, 2011.

### Web Resources:

1. "Graph Theory." Coursera, University of California, San Diego, <https://www.coursera.org/learn/graph-theory>.
2. "Data Mining." Coursera, University of Illinois at Urbana-Champaign, <https://www.coursera.org/learn/data-mining>.



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**

Choice Based Credit System (CBCS)

**SEMESTER – II****Cyber Security and Forensics (3:0:0) 3**

(Effective from the academic year 2024-25)

Course Code	24MCS23E	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3

**Course Objectives:** This course will enable students:

1. To interpret the concepts of cyber security, forensics and its applications in different contexts.
2. To investigate incidents and areas affected due to cybercrime.
3. To illustrate tools used in cyber security, forensic
4. To infer legal perspectives in cyber security
5. To apply the policies, security standards, and IPR issues on a cybercrime incident.

**Preamble:** The course aims to provide an overview of cyber law, security, tools, and approaches to secure resources and manage intellectual property for enhancing the competitiveness for organizations. Upon completion of this course, students should be able to accomplish the course outcomes defined. Cyber security and forensics have direct impact on the security systems, society, financial models and affecting the GDP.

**Module – 1**

**Introduction to Cybercrime:** Cybercrime Definition and Origins of the Word, Cybercrime and Information Security, Who are Cybercriminals?, Classifications of Cybercrimes, Cybercrime: The Legal Perspectives, Cybercrimes: An Indian Perspective, Cybercrime and the Indian ITA 2000, A Global Perspective on Cybercrimes, Cybercrime Era: Survival Mantra for the Netizens. Cyber offenses: How Criminals Plan Them: How Criminals Plan the Attacks, Social Engineering, Cyberstalking, Cybercafe and Cybercrimes, Botnets: The Fuel for Cybercrime, Attack Vector.

(8 Hours)

**Module – 2**

**Cybercrime:** Mobile and Wireless Devices: Introduction, Proliferation of Mobile and Wireless Devices, Trends in Mobility, Credit Card Frauds in Mobile and Wireless Computing Era, Security Challenges Posed by Mobile Devices, Registry Settings for Mobile Devices, Authentication Service Security, Attacks on Mobile/Cell Phones, Mobile Devices: Security Implications for organizations, Organizational Measures for Handling Mobile, Organizational Security Policies and Measures in Mobile Computing Era, Laptops.

(8 Hours)

**Module – 3**

**Tools and Methods Used in Cybercrime:** Introduction, Proxy Servers and Anonymizers, Phishing, Password Cracking, Keyloggers and Spywares, Virus and Worms, Trojan Horses and Backdoors, Steganography, DoS and DDoS Attacks, SQL Injection, Buffer Overflow, Attacks on Wireless Networks. Phishing and Identity Theft: Introduction, Phishing, Identity Theft (ID Theft).

(8 Hours)



#### Module – 4

**Understanding Computer Forensics:** Introduction, Historical Background of Cyberforensics, Digital Forensics Science, The Need for Computer Forensics, Cyber forensics and Digital Evidence, Forensics Analysis of E-Mail, Digital Forensics Life Cycle, Chain of Custody Concept, Network Forensics, Approaching a Computer Forensics Investigation, Setting up a Computer Forensics Laboratory: Understanding the Requirements, Computer Forensics and Steganography, Relevance of the OSI 7 Layer Model to Computer Forensics, Forensics and Social Networking Sites: The Security/Privacy Threats, Computer Forensics from Compliance Perspective, Challenges in Computer Forensics, Special Tools and Techniques, Forensics Auditing, Antiforensics.

(8 Hours)

#### Module – 5

**Introduction to Security Policies and Cyber Laws:** Need for An Information Security Policy, Information Security Standards – ISO, Introducing Various Security Policies and Their Review Process, Introduction to Indian Cyber Law, Objective and Scope of the IT Act, 2000, Intellectual Property Issues, Overview of 2008/2012 / 2013 Intellectual - Property - Related Legislation in India, Patent, Copyright, Law Related to Semiconductor Layout and Design, Software License.

(8 Hours)

**Course Outcomes:** The students will be able to:

CO1: Identify and analyze the cyber security risks due to different cybercrimes and examine them from a legal perspective.

CO2: Illustrate the use of Cyber security and of cyber-forensics tools in investigating the given cybercrime.

CO3: Analyze legal issues and socio-economic impact due to cybercrime and forensics investigation approach

CO4: Examine relevant network defense / web application tools to solve given cyber security problems/ case study.

CO5: Design the security policy for an organization in line with IT ACT 2000 and based on ISO standard.

#### Question paper pattern:

- SEE will be conducted for 100 marks.
- Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
- CIE will be announced prior to the commencement of the course.
- 25 marks for test. Average of three tests will be taken.
- 25 marks for Flexible Assessment Method.



**Textbooks:**

1. Sunit Belapure, Nina Godbole, Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives Wiley India Pvt Ltd 2013.
2. Surya Prakash Tripathi, Ritendra Goyal, Praveen Kumar Shukla, Introduction to information security and cyber laws, Dreamtech Press 2015.

**References:**

1. Thomas J. Mowbray, Cybersecurity: Managing Systems, Conducting Testing, and Investigating Intrusions John Wiley & Sons 2013.
2. James Graham, Ryan Olson, Rick Howard, Cyber Security Essentials CRC Press 2010.

**Web Resources:**

1. Cybersecurity Specialization by the University of Maryland: University of Maryland. "Cybersecurity Specialization". [www.coursera.org/specializations/cyber-security](http://www.coursera.org/specializations/cyber-security).
2. Introduction to Cyber Security Specialization by NYU: NYU. "Introduction to Cyber Security Specialization". [www.coursera.org/specializations/intro-cyber-security](http://www.coursera.org/specializations/intro-cyber-security).
3. Computer Forensics by the University of London: University of London. "Computer Forensics". [www.coursera.org/learn/computer-forensics](http://www.coursera.org/learn/computer-forensics).
4. Digital Forensics and Cyber Investigation by IBM: IBM. "Digital Forensics and Cyber Investigation". [www.coursera.org/learn/digital-forensics-cyber-](http://www.coursera.org/learn/digital-forensics-cyber-)



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Choice Based Credit System (CBCS)

**SEMESTER – II****Secure Cloud Computing (3:0:0) 3**

(Effective from the academic year 2024-25)

Course Code	24MCS23F	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	50	Exam Hours	3

**Course Objectives:** This course will enable students to:

1. Explore Cloud Computing Models and Architectures
2. Identifying Cloud Security Risks and Threats
3. Interpret Compliance and Legal Issues
4. Developing Cloud Security Policies and Procedures
5. Evaluating Cloud Security Solutions and Vendors

**Preamble:** Cloud security refers to the set of policies, technologies, and controls designed to protect data, applications, and infrastructure associated with cloud computing. As organizations increasingly rely on cloud services for storing sensitive data and running critical applications, ensuring robust cloud security has become essential. Key aspects of cloud security include data encryption, identity and access management, threat detection, and compliance with regulatory standards. With the rise of sophisticated cyber threats, cloud security measures must continuously evolve to safeguard against data breaches, unauthorized access, and other vulnerabilities that could compromise the integrity and confidentiality of cloud-based systems.

**Module – 1**

**Introduction to Cloud Computing:** Overview of Cloud Computing, Cloud Computing Models and Services, Cloud Computing Architecture, Security Challenges in the Cloud. **Cloud Security Fundamentals:** - Basic Cloud Security Concepts, Cloud Security Standards and Frameworks, Key Security Considerations for Cloud Environments.

(8 hours)

**Module – 2**

**Identity and Access Management (IAM):** IAM Concepts and Technologies, Cloud-Based IAM Solutions, Authentication and Authorization in the Cloud, Managing User Identity and Access. **Data Security and Privacy:** Data Protection Techniques, Encryption and Key Management, Privacy Laws and Regulations, Managing Sensitive Data in the Cloud.

(8 hours)

**Module – 3**

**Network Security:** Cloud Network Architecture, Network Security Controls and Technologies, Protecting Data in Transit, Managing Network Security Threats. **Compliance and Risk Management:** Regulatory Compliance in the Cloud, Risk Management Strategies, Cloud Provider Compliance and Certifications, Auditing and Reporting.

(8 hours)



<b>Module – 4</b>
<p><b>Incident Response and Forensics:</b> Incident Response Planning, Forensic Techniques and Tool, Legal and Ethical Issues in Cloud Forensics, Case Studies and Practical Considerations.</p> <p><b>Emerging Trends and Future Directions:</b> - Advances in Cloud Security Technologies, The Role of Artificial Intelligence and Machine Learning Future Challenges and Opportunities.</p> <p style="text-align: right;">(8 hours)</p>
<b>Module – 5</b>
<p><b>Case Studies and Practical Applications:</b> Case Studies of Cloud Security Incidents, Best Practices and Lessons Learned, Implementing Security Solutions in Real-World Scenarios.</p> <p style="text-align: right;">(8 hours)</p>
<p><b>Course outcomes:</b> The students will be able to</p> <p>CO1: Understand various cloud computing models (IaaS, PaaS, SaaS) and deployment types (public, private, hybrid).</p> <p>CO2: Analyze common security risks and threats in cloud environments.</p> <p>CO3: Implement effective cloud security controls, including access controls, encryption, and data protection strategies.</p> <p>CO4: Apply compliance requirements and legal considerations relevant to cloud security.</p> <p>CO5: Apply learned concepts to real-world scenarios and case studies involving cloud security.</p>
<p><b>Question paper pattern:</b></p> <ul style="list-style-type: none"> <li>● SEE will be conducted for 100 marks.</li> <li>● Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>● CIE will be announced prior to the commencement of the course.</li> <li>● 25 marks for the test. Average of three tests will be taken.</li> <li>● 25 marks for Flexible Assessment Method.</li> </ul>
<p><b>Textbooks:</b></p> <ol style="list-style-type: none"> <li>1. Ronald L. Krutz and Russell Dean Vines. Cloud Security: A Comprehensive Guide to Secure Cloud Computing. Wiley India Pvt. Ltd, 2010.</li> <li>2. Mather, Tim, et al. Cloud Security and Privacy: An Enterprise Perspective on Risks and Compliance. O'Reilly Media, 2009.</li> <li>3. Vacca, John R., editor. Cloud Computing Security: Foundations and Challenges. CRC Press, 2017.</li> </ol> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Kavis, Michael J. Architecting the Cloud: Design Decisions for Cloud Computing Success. Wiley India Pvt. Ltd, 2014.</li> <li>2. Coombs, Ted, and Justin R. Smith. Cloud Security For Dummies. John Wiley &amp; Sons, 2022.</li> </ol> <p><b>Web Resources:</b></p> <ol style="list-style-type: none"> <li>1. Diogenes, Yuri. Introduction to Cloud Security with Microsoft Azure. Coursera, Microsoft. Accessed 30 Aug. 2024.</li> <li>2. Google Cloud Training. Google Cloud Platform Security Essentials. Coursera, Google Cloud. Accessed 30 Aug. 2024.</li> </ol>



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**

Choice Based Credit System (CBCS)

**SEMESTER – II****Blockchain Technologies (3:0:0) 3**

(Effective from the academic year 2024-25)

Course Code	24MCS23G	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3

**Course Objectives:** The objective of this course is to:

1. Provide conceptual understanding of block chain technology and how it can be used in Industry 4.0
2. Explore the operations of the Blockchain technology and its consensus mechanisms
3. Demonstrate and interpret working of Ethereum
4. Analyze different case studies of Blockchain beyond crypto currency

**Preamble:** Block chain technology has the potential to revolutionize interactions between governments, businesses and citizens. Block chain drew global attention in terms of the secured deployment of various services across multiple industries. National Governance facing unique challenges in various modalities are addressed by block chain leading improvement. Block chain technology has the potential to boost GDP over the next decade.

**Module - 1**

**Introduction:** The Growth of Blockchain Technology **Distributed Systems** ,The history of Blockchain and bitcoin ,Blockchain definition, architecture, Generic Elements, Benefits, features, limitations and types of Blockchain, Consensus, CAP Theorem and Blockchain. **Symmetric Cryptography:** Introduction, Cryptographic primitives: keyless primitives, Random numbers, hash functions, Design of SHA- 256 and Symmetric cryptography, HMACs. Asymmetric key Cryptography techniques: Digital signatures, and RSA digital signature, Applications of Cryptographic hash functions.

(8 Hours)

**Module - 2**

**Decentralization:** Decentralization using Blockchain, Methods of decentralization, Routes to decentralization, Blockchain and full ecosystem decentralization, pertinent terminologies, brief on Ethereum platform for decentralization. **Consensus:** Introducing the consensus problem, The Byzantine Generals Problem, fault tolerance, State Machine Replication, FLP impossibility, Practical Byzantine Fault Tolerance. Working of Different Consensus Mechanisms- Proof of Work, Proof of Stake, Proof of Elapsed Time, Proof of Importance, Proof of Activity, Proof of Capacity, Proof of Storage, Proof of Authority. Detailed discussion on Proof of Work and Proof of stake.

(8 Hours)



Module - 3
<p><b>Introducing Bitcoin:</b> Bitcoin definition, A user's perspective <b>Blockchain</b> The genesis block, What is a Double spending problem? <b>Mining:</b> Task of the miners, mining rewards, proof of work, The mining algorithm. <b>Ethereum:</b> Blocks and Blockchain, The genesis block, The block validation mechanism, Block finalization, Gas. <b>Wallets and client software:</b> Wallets, Geth-Installation and Usage, MetaMask-Installation, creating and funding an account using MetaMask, <b>Nodes and miners.</b></p> <p>(8 Hours)</p>
Module - 4
<p><b>Ethereum Development Environment:</b> Overview, Test Networks, Components of a private network, Network ID, the genesis file, data Directory, Starting up the private network, mining on the private network, Remix IDE, MetaMask, using Metamask and Remix IDE to deploy a smart contract. <b>Development Tools and Frameworks:</b> Languages, Compilers, Tools and Libraries, Frameworks, Contract development and deployment, The Layout of Solidity source code file, The Solidity language.</p> <p>(8 Hours)</p>
Module - 5
<p><b>Use Cases / Case Studies</b></p> <p><b>IOT</b> - Architecture, Benefits of convergence. <b>Government</b> – Border control, Voting, Citizen identification (ID cards) <b>Health, Finance</b>-Insurance, Post-trade settlement, Financial crime prevention, Payments, Loans.</p> <p><b>Challenges</b>-Scalability, Privacy and Security <b>Areas to Address</b>-Regulation, Illegal Activity, privacy or transparency, Blockchain and AI.</p> <p>(8 Hours)</p>
<p><b>Course Outcomes:</b> The students will be able to:</p> <p>CO1: Summarize the fundamental components and functional aspects of the Blockchain.</p> <p>CO2: Apply the development Tool and Framework for the given problem.</p> <p>CO3: Compare among various consensus mechanisms and justify suitable mechanisms for a given problem.</p> <p>CO4: Analyze the given Use cases / case studies of the Blockchain technology.</p>
<p><b>Question paper pattern:</b></p> <ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> <li>• Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>• CIE will be announced prior to the commencement of the course.</li> <li>• 25 marks for the test. Average of three tests will be taken.</li> <li>• 25 marks for Flexible Assessment Method</li> </ul>



**Textbooks:**

1. Mastering Blockchain: A deep dive into distributed ledgers, consensus protocols, smart contracts, DApps, cryptocurrencies, Ethereum, and more, 3rd Edition, Imran Bashir, Packt Publishing, 2020, ISBN: 9781839213199

**References:**

1. Arshdeep Bahga, Vijay Madisetti, —Blockchain Applications: A Hands-On Approach, Arshdeep Bahga, Vijay Madisetti publishers 2017.

**Web Resources:**

1. [https://onlinecourses.swayam2.ac.in/aic21\\_ge01/preview](https://onlinecourses.swayam2.ac.in/aic21_ge01/preview)
2. "Blockchain Basics." Coursera, ConsenSys Academy, <https://www.coursera.org/learn/blockchain-basics>.
3. "Blockchain Revolution." Coursera, INSEAD,
4. <https://www.coursera.org/learn/blockchain-revolution>.
5. "Blockchain and Cryptocurrency Explained." Coursera, University at Buffalo, <https://www.coursera.org/learn/blockchain-cryptocurrency>.



**M.TECH. COMPUTER SCIENCE AND  
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Choice Based Credit System (CBCS)  
SEMESTER – II

**Secure Software Development (3:0:0) 3**  
(Effective from the academic year 2024 -2025)

Course Code	24MCS23H	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3

**Course Objectives:** This course will enable students to:

1. To learn the development principles and process models of secure software engineering.
2. To study the requirements, modeling, design testing and validation procedures that ensure security.
3. To apply secure software engineering principles across cross-disciplines.

**Preamble:** Secure Software Development is essential due to the growing complexity and sophistication of cyber threats, which threaten national security and economic stability. Economically, it prevents costly data breaches and builds consumer trust, supporting the growth of digital markets. Technologically, it underpins innovation by ensuring systems are resilient against attacks, enabling the safe implementation of advanced technologies like smart cities and e-governance. By fostering secure software practices, nations can enhance technological advancement, protect critical infrastructure, and promote sustainable economic growth, making it a strategic component of nation-building.

**Module - 1**

**Introduction:** What is System engineering-Systems engineering and the systems-System engineering processes- Understanding Software systems engineering-The software system engineering processes-Steps in the software development processes-Functional and non-functional requirements Verification and validation. **Engineering secure and safe systems:** Introduction-The approach-security versus safety-Four approaches to develop critical systems- The dependability approach-The safety engineering approach-The secure systems approach- The real- time systems approach Security-critical and safety-critical systems

(9 Hours)

**Module - 2**

**Architecting Secure Software Systems:** Security Requirements Analysis, Threat Modelling, Security Design Patterns Anti-Patterns, Attack Patterns, Security Design Patterns, Authentication, Authorization -Security Coding Security Algorithm, Security Protocol, Key Generation

(7 Hours)

**Module – 3**

**Validating Security:** Generating the Executable, Security Testing vulnerability assessment, code coverage tools - Secured Deployment, Security Remediation, Security Documentation, Security Response Planning, Safety-Critical Systems. **Secure Coding Principles:** Coding in C String manipulation, vulnerabilities and exploits, Pointers based vulnerabilities. Memory management, common errors, Integer Security, Double free Vulnerabilities.

(8 Hours)



<b>Module - 4</b>
<b>Security in web-facing applications:</b> Overview of web security, Identity Management, public key infrastructure, Code injection, Parameter tampering, secured web programming, application vulnerability description language <div>(8 Hours)</div>
<b>Module - 5</b>
<b>Security and safety metrics:</b> Defining metrics-Differentiating measures and metrics -Software Metrics-Measuring and reporting metrics- Metrics for meeting requirements-Risk metrics-Security metrics for software systems-Safety metrics for software systems <div>(8 Hours)</div>
<b>Course Outcomes:</b> The students should be able to: CO1: Evaluate a secure software development process including designing secure applications, writing secure code against attacks. CO2: Assess the reports through security testing procedures. CO3: Solve the security issues of vulnerabilities, flaws, and threats. CO4: Identify and use the standard Secure Coding Principles for designing secure software systems. CO5: Develop secure web programming to enhance the software code more resistant to attacks. CO6: Identify the need of Security and safety metrics.
<b>Question paper pattern:</b> <ul style="list-style-type: none"> <li>• <b>SEE</b> will be conducted for 100 marks.</li> <li>• Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>• <b>CIE</b> will be announced prior to the commencement of the course.</li> <li>• 25 marks for the test. Average of three tests will be taken.</li> <li>• 25 marks for Flexible Assessment Method.</li> </ul>
<b>Textbook:</b> <ol style="list-style-type: none"> <li>1. Asoke K. Talukder, Manish Chaitanya, Architecting Secure Software Systems, ISBN 9781420087840, 2008.</li> <li>2. Engineering Safe and Secure Software Systems Book by C. Warren Axelrod Artech House Publishers; Unabridged edition (30 November 2012) ISBN-13 : 978-1608074723</li> </ol> <b>References:</b> <ol style="list-style-type: none"> <li>1. Software Security Principles. Policies, and Protection Mathias Payer July 2021, v0.37.</li> <li>2. Security Engineering: A Guide to Building Dependable Distributed Systems by Ross J. Anderson: Anderson, Ross J. Security Engineering: A Guide to Building Dependable Distributed Systems. Wiley, 2020.</li> </ol> <b>Web Resources:</b> <ol style="list-style-type: none"> <li>1. Software Security by the University of California, Irvine: University of California, Irvine. "Software Security." Coursera, <a href="http://www.coursera.org/learn/software-security">www.coursera.org/learn/software-security</a>.</li> <li>2. Secure Software Design by the University of Colorado Boulder: University of Colorado Boulder. "Secure Software Design."Coursera, <a href="http://www.coursera.org/learn/secure-software-design">www.coursera.org/learn/secure-software-design</a>.</li> </ol>



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**

Choice Based Credit System (CBCS)

**SEMESTER - II****Augmented and Virtual Reality (3:0:0) 3**

(Effective from the academic year 2024-25)

Course Code	24MCS24A	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3

**Course Objectives:** This course will enable students to:

1. Explore scientifically sound principles of Augmented and Virtual Reality.
2. Compare and Contrast technologies in the context of AR and VR systems design.
3. Demonstrate the knowledge of the input devices, tracking and output devices for both compositing and interactive applications.
4. Analyze the use of objects for managing large scale Virtual Reality environments in real time.

**Preamble:** In an era where digital innovation continuously reshapes our interaction with the world, Augmented Reality (AR) and Virtual Reality (VR) stand at the forefront of this technological evolution. These immersive technologies offer profound possibilities for both industry and daily life, blending the virtual and real worlds to create new experiences and solutions.

**Module - 1**

**Introduction to Virtual and Augmented Reality:** What is Virtual Reality (VR)? What is Augmented Reality (AR)? What is the purpose of VR/AR? What are the basic concepts? What are the hard- and software components of VR/AR systems? How has VR/AR developed historically?  
(8 hours)

**Module - 2**

**Perceptual Aspects of VR and Virtual World:** VR phenomena-double vision and cybersickness. human perception processes, human information processing, different limitations of human perception, Virtual worlds, the contents of VR environments, dynamic behavior of 3D objects. interactions with 3D objects.  
(8 hours)

**Module - 3**

**VR/AR Input Devices, Tracking and Output Devices:** How do Virtual Reality (VR) and Augmented Reality (AR) systems recognize the actions of users, know where the user is, track objects in their movement, input devices for VR and AR. Output devices and technologies for VR and AR. Devices for visual output play, stationary displays, acoustic and haptic outputs.  
(8 hours)

**Module - 4**

**Interaction in Virtual Worlds, Real-Time Aspects of VR Systems:** Design and realization of interaction and the resulting user interface of a VR/AR system, system control, selection, manipulation and navigation, real-time capability of VR systems., types of latencies, efficient collision detection.  
(8 hours)



Module - 5
<p><b>Authoring and Mathematical Foundations of VR/AR Applications:</b> Authoring of VR and AR applications, the authoring process and the use of the tools, mathematical methods offer fundamental principles to model three-dimensional space.</p> <p style="text-align: right;">(8 hours)</p>
<p><b>Course outcomes:</b> The students will be able to</p> <p>CO1: Review the Fundamental concepts of Virtual and Augmented Reality with hard and soft components and history.</p> <p>CO2: Design the Perceptual Aspects of VR and Virtual World.</p> <p>CO3: Describe the input devices, tracking and output devices in AR-VR Applications.</p> <p>CO4: Summarize the interaction and real aspect of AR VR systems.</p> <p>CO5: Articulate and illustrate the applications in authorizing and mathematical aspects of AR- VR tools</p>
<p><b>Question paper pattern:</b></p> <ul style="list-style-type: none"> <li>• <b>SEE</b> will be conducted for 100 marks.</li> <li>• Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>• <b>CIE</b> will be announced prior to the commencement of the course.</li> <li>• 25 marks for the test. Average of three tests will be taken.</li> <li>• 25 marks for Flexible Assessment Method.</li> </ul>
<p><b>Textbooks:</b></p> <ol style="list-style-type: none"> <li>1. Ralf Doerner, Wolfgang Broll, Paul Grimm, Bernhard Jung: Virtual and Augmented Reality (VR/AR)-Foundations and Methods of Extended Realities (XR)-springers-2022.</li> </ol> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Schmalstieg D. and Hollerer T., Augmented and Virtual Reality, Addison-Wesley (2016).</li> <li>2. Aukstakalnis S., Practical Augmented Reality: A Guide to the Technologies, Applications, and Human Factors for AR and VR, Addison-Wesley (2016).</li> <li>3. Erin Pangilinan, Steve Lukas, Vasanth Mohan: Creating Augmented and Virtual Realities: Theory and Practice for Next-Generation Spatial Computing.</li> <li>4. Doug A. B., Kruijff E., LaViola J. J. and Poupyrev I. , 3D User Interfaces: Theory and Practice , Addison-Wesley (2005,2011p) 2nd ed.</li> <li>5. Parisi T., Learning Virtual Reality, O'Reilly (2016) 1st ed.</li> <li>Whyte J., Virtual Reality and the Built Environment, Architectural Press (2002).</li> </ol> <p><b>Web Resources:</b></p> <ol style="list-style-type: none"> <li>1. Introduction to Augmented Reality and ARCore by Google: Google. "Introduction to Augmented Reality and ARCore." Coursera, <a href="http://www.coursera.org/learn/augmented-reality-arcore">www.coursera.org/learn/augmented-reality-arcore</a>.</li> <li>2. Virtual Reality Specialization by the University of London: University of London. "Virtual Reality Specialization." Coursera, <a href="http://www.coursera.org/specializations/virtual-reality">www.coursera.org/specializations/virtual-reality</a>.</li> <li>3. Building AR/VR Experiences with Unity" by the University of London: University of London. "Building AR/VR Experiences with Unity." Coursera, <a href="http://www.coursera.org/learn/building-arvr-experiences-unity">www.coursera.org/learn/building-arvr-experiences-unity</a>.</li> </ol>



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> Choice Based Credit System (CBCS) <b>SEMESTER – II</b>			
<b>Spatial Computing and Mixed Reality (3:0:0) 3</b> (Effective from the academic year 2024-25)			
Course Code	24MCS24B	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<p><b>Course Objectives:</b> This course will enable students to:</p> <ol style="list-style-type: none"> <li>1. Explore the fundamental technologies that drive spatial computing and how they differ from traditional computing paradigms.</li> <li>2. Discuss the diverse applications of spatial computing technologies across various sectors, showcasing current innovations and their impact.</li> <li>3. Examine the broader societal implications, including ethical considerations, privacy concerns, and the effects on workforce skills and accessibility.</li> <li>4. Analyze the emerging trends, future directions, and the potential transformative effects of spatial computing technologies on various industries and society at large.</li> </ol> <p><b>Preamble:</b> Immersive experiences that integrate seamlessly with our physical environments. Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR) are not just technological advancements; they represent a fundamental shift in how we perceive and interact with information. These technologies have the potential to revolutionize industries, redefine entertainment, and enhance our daily lives in ways previously imagined only in science fiction.</p>			
<b>Module – 1</b>			
<p><b>The Evolution of Spatial Computing:</b> Historical Background, Key Milestones and Technological Advances, The Rise of Immersive Technologies. <b>Understanding Spatial Computing:</b> Defining Spatial Computing, Core Technologies: AR, VR, and MR,- How Spatial Computing Differs from Traditional Computing.</p> <p style="text-align: right;">(8 hours)</p>			
<b>Module – 2</b>			
<p><b>Augmented Reality (AR):</b> Overview of AR Technologies, AR Hardware and Software, Applications and Use Cases, Future Trends in AR. <b>Virtual Reality (VR):</b> VR Fundamentals and Technology, Immersive VR Experiences, VR Hardware and Development, The Role of VR in Training and Simulation.</p> <p style="text-align: right;">(8 hours)</p>			
<b>Module – 3</b>			
<p><b>Mixed Reality (MR):</b> Defining MR and Its Components, MR Hardware and Interaction Models, Applications in Industry and Entertainment, Challenges and Opportunities in MR. <b>The Convergence of Spatial Computing Technologies:</b> Integrating AR, VR, and MR, Cross-Platform Experiences, Synergies and Technological Innovations. <b>Spatial Computing in Different Sectors:</b> Healthcare and Medicine, Education and Training, Entertainment and Gaming, Manufacturing and Industry, Urban Planning and Smart Cities.</p> <p>(8 hours)</p>			



<b>Module – 4</b>
<p><b>The Impact of Spatial Computing on Society:</b> Ethical Considerations and Privacy Issues, Social and Psychological Impacts, Accessibility and Inclusivity, The Future Workforce and Skills. <b>Designing for Immersive Experiences:</b> Principles of Immersive Design, User Experience (UX) in Spatial Computing, Challenges in Designing for Immersive Environments, Case Studies of Successful Designs.</p> <p>(8 hours)</p>
<b>Module – 5</b>
<p><b>Developing Spatial Computing Applications:</b> Software Development Tools and Platforms, Programming for AR, VR, and MR , Best Practices and Development Strategies, Case Studies of Innovative Applications. <b>The Future of Spatial Computing:</b> Emerging Trends and Technologies, Predictions and Vision for the Future, Research and Development Directions, The Role of AI and Machine Learning.</p> <p>(8 hours)</p>
<p><b>Course Outcomes:</b> The students will be able to</p> <p>CO1: Analyze spatial computing technologies to understand their capabilities and applications.</p> <p>CO2: Evaluate mixed reality applications for effectiveness in enhancing user experiences.</p> <p>CO3: Design immersive mixed reality experiences integrating virtual and real-world elements.</p> <p>CO4: Implement spatial computing solutions using relevant tools and technologies.</p>
<p><b>Question paper pattern:</b></p> <ul style="list-style-type: none"> <li>• SEE will be conducted for 100 marks.</li> <li>• Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>• CIE will be announced prior to the commencement of the course.</li> <li>• 25 marks for the test. Average of three tests will be taken.</li> <li>• 25 marks for Flexible Assessment Method.</li> </ul>
<p><b>Textbooks:</b></p> <ol style="list-style-type: none"> <li>1. Immersive Futures: Exploring Spatial Computing Technologies: Morgan Lee, Mar 2024.</li> </ol> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. The Future of Technology in Education: How AI Will Transform the Learning and Teaching Process Forever Hardcover – Import, 6 May 2020, by Harib Shaqsy.</li> <li>2. Spatial Computing: An Ai-driven Business Revolution, by Cathy Hackl and Irene Cronin   10 June 2024.</li> <li>3. Creating Augmented and Virtual Realities: Theory and Practice for Next-Generation Spatial Computing (Greyscale Indian Edition) by Erin Pangilinan , Steve Lukas, et al.   31 March 2019.</li> </ol> <p><b>Web Resources:</b></p> <ol style="list-style-type: none"> <li>1. Spatial Computing and Augmented Reality" by the University of London: University of London. "Spatial Computing and Augmented Reality." Coursera, <a href="http://www.coursera.org/learn/spatial-computing-augmented-reality">www.coursera.org/learn/spatial-computing-augmented-reality</a>.</li> <li>2. <a href="http://www.coursera.org/learn/augmented-reality-arcore">www.coursera.org/learn/augmented-reality-arcore</a>.</li> <li>3. <a href="http://www.coursera.org/specializations/virtual-reality">www.coursera.org/specializations/virtual-reality</a>.</li> </ol>



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> Choice Based Credit System (CBCS) SEMESTER – I			
<b>3D Modeling and Animation for AR/VR (3:0:0) 3</b> (Effective from the academic year 2024-25)			
Course Code	24MCS24C	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<b>Course Objectives:</b> This course will enable students: <ol style="list-style-type: none"> <li>1. To explore the concepts of 3D- Three Dimension and Animation.</li> <li>2. To gain Theoretical knowledge of how to create a Three-dimensional (3D) Environment.</li> <li>3. To demonstrate the ability to map detailed textures to 3D objects in a theoretical way.</li> <li>4. Compare and Contrast on Lighting and Rendering for the 3D objects and 3D environment.</li> </ol> <p><b>Preamble:</b> to equip ourselves with the knowledge and skills necessary to excel in the field of 3D design and animation, setting the stage for both theoretical understanding and practical application. three-dimensional (3D) technology is essential for creating immersive and realistic virtual environments.</p>			
Module – 1			
<b>Understanding 3D Space:</b> Cartesian Mapping and 3D Coordinates, The Grid, Global and Local Coordinate System, Transforms, Pivots and Snaps, Freezing and resetting transforms <b>Exercise:</b> Transforming objects in space with MAYA. <div>(8 hours)</div>			
Module – 2			
<b>Polygon Geometry:</b> Basic Polygon concepts, triangulation and polygons, polygon primitives, Sub object Editing, Chamfer and Bevel, Extrude, Advanced polygons modeling tools, smoothing. <b>Exercise:</b> Modeling with polygons Tools. <div>(8 hours)</div>			
Module – 3			
<b>NURBS and Curve-Based Geometry:</b> Curve, Nurbs Curve, Projected Curves and Trim Surfaces, NURBS into polygons. <b>Exercise:</b> The wine glass. <div>(8 hours)</div>			
Module – 4			
<b>Lighting, Materials, Textures, and UVs:</b> GPU vs CPU rendering, light, camera, Materials, Polygon normal, light and Lighting, Map Shadows, Textures, UV Mapping, Software Rendering. <b>Exercise:</b> Creating a Complex Material. <div>(8 hours)</div>			
Module – 5			
<b>Animation:</b> Definition and Basic Concepts, Keyframes and Keyframing, Pose-Based Animation, Rotoscoping and motion Capture Graphs Curves and Tangents. <div>(8 hours)</div>			



**Course Outcomes:** The students will be able to

- CO1: Apply best practices in 3D modeling and animation to address specific AR/VR project requirements.
- CO2: Analyze the impact of 3D assets on user immersion and interactivity in AR/VR applications.
- CO3: Analyze principles of lighting and rendering, crucial for achieving realistic visual effects and enhancing the overall quality of 3D scenes.
- CO4: Apply detailed 3D models for AR/VR applications to animate models to produce realistic and interactive animations for immersive environments.

**Question paper pattern:**

- SEE will be conducted for 100 marks.
- Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
- CIE will be announced prior to the commencement of the course.
- 25 marks for the test. Average of three tests will be taken.
- 25 marks for Flexible Assessment Method.

**Textbooks:**

1. Essential Skills for 3D Modeling, Rendering, and Animation by Zeman, Nicholas Bernhardt, Boca Raton : Taylor & Francis, Paperback – 6 November 2014.

**References:**

1. The Animator's Survival Kit: A Manual of Methods, Principles and Formulas for Classical, Computer, Games, Stop Motion and Internet Animators 4th Edition – 2009.
2. Jean Ann Wright, “Animation Writing and Development: From Script Development to Pitch (Focal Press Visual Effects and Animation) 1<sup>st</sup> Edition”.
3. Preston J. Blair, “Animation 1: Learn to Animate Cartoons Step by Step” (Cartooning, Book 1) Paperback – 2003.
4. Russell Chun “Adobe Animate CC Classroom in a Book” 1st Edition, 2018.

**Web Resources:**

1. 3D Model Creation with Blender. Coursera, University of London, <https://www.coursera.org/learn/3d-model-creation-blender>.
2. Introduction to Virtual Reality. Coursera, University of London, <https://www.coursera.org/learn/virtual-reality>.
3. 3D Computer Graphics. Coursera, University of Tokyo, <https://www.coursera.org/learn/3d-computer-graphics>.
4. Interactive Computer Graphics. Coursera, University of Tokyo, <https://www.coursera.org/learn/interactive-computer-graphics>.



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> Choice Based Credit System (CBCS) SEMESTER – II			
<b>Human-Computer Interaction (3:0:0) 3</b> (Effective from the academic year 2024-25)			
Course Code	24MCS24D	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<b>Course Objectives:</b> This course will enable students: <ol style="list-style-type: none"> <li>1. Explore the importance of a good interface design.</li> <li>2. To analyze the importance of human psychology in designing good interfaces.</li> <li>3. To instill knowledge for applying Human Computer Interface in their day – to – day activities.</li> <li>4. To encourage students to indulge into research in Machine Interface Design.</li> </ol> <b>Preamble:</b> Human-Computer Interaction (HCI) refers to the design and use of systems and technologies that facilitate interaction between people and computers. This field encompasses a wide range of elements, including hardware, software, and user experience design, aiming to make interactions intuitive, efficient, and effective.			
Module – 1			
<b>HUMAN AND THE INTERACTION PARADIGMS</b> Introduction, Input–output channels, Getting noticed, Design Focus: Where’s the middle, Human memory, Design Focus: Cashing in, Thinking: reasoning and problem solving, Human error and false memories, Emotion, Individual differences, Psychology and the design of interactive systems-The context of the interaction, Half the picture, Experience, engagement and fun-Introduction, Paradigms for interaction. <div>(8 hours)</div>			
Module – 2			
<b>INTERACTION DESIGN:</b> Introduction, What is design, The process of design, User focus, Cultural probes, Scenarios, Navigation design, Beware the big button trap, Modes, Screen design and layout, Alignment and layout matter, Checking screen colors, Iteration and prototyping. <b>HCI IN THE SOFTWARE PROCESS:</b> Introduction, The software life cycle, Usability engineering, Iterative design and prototyping, Design Focus: Prototyping in practice, Design rationale. <div>(8 hours)</div>			
Module – 3			
<b>DESIGN RULES AND UNIVERSAL DESIGN:</b> Introduction, Principles to support usability, Standards, Guidelines, Golden rules and heuristics, HCI patterns. Universal design principles, Multi-modal interaction, Designing websites for screen readers, Choosing the right kind of speech, Apple Newton, Designing for diversity, Mathematics for the blind. <div>(8 hours)</div>			
Module – 4			
<b>COGNITIVE MODELS AND SOCIO-ORGANIZATIONAL ISSUES:</b> Introduction, Goal and task hierarchies, GOMS saves money, Linguistic models, The Challenge of display-based systems, Physical and device models, Cognitive architectures-Organizational issues, Implementing workflow in Lotus Notes.			



(8 hours)

### Module – 5

**Communication And Collaboration Models:** Introduction, Face-to-face communication, Looking real – Avatar Conference, Conversation, Text-based communication, Group working.

**Task Analysis:** Introduction, Differences between task analysis and other techniques, Task decomposition, Knowledge-based analysis, Entity–relationship-based techniques, Sources of information and data collection, Uses of task analysis. (8 Hours)

**Course outcomes:** Upon completion of the course, Students will be able to:

CO1: Analyze HCI principles to understand user needs and design requirements.

CO2: Evaluate interactive systems for usability and user experience

CO3: Analyze and identify user models, user support, socio-organizational issues, and stakeholder requirements of HCI systems.

CO4: Apply an interactive design process and universal design principles to designing HCI systems.

#### Question paper pattern:

- SEE will be conducted for 100 marks.
- Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
- CIE will be announced prior to the commencement of the course.
- 25 marks for the test. Average of three tests will be taken.
- 25 marks for Flexible Assessment Method.

#### Textbooks:

1. Alan Dix, Janet Finlay, Gregory D. Abowd, Russell Beale, *Human–Computer Interaction*, (3e) Pearson 2012

#### References:

1. Donald A. Norman, *The design of everyday things*, Currency and Doubleday (2e), 2012.
2. Rogers Sharp Preece, *Interaction Design: Beyond Human Computer Interaction*, Wiley (2e), 2012.
3. Guy A. Boy, *The Handbook of Human Machine Interaction*, Ashgate publishing Ltd, 2011.

#### Web Resources:

1. Human-Computer Interaction. Coursera, University of California, San Diego, <https://www.coursera.org/learn/human-computer-interaction>. Accessed 28 Aug. 2024.
2. Interaction Design Specialization. Coursera, University of California, San Diego, <https://www.coursera.org/specializations/interaction-design>. Accessed 28 Aug. 2024.
3. User Experience Research and Design. Coursera, University of Michigan, <https://www.coursera.org/specializations/user-experience-research-design>. Accessed 28 Aug.



<p align="center"><b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b>  Choice Based Credit System (CBCS)  <b>SEMESTER – II</b></p>			
<p align="center"><b>NATURAL LANGUAGE PROCESSING (3:0:0) 3</b>  (Effective from the academic year 2024-25)</p>			
Course Code	24MCS24E	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<p><b>Course Objectives:</b> This course will enable students:</p> <ol style="list-style-type: none"> <li>1. To explore language processing techniques to enable Text data processing</li> <li>2. To impart knowledge on text data processing using Statistical and Machine learning models</li> <li>3. To describe the various Embedding and Deep learning models for NLP</li> <li>4. To introduce real world applications of Language processing</li> </ol>			
<b>Module – 1</b>			
<p><b>INTRODUCTION TO LANGUAGE PROCESSING TASKS:</b> Natural Language Processing – Applications of NLP – Linguistic Background – NLP tasks –Ambiguities in NLP tasks – Finite state automata – Regular Expressions – Corpus – Text Normalization – Edit Distance – Boundary Determination – Tokenization – Stemming -Lemmatization.</p> <p align="right">(8 Hours)</p>			
<b>Module – 2</b>			
<p><b>MORPHOLOGICAL ANALYSIS AND WORD PROCESSING:</b> Morphological Analysis – Part of speech tagging – Shallow parsing – Dependency parsing – WordNet- Semantic similarity measures – Semantic representation – Coreference Resolution – Tools – Natural Language Toolkit – Stanford CoreNLP.</p> <p align="right">(8 Hours)</p>			
<b>Module – 3</b>			
<p><b>LANGUAGE AND STATISTICAL MODELS FOR NLP:</b> Language model – n-gram language models – Hidden Markov Model – Conditional random Fields – Topic models – Graph Models – Machine Learning for NLP – Language Features – Maximum Entropy classifier – Phrase Based clustering.</p> <p align="right">(8 Hours)</p>			
<b>Module – 4</b>			
<p><b>NAMED ENTITY RECOGNITION AND KNOWLEDGE REPRESENTATION FOR TEXT:</b> Information retrieval and Information extraction - Named Entity Recognition - Relation Identification-Template filling- Knowledge Representation for Texts: Ontologies, Knowledge Graphs, Frames-Linked Open Data Cloud.</p> <p align="right">(8 Hours)</p>			
<b>Module – 5</b>			
<p><b>CASE STUDIES FOR NLP:</b> Case Studies and Research Cases in Question Answering – Machine Translation- Applications in Social media - Life science - Legal Text Applications.</p> <p align="right">(8 Hours)</p>			



**Course outcomes:** Upon completion of the course, Students will be able to:

CO1: Apply Language processing for text data at syntactic and semantic level.

CO2: Analyze the text content to provide predictions related to a specific domain using language models.

CO3: Analyze the patterns in text and pre-process the large text corpus.

CO4: Apply NLP concepts for building real-world applications.

**Question paper pattern:**

- **SEE** will be conducted for 100 marks.
- Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
- **CIE** will be announced prior to the commencement of the course.
- 25 marks for the test. Average of three tests will be taken.
- 25 marks for Flexible Assessment Method.

**Textbooks:**

1. Anders Søgaard, Ivan Vulić, Sebastian Ruder, Manaal Faruqi , Cross-Lingual Word Embeddings (Synthesis Lectures on Human Language Technologies), Morgan & Claypool Publishers, 2019.
2. Delip Rao, Brian McMahan, Natural Language Processing with PyTorch: Build Intelligent Language Applications Using Deep Learning, O'Reilly, 2019
3. Daniel Jurfsky, James H. Martin Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics and Speech Recognition, Second Edition, Pearson 2013.
4. Christopher D. Manning and Hinrich Schutze, "Foundations of Statistical Natural Language Processing", MIT Press, 1999

**References:**

1. Bird, Steven, Ewan Klein, and Edward Loper. Natural Language Processing with Python: Analysis of Text with the Natural Language Toolkit. O'Reilly Media, 2009.
2. Goldberg, Yoav. Neural Network Methods for Natural Language Processing. Morgan & Claypool Publishers, 2017.
3. Hirschberg, Julia, and Christopher D. Manning. Advances in Natural Language Processing. Cambridge University Press, 2021.
4. Manning, Christopher D., and Prabhakar Raghavan. Introduction to Information Retrieval. Cambridge University Press, 2008.

**Web Resources:**

1. Deeplearning.ai. Natural Language Processing Specialization. Coursera, <https://www.coursera.org/specializations/natural-language-processing>.
2. National Research University Higher School of Economics. Natural Language Processing with Classification and Vector Spaces. Coursera, <https://www.coursera.org/learn/classification-vector-spaces>.
3. University of Michigan. Natural Language Processing with Deep Learning in PyTorch. Coursera, <https://www.coursera.org/learn/deep-learning-pytorch>.



**M.TECH. COMPUTER SCIENCE AND  
ENGINEERING**

Choice Based Credit System (CBCS)  
SEMESTER – II

**WEB BASED INFORMATION RETRIEVAL (3:0:0) 3**

(Effective from the academic year 2024-25)

Course Code	24MCS24F	CIE Marks	50
Teaching Hours/Week (L: T: P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3

**Course Objectives:** This course will enable students to:

1. Demonstrate knowledge of key concepts in information retrieval, such as indexing, querying, and ranking.
2. Explain the mechanisms of search engines, including crawling, indexing, and query processing.
3. Develop and optimize search queries to effectively retrieve relevant web-based information.

**Module – 1**

**Introduction:** Basic Concepts – Practical Issues - Retrieval Process – Architecture - Boolean Retrieval –Evolution of the World Wide Web– Open Source IR Systems–History of Web Search – Web Characteristics–The impact of the web on IR —IR Versus Web Search.

(8 Hours)

**Module – 2**

**Conceptual IR on the Web:** Components of a Search Engine-Issues in Web Based IR-Types of Information Retrieval on the Web-Personalized Web Search-Applications of Information Retrieval on the Web-Web Crawler Architecture.

(8 Hours)

**Module – 3**

**Modelling:** Taxonomy and Characterization of IR Models – Boolean Model – Vector Model - Term Weighting-TF-IDF, Scoring and Ranking Models –Language Models – Set Theoretic Models -Probabilistic Models-Models for Browsing.

(8 Hours)

**Module – 4**

**Analytical Models and Indexing:** Latent Semantic Analysis-Semantic Similarity Models: Distance Based Models, Similarity Based Models, Co-occurrence Based Models-Blocked Sort Based Indexing -Distributed and Dynamic Indexing.

(8 Hours)

**Module – 5**

**Evaluation, Querying and Case Studies:** The Page Rank Model-Tokenization and Stemming Technique- IR Evaluation Metrics: Precision, Recall and Other Derived Measures- Keyword Based Querying and its categorization- Case Study on Hash Table Clustering for Web People Search- Case Study on Extracting Metadata using Element Tree for Tag Recommendation.

(8 Hours)

**Course Outcomes:** Upon completion of the course, Students will be able to:

- CO1: Apply Boolean models, vector space models, and probabilistic models to solve practical problems.
- CO2: Analyze the issues related to relevance and ranking of search results to meet user needs.
- CO3: Design Web-based information retrieval systems.



**Question paper pattern:**

- SEE will be conducted for 100 marks.
- Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
- CIE will be announced prior to the commencement of the course.
- 25 marks for the test. Average of three tests will be taken.
- 25 marks for Flexible Assessment Method.

**Textbooks:**

1. Ricardo Baeza – Yates, BerthierRibeiro – Neto, Modern Information Retrieval: The concepts and Technology behind Search (ACM Press Books), Second Edition 2011
2. Ricardo Baeza – Yates, BerthierRibeiro – Neto, Modern Information Retrieval, Pearson Education, Second Edition, reprint 2015.

**References:**

1. Christopher D. Manning, Prabhakar Raghavan, Hinrich Schutze, Introduction to Information Retrieval, Cambridge University Press, First South Asian Edition 2012.
2. Stefan Buttcher, Charles L. A. Clarke, Gordon V. Cormack, Information Retrieval Implementing and Evaluating Search Engines, The MIT Press, Cambridge, Massachusetts London, England, 2010.

**Web Resources:**

1. University of London. "Information Retrieval." Coursera, <https://www.coursera.org/learn/information-retrieval>. Accessed 6 Sep. 2024.
2. Stanford University. "Natural Language Processing." Coursera, <https://www.coursera.org/learn/natural-language-processing>. Accessed 6 Sep. 2024.
3. University of California, Davis. "Text Retrieval and Search Engines." Coursera, <https://www.coursera.org/learn/text-retrieval>. Accessed 6 Sep. 2024.



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**  
**Choice Based Credit System (CBCS)**  
**SEMESTER – II**

**Semantic Web (3:0:0) 3**  
**(Effective from the academic year 2024-25)**

Course Code	24MCS24G	CIE Marks	50
Teaching Hours/Week (L: T: P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3

**Course Objectives:** This course will enable students:

1. To learn the importance of Semantic Web.
2. To explore various semantic knowledge representation strategies.
3. To comprehend the concepts of Ontology.
4. To explore the various Ontology development methods and methodologies

**Module – 1**

**Introduction:** Comparing the Syntactic Web and Semantic Web-Limitations of Today's Web-Goal of the Semantic Web-How the Semantic Web will work-What Semantic Web is Not- A Layered Approach: Architecture of the Semantic Web-Logic on the Semantic Web.

(8 Hours)

**Module – 2**

**Ontology And Semantic Web:** What is an Ontology-From Ontology Towards Ontology Engineering- Types and Categorization of Ontologies- Categorizing Ontologies based on richness of their Structure-Overview of Ontological Commitments- Ontologies, Classifying Ontologies, Principles for the Design of Ontologies, Differences Among Taxonomies, Thesauri.

(8 Hours)

**Module – 3**

**Ontology Representations And Languages:** XML Overview-RDF: Overview, Syntax Structure, Semantics, Pragmatics-RDF Schema Representations-Ontology Markup Languages: OWL- Requirements for Web Ontology Description Languages, Header Information, Versioning, and Annotation Properties, Datatype and Object Properties, Property Characteristics, Classes, Class Descriptions, Class Axioms, Individuals, Data Types, A Summary of the OWL Vocabulary.

(8 Hours)

**Module – 4**

**Modeling Specific Ontologies:** Domain Ontologies: Building Chemistry Ontologies-Modeling Medical Ontologies- Building Engineering Ontologies- The CYC Method-Uschold and King's method-The KACTUS Approach-Methontology- Ontology Re-engineering.

(8 Hours)

**Module – 5**

**Ontology Sources and Semantic Agents:** Metadata, Dublin Core, Warwick Framework, FOAF, Upper Ontologies: SUMO, KR Ontology, CYC- Linked Open Data Cloud-Semantic Wikis and Wikidata- Agents in the Semantic Web Context, The Role of Ontologies, Software Agent Communication in the Semantic Web.

(8 Hours)

**Course Outcomes:** Upon completion of the course, Students will be able to:

- CO1: Distinguish conventional web with Semantic Web.  
CO2: Design semantic knowledge representation modes.  
CO3: Design Ontologies pertaining to real world domains.  
CO4: Compare the methods and methodologies in Ontology Modeling.



**Question paper pattern:**

- SEE will be conducted for 100 marks.
- Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
- CIE will be announced prior to the commencement of the course.
- 25 marks for the test. Average of three tests will be taken.
- 25 marks for Flexible Assessment Method.

**Textbooks:**

1. Karin K. Breitman, Marco Antonio Casanova, and Walt Truszkowski. Semantic Web: Concepts, Technologies and Applications. Springer, 2010.
2. Grigoris Antoniou, Frank van Harmelen, "A Semantic Web Primer (Cooperative Information Systems)", The MIT Press, Reprint 2015.
3. Asuncion Gomez-Perez, Oscar Corcho, Mariano Fernandez-Lopez "Ontological Engineering: with examples from the areas of Knowledge Management, eCommerce and the Semantic Web" Springer, Revised 2015.

**References:**

1. Alexander Maedche, "Ontology Learning for the Semantic Web", Springer; 1 edition, 2002
2. John Davies, Dieter Fensel, Frank Van Harmelen, "Towards the Semantic Web: Ontology – Driven Knowledge Management", John Wiley & Sons Ltd., Reprint 2013.
3. John Davies (Editor), Rudi Studer (Co-Editor), Paul Warren (Co-Editor) "Semantic Web Technologies: Trends and Research in Ontology-based Systems" Wiley Publications, Reprint 2015.
4. Dieter Fensel (Editor), Wolfgang Wahlster, Henry Lieberman, James Hendler, "Spinning the Semantic Web: Bringing the World Wide Web to Its Full Potential", The MIT Press, 2012 revised edition.
5. Michael C. Daconta, Leo J. Obrst, Kevin T. Smith, "The Semantic Web: A Guide to the Future of XML, Web Services, and Knowledge Management", Wiley, 2008 reprint.
6. Steffen Staab (Editor), Rudi Studer, "Handbook on Ontologies (International Handbooks on Information Systems)", Springer, 2008 reprint.
7. Dean Allemang (Author), James Hendler (Author) "Semantic Web for the Working Ontologist: Effective Modeling in RDFS and OWL" (Paperback), Morgan Kaufma.

**Web Resources:**

1. Eindhoven University of Technology. "Semantic Web Technologies." Coursera, <https://www.coursera.org/learn/semantic-web>. Accessed 6 Sep. 2024.
2. Johns Hopkins University. "Linked Data and the Semantic Web." EP Online, <https://ep.jhu.edu/courses/605643-linked-data-and-the-semantic-web/>. Accessed 6 Sep. 2024.
3. University of Southampton. "The Semantic Web." FutureLearn, <https://www.futurelearn.com/courses/the-semantic-web>. Accessed 6 Sep. 2024.



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**  
**Choice Based Credit System (CBCS)**  
**SEMESTER – II**

**Generative AI and Prompt Engineering (3:0:0) 3**  
**(Effective from the academic year 2024-25)**

Course Code	24MCS24H	CIE Marks	50
Teaching Hours/Week (L: T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3

Course Objectives: This course will enable students to:

1. Apply advanced neural network architectures like GANs, VAEs, and Transformers in generative AI models.
2. Analyze the use of generative AI in various fields such as healthcare, finance, and creative industries, gaining insights into real-world applications.
3. Gain proficiency in working with large language models (LLMs) such as GPT and BERT, with a focus on attention mechanisms, pre-training strategies, and practical deployment.
4. Develop practical skills in prompt engineering to improve the efficiency and quality of text generation tasks.
5. Apply generative AI techniques to solve real-world problems in natural language processing (NLP), text generation, and image generation, through hands-on projects and case studies.

**Preamble:** This syllabus serves as a comprehensive roadmap for students to master Generative AI and Prompt Engineering. It begins with foundational knowledge of advanced neural network architectures and generative models, such as GANs, VAEs, Transformers, and LSTMs, providing a solid base for understanding how these technologies work. Students will then explore practical applications of generative AI across various industries, including healthcare, finance, and the creative arts. The syllabus delves into advanced techniques, focusing on large language models like GPT and BERT, and emphasizes prompt engineering for optimizing AI performance. Through hands-on projects and real-world case studies, students will apply their learning to solve complex problems, enhancing their problem-solving skills and innovation capabilities. This structured approach ensures students are well-prepared for both academic research and professional roles in the rapidly evolving field of AI.

**Module – 1**

Advanced Neural Network Architectures: Introduction to advanced architectures. Introduction to Generative AI Models: Generative Adversarial Networks (GANs), Variational Autoencoders (VAEs), Transformers, Attention Mechanism in detail Long Short-Term Memory Networks (LSTMs). Generative AI Applications: Applications in Various Fields: Art and Creativity, Image and Video Generation, Text Generation, Music Composition, Healthcare Finance. Real-world use cases and challenges in deploying generative AI models.

(8 Hours)



Module – 2
<p>Introduction to Large Language Models: Overview of Generative AI and Large Language Models. Basics of attention mechanisms and Transformer architecture. Pre-training techniques and transfer learning strategies. Real-world applications of large language models.</p> <p>(8 Hours)</p>
Module – 3
<p>GPT Models and Applications: Study of GPT architecture and variants. Applications of GPT models in text generation and dialogue systems. Case study based implementation of GPT-based tasks. GPT-based chatbot enhances E-Shop's customer support service. BERT and Advanced Techniques: Understanding BERT architecture and pre-training objectives. Fine-tuning BERT for downstream NLP tasks. Exploration of advanced Transformer architectures and techniques.</p> <p>(8 Hours)</p>
Module – 4
<p>Prompt Engineering: Five Pillars of Prompting. Intro to Text Generation Models. Standard Practices for Text Generation. Advanced Techniques for Text Generation with Langchain.</p> <p>(8 Hours)</p>
Module – 5
<p>Prompt Engineering Continued: Vector Databases. Autonomous Agents with Memory and Tools. Intro to Diffusion Models for Image Generation. Standard Practices for Image Generation. Advanced Techniques for Image Generation.</p> <p>(8 Hours)</p>
<p>Course Outcomes: The students will be able to:</p> <p>CO1: Explain the architecture and functioning of GPT and BERT, and understand the role of attention mechanisms.</p> <p>CO2: Apply basic prompt engineering techniques to optimize LLM performance in text generation tasks.</p> <p>CO3: Implement GPT and BERT models in chatbots, text summarization, and sentiment analysis.</p>
<p><b>Textbooks:</b></p> <ol style="list-style-type: none"> <li>1. Rehmani, Altaf. Generative AI for Everyone: Understanding the Essentials and Applications of This Breakthrough Technology. 2024.</li> <li>2. Dhamani, Numa. Introduction to Generative AI. Kindle ed., 2024.</li> <li>3. Goodfellow, Ian, Yoshua Bengio, and Aaron Courville. Deep Learning. MIT Press, 2016.</li> <li>4. Phoenix, James, and Mike Taylor. Prompt Engineering for Generative AI. 2024.</li> </ol> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Kalin, Josh. Generative Adversarial Networks Cookbook: Over 100 Recipes to Build Generative Models Using Python, TensorFlow, and Keras. Packt Publishing, 2018.</li> <li>2. Sprinter, Jesse. Generative AI in Software Development: Beyond the Limitations of</li> </ol>



Traditional Coding. O'Reilly Media, 2024.

3. Karim, Mohamed. Prompt Engineering: The Complete Guide. Tech Publishing, 2023.

**Web Resources:**

1. <https://www.coursera.org/learn/generative-ai-prompt-engineering-for-everyone>
2. <https://elearn.nptel.ac.in/shop/iit-workshops/completed/leveraging-generative-ai-for-teaching-programming-courses/?v=c86ee0d9d7ed>
3. <https://elearn.nptel.ac.in/shop/iit-workshops/completed/introduction-to-language-models/?v=c86ee0d9d7ed>



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> <b>Choice Based Credit System (CBCS)</b> <b>SEMESTER – II</b>			
<b>AGILE TECHNOLOGY(3:0:0) 3</b> (Effective from the academic year 2024-25)			
Course Code	24MCS25A	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<b>Course Objectives:</b> This course will enable students to: <ol style="list-style-type: none"> <li>1. Understanding iterative, incremental development processes leads to faster delivery of more useful software.</li> <li>2. Demonstrate the workflow of the Automating process.</li> <li>3. Explain the development of software using the Agile method.</li> <li>4. Explain the Mastering Agility.</li> <li>5. Understand the ability of six sigma concepts with Agile.</li> </ol> <p><b>Preamble:</b> Agile Technology refers to a set of principles and practices used in software development and project management that emphasize flexibility, collaboration, and iterative progress. Rooted in the Agile Manifesto, it prioritizes customer feedback, adaptive planning, and rapid delivery of functional software. Agile methodologies, such as Scrum and Kanban, advocate for frequent, incremental improvements through short development cycles known as sprints, fostering continuous communication between cross-functional teams and stakeholders.</p>			
Module – 1			
<b>Why Agile?:</b> Understanding Success, Beyond Deadlines, The Importance of Organizational Success, Enter Agility, <b>How to Be Agile?:</b> Agile Methods, Don't Make Your Own Method, The Road to Mastery, Find a Mentor. <div>(8 hours)</div>			
Module – 2			
<b>Automating the Agile ALM:</b> Goals of Automating the Agile ALM, Why Automating the ALM is Important, Where Do I Start? Tools, Do Tools Matter? Process over Tools, Understanding Tools in the Scope of ALM, Staying Tools Agnostic, Commercial versus Open Source, What Do I Do Today?, Automating the Workflow, Process Modelling Automation. <div>(8 hours)</div>			
Module – 3			
<b>Managing the Lifecycle with ALM:</b> Broad Scope of ALM Tools, Achieving Seamless Integration, Managing Requirements of the ALM, Creating Epics and Stories, Systems and Driven Development, Environment Management, Gold Copies, Supporting the CMDB. <div>(8 hours)</div>			
Module – 4			



**Mastering Agility:** Values and Principles: Commonalities, About Values, Principles, and Practices, Further Reading, **Improve the Process:** Understand Your Project, Tune and Adapt, Break the Rules, **Rely on People:** Build Effective Relationships, Let the Right People Do the Right Things, Build the Process for the People, **Eliminate Waste:** Work in Small, Reversible Steps, Fail Fast, Maximize Work Not Done, Pursue Throughput.

(8 hours)

## Module – 5

**Introduction to Six Sigma and Agile:** Definition and History, Core Concepts: DMAIC (Define, Measure, Analyse, Improve, Control), **Tools and Techniques:** Statistical Process Control, Root Cause Analysis, Process Mapping. Synergies Between Six Sigma and Agile. Case Study 1: Real-Time Quality Control in Agile with Six Sigma Tools  
Case Study 2: Enhancing Software Quality with Six Sigma in Agile.

(8 hours)

**Course Outcomes:** The students will be able to:

- CO1: Apply software development process to solve complex problems of engineering.
- CO2: Apply the knowledge of Agile principle for rapid software development.
- CO3: Distinguish between the traditional SDLC and agile ALM model for efficient and effective product delivery.
- CO4: Develop real-world applications using DevOps tools.

### Textbooks:

1. The Art of Agile Development (Pragmatic guide to agile software development), James shore, Chromatic, O'Reilly Media, Shroff Publishers & Distributors, 2007.

### References:

1. Agile Software Development, Principles, Patterns, and Practices, Robert C. Martin, Prentice Hall; 1st edition, 2002.
2. Agile and Iterative Development A Manager's Guide", Craig Larman Pearson Education, First Edition, India, 2004.
3. "The Lean Six Sigma Guide to Doing More With Less" by Mark Price, "Agile Six Sigma" by Scott M. Graffius.

### Web Resources:

1. . <https://www.geeksforgeeks.org/software-engineering-agile-software-development/>



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> <b>Choice Based Credit System (CBCS)</b> <b>SEMESTER – II</b>			
<b>WEB ENGINEERING (3:0:0) 3</b> (Effective from the academic year 2024-25)			
Course Code	24MCS27B	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<b>Course Objectives:</b> This course will enable students to: <ol style="list-style-type: none"> <li>1. Develop a comprehensive understanding of the processes involved in web engineering, from concept to deployment.</li> <li>2. Learn the key principles of web design focusing on usability, and accessibility.</li> <li>3. Explore the basics of project management specific to web application development, including planning, scheduling, and risk management.</li> <li>4. Explore the importance of web application development and its life cycle.</li> </ol> <p><b>Preamble:</b> Web Engineering involves the disciplined application of engineering principles to the development and management of web applications and services. It encompasses the systematic processes of design, development, deployment, and maintenance to ensure that web solutions are robust, scalable, and user-centric. Key aspects include the use of established methodologies and tools to handle requirements, architecture, usability, and performance, ensuring that web systems meet both technical specifications and user needs. Web Engineering aims to produce high-quality web applications efficiently while adapting to evolving technologies and user expectations.</p>			
Module – 1			
<b>Introduction:</b> Web Engineering Introduction - WebE Framework-Principles Should to Adapt the Framework-Is There Any Merit in an Old-School Approach-The Components of Web Engineering - How Does Software Engineering Come into Play- What WebE Methods Reside within the Process Framework-Isn't Web Engineering All about Tools and Technology- Web Engineering Best Practices <b>(8 hours)</b>			
Module – 2			
<b>Process:</b> Defining the Framework- Incremental Process Flow- How Are Framework Activities Conducted? -How Is the Framework Refined? -Generic Actions and Tasks for the WebE Framework -How Should the Communication Activity Be Refined? -What Tasks Are Required to Develop an Increment Plan? <b>(8 hours)</b>			
Module – 3			
Modeling: What Is Modeling?- What Analysis Modeling Tasks Can Be Applied? - What Are the Elements of a Design Model? -What Design Modeling Tasks Can Be Applied? What Construction Tasks Should Be Applied? Umbrella Activities -How Should a WebE Team Manage Change? - Modeling as a Concept -Modeling Frameworks-Is There a Modeling Framework for the Web- - Existing Modeling Approaches . <b>(8 hours)</b>			
Module – 4			

**Communication:** Communication and Planning-The Communication Activity -Elicitation- What Happens Before an Elicitation Session- How Do Stakeholders Prepare- What Tasks Are Performed During an Elicitation Session-What Are the User Categories for the WebApp- How Are Content and Functional Requirements Identified-How Are Constraints and Performance Issues Isolated-What Are Usage Scenarios? -What Are Use Cases? - How Is a Use Case Created- Identifying WebApp Increments  
(8 hours)

## Module – 5

**Design:** Design for WebApps - What Does a WebApp Designer Need to Know? --What Is Logical Design- What Is Physical Design? What Information Is Created because of Design? -Design Goals- Design Quality? -What Is a Quality Framework? -Design Process What Are the Elements of WebApp Design? -Characteristics of the Design Process? What Does an Incremental WebE Process Imply for the Design Activity- Initial Design of the Conceptual Architecture -Initial Design of the Technical Architecture – Case Study and Comparative Web Architectures.  
(8 hours)

### Course Outcomes:

The students will be able to:

**CO1:** Apply fundamental web design principles to create intuitive, user centered interfaces that meet accessibility standards and enhance the overall user experience.

**CO2:** Analyze Requirements for Web Application Design

**CO3:** Analyze client and user requirements to produce detailed design specifications, including architectural designs, wireframes, and user flows that align with business objectives.

**CO4:** Create comprehensive project plans that include timelines, resource allocation, and risk management strategies tailored to the unique demands of web application development.

### Textbooks:

1. Pressman, Roger S., and David Lowe. Web Engineering: A Practitioner's Approach. McGraw-Hill, 2009.

### References:

1. Kappel, Gerti, et al., editors. Web Engineering: The Discipline of Systematic Development of Web Applications. Wiley, 2006.
2. Rosenfeld, Louis, and Peter Morville. Information Architecture: For the Web and Beyond. 4th ed., O'Reilly Media, 2015.

### Web Resources:

1. Doe, Jane, and John Smith. Introduction to Web Software Engineering. Coursera, 12 Mar. 2023, [www.coursera.org/learn/web-software-engineering](https://www.coursera.org/learn/web-software-engineering). Accessed 10 Sept. 2024.



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> <b>Choice Based Credit System (CBCS)</b> <b>SEMESTER – II</b>			
<b>OBJECT ORIENTED ANALYSIS AND DESIGN (3:0:0) 3</b> (Effective from the academic year 2024-25)			
Course Code	24MCS25C	CIE Marks	50
Teaching Hours/Week (L: T: P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<b>Course Objectives:</b> This course will enable students: <ol style="list-style-type: none"> <li>1. To provide a brief, hands-on overview of object-oriented concepts and its life cycle for software development.</li> <li>2. To learn for modeling the software and to design them using UML diagrams</li> <li>3. To Explore the problem domain and to identify the objects from the problem specification.</li> <li>4. To Apply design axioms and corollaries for the classes and object relational systems.</li> </ol> <p><b>Preamble:</b> Object-Oriented Analysis and Design (OOAD) is a methodology used to analyze and design software systems by visualizing them as collections of interacting objects, each representing an entity with specific attributes and behaviors. In OOAD, analysis focuses on understanding the problem domain and identifying the objects that will be part of the system. Design then structures these objects into classes, defining their relationships, interactions, and the overall architecture of the system. Key concepts include encapsulation (bundling data and methods), inheritance (reusing code through hierarchical relationships), polymorphism (objects behaving differently based on context), and abstraction (simplifying complex systems by focusing on essential characteristics). OOAD promotes reusability, scalability, and maintainability in software development.</p>			
<b>Module – 1</b>			
<b>INTRODUCTION:</b> An overview – Object basics – Object state and properties – Behaviour – Methods – Messages – Information hiding – Class hierarchy – Relationships – Associations – Aggregations- Identity – Dynamic binding – Persistence – Meta classes – Object oriented system development life cycle. <div style="text-align: right;">(8 hours)</div>			
<b>Module – 2</b>			
<b>METHODOLOGY AND UML:</b> Introduction – Survey – Rumbaugh, Booch, Jacobson methods – Unified modelling language – Static and Dynamic models – Rational Rose Suite - UML diagrams – Static diagram : Class diagram – Use case diagrams – Behaviour Diagram : Interaction diagram – State chart diagram – Activity diagram - Implementation diagram: Component diagram – Deployment diagram – example - Design of online railway reservation system using UML diagrams - Dynamic modelling – Model organization – Extensibility. <div style="text-align: right;">(8 hours)</div>			
<b>Module – 3</b>			
<b>OBJECT ORIENTED ANALYSIS:</b> Identifying Use case – Business object analysis – Use case driven object-oriented analysis – Use case model – Documentation – Classification – Identifying object, relationships, attributes, methods – Super-sub class – A part of relationships Identifying attributes and methods – Object responsibility – construction of class diagram for generalization, aggregation – example – vehicle class. <div style="text-align: right;">(8 hours)</div>			
<b>Module – 4</b>			

**OBJECT ORIENTED DESIGN:** Design process and benchmarking – Axioms – Corollaries – Designing classes – Class visibility – Refining attributes – Methods and protocols – Object storage and object interoperability – Databases – Object relational systems – Designing interface objects – Macro and Micro level processes – The purpose of a view layer interface-OOUI - MVC Architectural Pattern and Design – Designing the system.

(8 hours)

#### **Module – 5**

**Railway domain:** Platform assignment system for the trains in a railway station - Academic domain: Student Marks Analyzing System - ATM system - Stock maintenance - Quiz System - E-mail Client system - Cryptanalysis – Health Care Systems. Use Open-source CASE Tools: StarUML/ UML Graph for the above case studies.

(8 hours)

**Course Outcomes:** The students will be able to:

- CO1: Apply object-oriented life cycle model for a project.
- CO2: Design static and dynamic models using UML diagrams.
- CO3: Apply object-oriented analysis to identify the objects from the problem specification.
- CO4: Apply the open-source CASE tools in various domains.

#### **Textbooks:**

1. The Art of Agile Development (Pragmatic guide to agile software development), James shore, Chromatic, O'Reilly Media, Shroff Publishers & Distributors, 2007.

#### **References:**

1. Ali Bahrami, “Object Oriented System Development”, McGraw Hill International Edition, 2008
2. Brahma Dathan, Sarnath Ramnath, “Object-Oriented Analysis, Design and Implementation”, Universities Press, 2010.

#### **Web Resources:**

1. [http://staruml.sourceforge.net/docs/StarUML\\_5.0\\_Developer\\_Guide.pdf](http://staruml.sourceforge.net/docs/StarUML_5.0_Developer_Guide.pdf)



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> <b>Choice Based Credit System(CBCS)</b> <b>SEMESTER - II</b>			
<b>Program Management (3:0:0) 3</b> (Effective from the academic year 2024-25)			
Course Code	24MCS25D	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<b>Course Objectives:</b> This course will enable students to: <ol style="list-style-type: none"> <li>1. Reflect on key concepts, theories, and methodologies applicable to program management.</li> <li>2. Effectively communicate with stakeholders and lead program teams.</li> <li>3. Align program objectives with organizational strategy and goals.</li> </ol> <p><b>Preamble:</b> This course provides a comprehensive overview of program management, focusing on the strategies and skills required to plan, execute, and monitor multiple projects within a program. Students will learn to manage complex, interrelated projects, ensuring they align with organizational goals. The course also emphasizes leadership, risk management, stakeholder communication, and the use of program management tools and methodologies.</p>			
Module – 1			
<b>Introduction to Program Management:</b> What Is Program and Program Management. Difference between Project and Program Management. The Relationships among Portfolio, Program, and Project Management, and their Roles in Organizational Project Management. The Relationships among Organizational Strategy, Program Management, and Operations Management. Business Value. Role of the Program Manager, Program Sponsor and Program Management Office. Program Management Performance Domains. <div>(8 hours)</div>			
Module – 2			
<b>Program Life Cycle Management:</b> The Program Life Cycle. Program Activities and Integration Management. Program Definition phase activities. Program delivery phase activities. Program closure phase activities. <div>(8 hours)</div>			
Module – 3			
<b>Program Strategy Alignment and Program Benefits Management:</b> Program Business Case. Program Charter. Program Roadmap, Environmental Assessments. Program Risk Management Strategy. Benefits Identification. Benefits Analysis and Planning. Benefits Delivery, Transition and Sustainment. <div>(8 hours)</div>			
Module – 4			
<b>Program Stakeholder Engagement and Communication:</b> Program Stakeholder Identification. Program Stakeholder Analysis. Program Stakeholder Engagement Planning. Program Stakeholder Engagement. Program Stakeholder Communications. <div>(8 hours)</div>			
Module –5			
<b>Program Governance:</b> Program Governance Practices. Program Governance Roles. Program Governance Design and Implementation. <div>(8 hours)</div>			

**Course outcomes:** The students will be able to

CO1: Analyze and manage program risks and opportunities.

CO2: Apply advanced project management tools and techniques within a program management context.

CO3: Develop and implement strategies for managing multiple projects under a single program.

**Question paper pattern:**

- SEE will be conducted for 100 marks.
- Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
- CIE will be announced prior to the commencement of the course.
- 25 marks for the test. An average of three tests will be taken.
- 25 marks for Flexible Assessment Method.

**Textbooks:**

1. Michel Thiry, "Program Management: A Comprehensive Overview", Routledge (Taylor & Francis Group), London.
2. Project Management Institute, "The Standards for Project Management".

**References:**

1. Mark C. Bojeun, "Program Management Leadership: Creating successful team dynamics", CRC Press.
2. Mitchell L. Springer, "Project and Program Management: A Competency-Based Approach", Purdue University, US.
3. Ginger Levin, "Program Management: A Life Cycle Approach", CRC Press.
4. Russ J. Martinelli, Dragan Z. Milosevic, and James M. Waddell, "Program Management for Improved Business Results", John Wiley & Sons.
5. Lowell Dye and James Pennypacker, "Managing Multiple Projects: Planning, Scheduling, and Allocating Resources for Competitive Advantage", Taylor & Francis.

**Web Resources:**

1. <https://www.pmi.org/certifications/program-management-pgmp/exam-prep>
2. [https://www.pmi.org/-/media/pmi/documents/public/pdf/certifications/program-management-professional-handbook-english.pdf?rev=9cebcb9ac324e789723bb82450844d3&sc\\_lang\\_temp=en](https://www.pmi.org/-/media/pmi/documents/public/pdf/certifications/program-management-professional-handbook-english.pdf?rev=9cebcb9ac324e789723bb82450844d3&sc_lang_temp=en)
3. [https://www.pmi.org/-/media/pmi/documents/public/pdf/certifications/pgmp-exam-content-outline.pdf?rev=67166f23d2794860865edbaeff922a59&sc\\_lang\\_temp=en](https://www.pmi.org/-/media/pmi/documents/public/pdf/certifications/pgmp-exam-content-outline.pdf?rev=67166f23d2794860865edbaeff922a59&sc_lang_temp=en)
4. <https://www.pmi.org/pmbok-guide-standards/foundational/pmbok>
5. [https://ccrs.pmi.org/search/courses?kwd=PgMP&\\_gl=1\\*14y642f\\*\\_gcl\\_au\\*MjM4MzgxMzIxLjE3MjU0NDI4OTE](https://ccrs.pmi.org/search/courses?kwd=PgMP&_gl=1*14y642f*_gcl_au*MjM4MzgxMzIxLjE3MjU0NDI4OTE).



<b>M.TECH. COMPUTER SCIENCE AND ENGINEERING</b> <b>Choice Based Credit System (CBCS)</b> <b>SEMESTER – II</b>			
<b>Web Application Development Laboratory (0:1:2) 2</b> (Effective from the academic year 2024-25)			
Course Code	24MCSL26	CIE Marks	50
Teaching Hours/Week (L: T:P)	0:1:2	SEE Marks	50
Total Number of Contact Hours	30	Exam Hours	3
<p><b>Course Objectives:</b> This course will enable students:</p> <ol style="list-style-type: none"> <li>1. To develop the knowledge for the applications in dynamic and responsive user interfaces with Reactjs.</li> <li>2. Learn to implement JSON Web Token (JWT) authentication to secure APIs, ensuring that only authorized users can access specific endpoints.</li> <li>3. To explore building dynamic and responsive user interfaces using React.js, Nodejs with appropriate NOSQL Databases for a capstone project.</li> </ol> <p><b>Preamble:</b> This lab course is designed to provide students with a comprehensive understanding of React.js and Nodejs, a leading JavaScript library for building dynamic and responsive user interfaces. Through hands-on experiments, students will learn core concepts such as component-based architecture, state management with hooks and integrating external APIs. The course will also cover advanced topics like hooks, JSON web Token Authentication. By the end of this course, students will be proficient in React.js, Nodejs ready to design and implement high-performance web applications.</p>			
Description			
<p><b>React.js:</b> Introduction to React.js-Basics of React.js-What is React?-The Virtual DOM-Setting up a React Project (using Create React App)-JSX Syntax-Embedding Expressions in JSX-Components in React.</p> <p><b>XML:</b> Introduction to XML-Understanding XML-XML Syntax and Structure-Differences between XML, HTML, and JSON-Working with XML in Web Application-Parsing XML in JavaScript-XML and React Integration-XML vs. JSON for Data Exchange-XML Schema (XSD)-Defining Structure and Constraints-Validating XML with XSD-XPath and XSLT-XPath Syntax for Navigating XML Documents-Transforming XML with XSLT.</p> <p><b>Node.js:</b> Basics of Node.js-What is Node.js?-Setting up a Node.js Environment-Introduction to npm and Node.js Modules-Building a Basic Web Server with Node.js-Using the HTTP Module-Handling Requests and Responses-Working with the File System in Node.js-Reading and Writing Files-Streaming Data-Asynchronous Programming in Node.js-Callbacks, Promises, and Async/Await-Error Handling in Asynchronous Code.</p>			

PART A: List of Experiments
<ol style="list-style-type: none"> <li>1. Implement a to-do list application using React JS hooks such as useState and useEffect.</li> <li>2. Create a dynamic form/ web page in React JS that includes validation for user inputs..</li> <li>3. Design the Rest API's , GET,POST,PUT,DELETE and JSON Web Token Authentication in Nodejs.</li> <li>4. Create an XML document representing a university database. The document should include: <ul style="list-style-type: none"> <li><b>University Information:</b> <ol style="list-style-type: none"> <li>2. University name</li> <li>3. Address</li> <li>4. List of departments</li> </ol> </li> <li><b>Department Information:</b> <ol style="list-style-type: none"> <li>5. Department name</li> <li>6. List of courses</li> </ol> </li> <li><b>Course Information:</b> <ol style="list-style-type: none"> <li>5. Course name</li> <li>6. Course code</li> <li>7. Instructor</li> <li>8. Credits</li> </ol> </li> </ul> </li> <li>5. Create an XML Schema (XSD) to validate the XML document from Exercise 4. Define the structure and data types for each element and attribute.</li> </ol>
PART-B: Project
<p>Design &amp; Develop a Capstone project for developing a web application using Reactjs, or Nodejs with XML for use cases in Automation Sciences as a domain of choice.</p>
<p><b>Course Outcomes:</b> The students will be able to:</p> <p>CO1: Create dynamic, user-friendly front-end, validation applications using React JS.</p> <p>CO2: Design an integrated payment gateways into Node.js applications, enabling secure and efficient payment processing.</p> <p>CO3: Develop a Web Application for Automation Sciences as a Domain of Choice.</p>
<p><b>Text Book</b></p> <ul style="list-style-type: none"> <li>• Write Modern Web Apps with the MEAN Stack Mongo, Express, AngularJS, and Node.js DEVELOP AND DESIGN Jeff Dickey, 2019.</li> </ul> <p><b>References</b></p> <ul style="list-style-type: none"> <li>• J.D.Meier,Alex Homer, "Web Application Architecture guide, Patterns and Practices", Microsoft 2008.</li> </ul> <p><b>Web Resources</b></p> <ol style="list-style-type: none"> <li>1. <a href="https://www.coursera.org/learn/web-development">https://www.coursera.org/learn/web-development</a></li> </ol>



**M. Tech COMPUTER SCIENCE AND ENGINEERING**  
**Choice Based Credit System (CBCS)**  
**SEMESTER – II**

**Mobile Application Development Laboratory (0:0:2) 1**

(Effective from the academic year 2024-25)

Course Code	24MCS27A	CIE Marks	50
Teaching Hours/Week (L: T:P)	0:0:2	SEE Marks	50
Total Number of Contact Hours	24	Exam Hours	3

**Course Objectives:**

1. Learn and acquire the art of Android Programming.
2. Install and Configure Android studio and its development tools to run the applications.
3. Use User Interface components for android application development.
4. Create Android applications using mobile related server-less databases.
5. Inspect different methods of sharing data using services

**List of Experiments-PART A**

1. Create an app that displays weather information for a given location using data from an external API.
2. Create an app that shows the user's current location on a map, allows searching for places, and marking locations.
3. Develop a basic e-commerce app where users can browse products, add to cart, and place orders.
4. Develop an app that performs actions based on voice commands.
5. Create a custom view that draws basic shapes (circles, rectangles) and handles user touch events.

**PART-B: Project**

1. AI-Powered Chatbot for Customer Support.
2. Health Monitoring System with Wearable Integration.
3. Real-Time Language Translation App.
4. E-learning Platform with AR Integration.
5. Mental Health Support App with AI-Based Chatbot.
6. Expense Tracker with AI-based Budgeting.

**Course Outcomes:** The students will be able to:

CO1: Create, test and debug Android applications by setting up an Android development environment.  
CO2: Implement adaptive, responsive user interfaces that work across a wide range of devices.  
CO3: Infer long-running tasks and background work in Android applications.  
CO4: Demonstrate methods in storing, sharing and retrieving data in Android applications.  
CO5: Infer the role of permissions and security for Android applications.

**Textbooks:**

1. Google Developer Training, "Android Developer Fundamentals Course – Concept Reference", Google Developer Training Team, 2017.

**References:**

1. Erik Hellman, "Android Programming – Pushing the Limits", 1st Edition, Wiley India Pvt Ltd, 2014, ISBN-13: 97 8-8126547197
2. Dawn Griffiths and David Griffiths, "Headfirst Android Development", 1st Edition, O'Reilly SPD Publishers, 2015. ISBN-13: 978-9352131341

3. Bill Phillips, Chris Stewart and Kristin Marsicano, “Android Programming: The Big Nerd Ranch Guide”, 3rd Edition, Big Nerd Ranch Guides, 2017. ISBN-13: 978-0134706054.

**Web Resources:**

1. <https://www.gitbook.com/book/google-developer-training/android-developer-fundamentals/course-concepts/detail>



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**  
**Choice Based Credit System (CBCS)**  
**SEMESTER – II**

**Requirement Analysis and Software Testing Tools Lab (0:0:2) 1**

(Effective from the academic year 2024-25)

Course Code	24MCS27B	CIE Marks	50
Teaching Hours/Week (L: T:P)	0:0:2	SEE Marks	50
Total Number of Contact Hours	24	Exam Hours	3

**Course Objectives:** This course will enable students:

1. To Explore a test suite to evaluate the process metrics involved in testing tools such as Selenium or Cypress.
2. To Design a model for planning, assessing and testing of requirement Analysis for E-bidding or Electric vehicle using UMLGraph/AI Automation tools.
3. Learn To create a Project and exhibit skills to work towards solution of Real-time test scenarios in e-commerce websites/Electric Vehicles.

**Preamble:** Automation software testing is vital for maintaining software quality, efficiency, and reliability. This lab provides practical experience with designing and executing automated test cases using key tools such as Selenium, Cypress and JIRA. Students will learn to develop robust testing strategies and effectively utilize these tools for web testing, unit testing, and integration testing. Additionally, the lab will cover the use of JIRA for managing and tracking bugs, enhancing the overall testing and quality assurance process. By integrating these tools, students will be equipped with the skills needed for real-world software development and quality assurance roles.

**PART A: List of Experiments**

1. Write a Selenium script to automate the login process for a sample website.
2. Design a selenium web driver program to handle pop ups. Go to student login page, click on login button without giving username and password, and handle that pop up message.
3. Write a Python script to manage and track bugs in an E-Commerce Platform application using the JIRA REST API. Include functionalities for creating, updating, and retrieving issues.
4. Demonstrate a requirement specification and Prototype Model analysis of E-Bidding System using a UML Based tool.
5. Demonstrate a requirement specification and Prototype Model for Electric vehicle as a domain on choice using a UML Based tool.

**PART-B: Project**

Create a capstone project on Electric Vehicles to Test plan, Software Requirement Specifications (SRS), Test cases of Executable Test suites using Selenium/ Cypress Tools.

**Course Outcomes:** The students will be able to:

CO1: Analyze how the Selenium and Python scripts are used, web driver program to handle pop ups and manage, track bugs in an E-Commerce Platform using JIRA Tool.

CO2: Design models for planning, analyzing, assessing, SRS and testing automated test cases for E-Bidding and Agile Methodologies for Robotics automation.

CO3: Develop a capstone project with complete Test solutions using Selenium/ Cypress Tools for Automation scenarios in Electric Vehicles.

**Text Books:**

1. Paul C. Jorgensen: Software Testing, A Craftsman's Approach, 3rd Edition, Auerbach Publications, 2008.
2. Aditya P Mathur: Foundations of Software Testing, Pearson Education, 2008.

**References:**

1. Roger S.Pressman, Software engineering- A practitioner's Approach, McGraw-Hill International Edition, 6th edition, 2001.
2. Arlow, Jim, and Ila Neustadt. UML 2 and the unified process: practical object-oriented analysis and design. Pearson Education, 2005.



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**  
**Choice Based Credit System (CBCS)**  
**SEMESTER – II**

**GIT for DEVOPS (0:0:2) 1**

(Effective from the academic year 2024-25)

Course Code	24MCS27C	CIE Marks	50
Teaching Hours/Week (L: T:P)	0:0:2	SEE Marks	50
Total Number of Contact Hours	20	Exam Hours	2

**Course Objectives:** This course will enable students to:

1. Gain a comprehensive understanding of Git fundamentals and its role in version control.
2. Master the use of branching, merging, and conflict resolution in Git.
3. Develop skills to collaborate effectively using remote Git repositories.
4. Learn to implement advanced Git techniques and workflows for efficient code management.

**Preamble:** This course provides an in-depth understanding of Git, a vital version control system in modern software development and DevOps. Students will learn essential Git operations, branching and merging strategies, remote repository management, and advanced Git techniques. By mastering these skills, students will be equipped to efficiently manage code changes, collaborate on projects, and maintain organized and robust codebases.

**PART A: List of Experiments**

**1. Setting Up and Basic Commands.**

- a. Initialize a new Git repository in a directory. Create multiple files, add them to the staging area, and commit the changes with an appropriate commit message.
- b. Remove a file from the staging area without deleting the file itself.

**2. Creating and Managing Branches**

- a. Create a new branch named "bug-fix" and switch to it. Make a few changes and commit them. Then, merge these changes back into the "master" branch without creating a merge commit.
- b. Rename an existing branch from "development" to "dev".

**3. Stashing Changes**

- a. Create several uncommitted changes in your working directory. Stash the changes with a custom stash message, switch to another branch, make some changes, and commit them. Then, return to the original branch and apply the stashed changes.

**4. Collaboration and Remote Repositories**

- a. Add a new remote repository named "upstream" and fetch the changes from this remote. Rebase your current branch onto the "upstream/master" branch.
- b. Push your local "feature" branch to a remote repository and set the upstream branch for tracking future changes.

**5. Handling Merge Conflicts**

- a. Simulate a merge conflict by making different changes to the same file in two different branches. Attempt to merge these branches and resolve the conflict using

the Git command line.

## 6. Git Tags and Releases

- a. Create an annotated Git tag named "release-2.0" with a message describing the release details. List all tags in the repository.

## 7. Analyzing and Changing Git History

- a. Write the command to show the commit graph along with the author and commit messages.
- b. Use git filter-branch or git rebase to modify the author of multiple commits across different branches.
- c. Remove a specific file from the history of a repository and from all commits.

## 8. Git Worktrees

- a. Create a separate worktree for an existing branch to work on it independently without switching the branches in your main repository.

## 9. Advanced Git Operations

- a. Use the interactive rebase feature to squash several commits into a single commit on the "master" branch.
- b. Write the command to revert multiple consecutive commits without using git revert multiple times.

## 10. Git Hooks and Git Bisect

- a. Write a pre-commit hook that checks for a specific pattern in the commit message and rejects the commit if it doesn't match.
- b. Use git bisect to find the commit that introduced a bug, given that you know a range of commits where the bug first appeared.

**Course outcomes:** The students will be able to

CO1: Analyze basic Git operations to handle local repositories.

CO2: Demonstrate branching and merging strategies, including conflict resolution in Git repositories.

CO3: Implement remote repositories, including pushing, pulling, and handling pull requests.

CO4: Apply advanced Git commands and workflows to maintain and organize complex codebases.

### Textbooks:

1. Pro Git second edition by Scott Chacon and Ben Straub-2014
2. Loeliger, Jon, and Matthew McCullough. Version Control with Git: Powerful Tools and Techniques for Collaborative Software Development. 2nd ed., O'Reilly Media, 2012.
3. Chacon, Scott, and Ben Straub. Pro Git. 2nd ed., Apress, 2014.

### References:

1. Swicegood, Travis. Pragmatic Version Control Using Git. Pragmatic Bookshelf, 2008.
2. Bell, Brent Laster. Professional Git. John Wiley & Sons, 2016.
3. Boulton, Mike. Git for Teams: A User-Centered Approach to Creating Efficient Workflows in Git. O'Reilly Media, 2016.

### Web Resources:

1. Davis, Neal. Version Control with Git. Coursera, LearnQuest. Accessed 30 Aug. 2024.
2. Willis, Morgan. DevOps on AWS: Code, Build, and Test. Coursera, Amazon Web Services. Accessed 30 Aug. 2024.
3. Park, Sangkyu. Continuous Integration and Continuous Delivery (CI/CD). Coursera, University of California, Irvine. Accessed 30 Aug. 2024.



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**  
**Choice Based Credit System (CBCS)**  
**SEMESTER – II**

**Introduction to Kafka (0:0:2) 1**  
(Effective from the academic year 2024 -25)

Course Code	24MCS27D	CIE Marks	50
Teaching Hours/Week (L:T:P:S)	0:0:2	SEE Marks	50
Total Number of Contact Hours	20	Exam Hours	3 Hours

**Course Objectives:** This course will enable students to:

1. Identify and describe the core components of Apache Kafka, including topics, producers, consumers, and brokers.
2. Configure and deploy a Kafka cluster, including setting up producers and consumers to handle a basic data stream.
3. Analyze the performance of a Kafka cluster under different load conditions and optimize configuration settings for improved throughput.

**Preamble:** Apache Kafka is a powerful distributed streaming platform that enables real-time data processing and integration across diverse systems. Kafka typically covers its architecture, including brokers, topics, partitions, and ZooKeeper, and guides participants through setting up and configuring Kafka clusters. It emphasizes practical skills such as producing and consuming messages, developing Kafka Streams applications, and leveraging Kafka Connect for integrations. Advanced topics include implementing exactly-once semantics, securing Kafka deployments, monitoring cluster performance, and designing robust data pipelines.

**Descriptions**

Design, develop, and implement the specified programs as given in the list given below Apache Kafka in Windows/Linux Environment.

**Prerequisites:** Set up a basic Kafka environment with ZooKeeper and Kafka brokers.

**PART A: List of Experiments**

1. Develop simple Kafka producer and consumer applications in Java.
2. Create a simple Kafka Streams application to process streaming data.
3. Build a more complex Kafka Streams application with stateful operations.
4. Use Kafka Streams' interactive queries to query state stores. Modify the Kafka Streams application to expose interactive queries.
5. Develop producer and consumer applications with various delivery guarantees.

**PART-B: Project**

Build a distributed real-time event processing pipeline for an e-commerce platform to track user activity such as page views and purchases.

**Course Outcomes:** At the end of the course the student will be able to:

CO1: Build scalable, real-time data processing solutions using Kafka.

CO2: List and define the fundamental components of Apache Kafka, such as topics, partitions, producers, consumers, and brokers.

CO3: Implement a Kafka cluster, including the creation and management of topics, and demonstrate data flow between producers and consumers.

CO4: Evaluate the performance of a Kafka cluster under varying loads and analyze the impact of different configuration settings on throughput and latency.

### **Textbooks**

1. Narkhede, Neha, Gwen Shapira, and Todd Palino. Kafka: The Definitive Guide: Real-Time Data and Stream Processing at Scale. O'Reilly Media, 2017.
2. Rajput, Dinesh. Mastering Apache Kafka: Self-Learning Guide. Packt Publishing, 2021.
3. Kleppmann, Martin. Designing Data-Intensive Applications: The Big Ideas Behind Reliable, Scalable, and Maintainable Systems. O'Reilly Media, 2017

### **Reference Books**

1. Scott, Dylan, Viktor Gamov, and Dave Klein. Kafka in Action. Manning Publications, 2022.
2. Bejeck, Bill. Kafka Streams in Action: Real-Time Apps and Microservices with the Kafka Streams API. Manning Publications, 2018.

### **Web Resources**

1. The Complete Apache Kafka Course. Coursera, Confluent, <https://www.coursera.org/specializations/complete-apache-kafka-course>. Accessed 28 Aug. 2024.



**M.TECH. COMPUTER SCIENCE AND ENGINEERING**  
**Choice Based Credit System (CBCS)**  
**SEMESTER – II**

**Kubernetes and Docker Laboratory (0:0:2) 2**  
(Effective from the academic year 2024-25)

Course Code	24MCS27E	CIE Marks	50
Teaching Hours/Week (L: T:P)	0:0:2	SEE Marks	50
Total Number of Contact Hours	20	Exam Hours	2

**Course Objectives:** This course will enable students to:

1. Apply Docker commands to build, manage, and run containerized applications, including multi-container setups using Docker Compose.
2. Deploy Kubernetes applications by defining Pods, Deployments, and Services to orchestrate multi-component applications.
3. Integrate persistent storage and networking solutions in Kubernetes for stateful applications and expose services externally for access.
4. Develop a multi-tier application on Kubernetes using best practices for containerization, service management, and application scaling.

**Preamble:** The Docker and Kubernetes Lab course is designed to provide students with practical, hands-on experience in containerization and orchestration technologies, which are essential for building, deploying, and managing modern cloud-native applications. The course begins by introducing Docker, a powerful platform for developing, shipping, and running applications in containers, enabling efficient and consistent environments. The course then transitions into Kubernetes, the leading orchestration platform for automating the deployment, scaling, and management of containerized applications. By the end of the course, students will be well-equipped with the skills required to work in DevOps environments and deploy, manage, and scale applications in cloud-native architectures using Docker and Kubernetes.

**PART A: List of Experiments**

1. Install and Set Up Docker: Install Docker on Linux/Windows, verify the installation using `docker --version`, and run a test container with `docker run hello-world`.
2. Working with Docker Containers: Execute Docker commands to manage containers by pulling an image from DockerHub, running it in both interactive and detached modes, and stopping, removing, and restarting containers.
3. Docker Compose for Multi-Container Applications: Use Docker Compose to manage multi-container applications by creating a `docker-compose.yml` file to run a web server (e.g., Nginx) and a database (e.g., MySQL), and manage the application with Docker Compose commands for starting, stopping, and scaling.
4. Setting Up Minikube: Install and configure a single-node Kubernetes cluster with Minikube by installing Minikube and `kubectl`, starting Minikube, verifying the cluster status using `kubectl`, and running a test pod with `kubectl run nginx --image=nginx`.

5. Managing Kubernetes Deployments and Services: Create and manage a Kubernetes deployment by writing a deployment YAML file to run multiple replicas of an application (e.g., Nginx), scale it to 3 replicas, and create a service to expose the deployment for access via a browser or curl.

## **PART-B: Project**

### **Deploying a Multi-Tier Application on Kubernetes**

**Objective:** Deploy a multi-tier web application using Kubernetes with persistent storage, services, and scaling.

**Tasks:**

- Containerize a multi-component application (e.g., web front-end, backend, and database).
- Create Kubernetes YAML files for each component (Pods, Deployments, Services).
- Set up persistent storage for the database using PersistentVolumes and PersistentVolumeClaims.
- Deploy the application and test its functionality.
- Implement Horizontal Pod Autoscaling (HPA) based on CPU usage.

**Course Outcomes:** The students will be able to:

CO1: Apply Docker commands to build and manage containerized applications, including the creation and orchestration of multi-container environments using Docker Compose.

CO2: Deploy Kubernetes applications with proficiency, including scaling deployments and exposing services, to ensure effective orchestration and high availability.

CO3: Implement persistent storage and configure networking within Kubernetes to support both stateful and stateless applications, ensuring reliable data management and connectivity.

CO4: Design a multi-tier application on Kubernetes, applying best practices for containerization, scaling, and service management to deliver robust, cloud-native solutions.

### **Text Books:**

1. Nigel Poulton, “Docker Deep Dive: Zero to Docker in a single book”, Released October 2020, Packt Publishing.

### **References:**

1. Brendan Burns, Joe Beda, and Kelsey Hightower, “Kubernetes Up & Running: Dive into The Future of Infrastructure”, Released October 2019, O'Reilly Media, Inc.

### **Web Resources:**

1. <https://www.docker.com/blog/docker-and-kubernetes/>





# BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(Autonomous Institution Affiliated to VTU, Belagavi)

Scheme of Teaching and Examinations – 2024 Scheme

Outcome-Based Education (OBE) and Choice Based Credit System (CBCS)

(Effective from the academic year 2024 - 25 onwards)

## I Semester M Tech Cyber Security

Sl. No.	Course Category	Course Code	Course Name	Teaching Department	Credits Distribution				Examination				Contact Hours/week
					L	T	P	Total	CIE Marks	SEE Marks	Total Marks	SEE Duration (H)	
1	PCC	24MCR11	Foundation of Mathematics for Cyber Security	Math's	3	0	0	3	50	50	100	3	3
2	IPCC	24MCR12	Advanced Data Structures and Algorithms	ISE	3	0	2	4	50	50	100	3	4
3	PCC	24MCR13	Cryptography and Network Security	ISE	3	2	0	4	50	50	100	3	4
4	IPCC	24MCR14	Cyber Security Essentials	ISE	3	0	2	4	50	50	100	3	4
5	PCC	24MCR15	Ethics and Privacy in Social Networks	ISE	3	0	0	3	50	50	100	3	3
6	PCCL	24MCRL16	LINUX Essentials for Cyber Security Lab	ISE	0	2	2	2	50	50	100	3	4
7	NCMC	24AUD17	Research Methodology and IPR (MOOCs – Online)	ISE	Classes and evaluation procedures are as per the policy of the online course providers						PP	---	---
TOTAL					15	2	6	20	300	300	600		

- Non Credit Mandatory Courses Suggested by BOS (ONLINE courses):** Audit Courses: These are prerequisite courses suggested by the Interim Board of Studies – M.Tech Cyber Security. All activities should enhance student's abilities to employment and/or self-employment opportunities, management skills, Statistical analysis, fiscal expertise, etc. Students and the course instructor/s are to be involved either individually or in groups to interact together to enhance the learning and application skills of the study they have undertaken. The students with the help of the course teacher can take up relevant technical –activities that will enhance their skills. The prepared report shall be evaluated for CIE marks.  
 Research Methodology and IPR (MRMI19) None Credit Mandatory Course (NCMC) if students have not studied this course in their undergraduate program then he /she has to take this course at <http://online.vtu.ac.in> and to qualify for this course is compulsory before Semester End Examination.

# **SEMESTER – I**



<b>M.TECH Cyber Security</b> Choice Based Credit System (CBCS) SEMESTER - I			
<b>Foundation of Mathematics for Cyber Security (3:0:0) 3</b> (Effective from the academic year 2024 - 25)			
Course Code	24MCR11	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<b>Course Objectives:</b>  This course will enable students to: <ol style="list-style-type: none"> <li>1. Provide the mathematical background required for cyber security.</li> <li>2. Familiarize the basic building blocks of important cyber security applications</li> <li>3. Discuss the theoretical aspects of number theory</li> <li>4. Study the security model and analyze them before being used in many commercial, industrial as well as web applications.</li> </ol>			
Module – 1			
<b>Preamble:</b> Significance and Scope of the course, Importance of the course in the societal, political, and economic growth of the nation, Impact of the course on societal and ethical issues, and career perspective.  <b>Algebraic Structures:</b> Groups – Cyclic groups, Cosets, Modulo groups - Primitive roots - Discrete logarithms. Rings – Sub rings, ideals, and quotient rings, Integral domains. Fields – Finite fields – GF (pn ), GF(2n ) - Classification - Structure of finite fields. Lattice, Lattice as Algebraic system, sub lattices, some special lattices. (8 hours)  <b>(RBT Levels: L1, L2 and L3)</b>			
Module – 2			
<b>Introduction:</b> Understanding of Vector spaces, graph theory, Statistical models & their applications in Engineering, Economics and Statistics.  <b>Linear Algebra-I:</b> Vector Spaces: Vector spaces; subspaces Linearly independent and dependent vectors, Basis and dimension, coordinate vectors-Illustrative examples. Linear transformations, Representation of transformations by matrices (8 hours)  <b>(RBT Levels: L1, L2 and L3)</b>			
Module – 3			
<b>Linear Algebra-II:</b> Computation of Eigen values and Eigen vectors of real symmetric matrices-Jacobi and Given's method. Orthogonal vectors and orthogonal basis. Gram-Schmidt orthogonalization process. QR decomposition, singular value decomposition. (8 hours)  <b>(RBT Levels: L1, L2 and L3)</b>			

<b>Module – 4</b>
<p><b>Number Theory and Algebraic Geometry:</b> Elliptic curves, basic facts, elliptic curve cryptosystems, elliptic curve primality test – elliptic curve factorization. (8 hours)</p> <p><b>(RBT Levels: L1, L2 and L3)</b></p>
<b>Module – 5</b>
<p><b>Coding Theory:</b> Introduction - Basic concepts: codes, minimum distance, the equivalence of codes, Linear codes - Linear codes - Generator matrices and parity-check matrices - Syndrome decoding – Hamming codes – Hadamard codes - Goppa codes. (8 hours)</p> <p><b>(RBT Levels: L1, L2 and L3)</b></p>
<p><b>Course outcomes:</b></p> <p>The students will be able to</p> <p>CO1: Understand basic concepts of various algebraic structures and theorems which are used for designing security algorithms.</p> <p>CO2: Linearly transform the system from one dimension to another and represent the pertinent linear transformation in matrix form.</p> <p>CO3: Apply techniques of constrained optimization and singular value decomposition to problems arising in power/control system analysis, signals, and systems.</p> <p>CO4: Identify the approach to public-key cryptography based on the algebraic structure of elliptic curves over finite fields.</p> <p>CO5: Understand coding theory which will be useful for data compression and maintaining confidentiality.</p>
<p><b>Question paper pattern:</b></p> <ul style="list-style-type: none"> <li>● SEE will be conducted for 100 marks.</li> <li>● Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>● CIE will be announced prior to the commencement of the course.</li> <li>● 25 marks for test. Average of three tests will be taken.</li> <li>● 25 marks for Flexible Assessment Method.</li> </ul>
<p><b>Textbooks:</b></p> <ol style="list-style-type: none"> <li>1. David C.Lay, Steven R.Lay and J.J.McDonald, “Linear Algebra and its Applications”, 5th Edition, Pearson Education Ltd., 2015.</li> <li>2. Neal Coblitz, “A Course in Number Theory and Cryptography”, Springer Verlag, Second edition.</li> </ol> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. C.L. Liu, ‘Elements of Discrete Mathematics’, McGraw Hill, 2008.</li> <li>2. Douglas Stinson, ‘Cryptography – Theory and Practice’, CRC Press, 2006.</li> <li>3. Joseph A. Gallian, “Contemporary Abstract Algebra”, Narosa, 1998.</li> <li>4. D. S. Malik, J. Mordeson, M. K. Sen, “Fundamentals of Abstract Algebra, Tata McGraw Hill.</li> <li>5. P. K. Saikia, “Linear Algebra”, Pearson Education.</li> <li>6. Niven, H.S. Zuckerman and H. L. Montgomery, “An Introduction to the Theory of Numbers”, John Wiley and Sons,.</li> <li>7. Leigh Metcalf, William Casey, “Cybersecurity and Applied Mathematics”, Syngress Publisher.</li> </ol>



<b>M.Tech CYBER SECURITY</b> Choice Based Credit System (CBCS) SEMESTER – I			
<b>Advanced Data Structures and Algorithms (3:0:2) 4</b> (Effective from the academic year 2024 - 25)			
Course Code	24MCR12	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:2	SEE Marks	50
Total Number of Contact Hours	50	Exam Hours	3
<b>Course Objectives:</b> This course will enable students to: <ol style="list-style-type: none"> <li>1. Explain fundamentals of advanced data structures and their applications essential for programming/problem Solving.</li> <li>2. Utilize an appropriate data structure like Stack, Queues, Lists, Trees and Graphs to solve a given</li> <li>3. Demonstrate sorting and searching algorithms.</li> </ol>			
Module-1: Introduction			
The Role of Algorithms in Computing, Overview and Importance of Data Structures in Cybersecurity, Relationship between Data Structures and Security, Analyzing algorithms, designing algorithms, Asymptotic notation, Standard notations and common functions, Elementary Data Structures, Stacks and queues, Linked lists, Implementing pointers and objects. <b>T1: Chapter 1-3, 10 R1:Chapter 1.1 ,1.2 (8Hours)</b>			
Module-2: Trees			
Binary Search Trees, What is a binary search tree, Querying a binary search tree, Insertion and deletion, Randomly built binary search trees, Red-Black Trees, Properties of red-black trees, Rotations, Insertion, Deletion, Balanced Trees, Definition of B-trees, Basic operations on B-trees, Deleting a key from a B-tree- AVL Trees-single rotation and double rotation. <b>Chapters 12,13, 18 R2: Chap 4.4 (8 Hours)</b>			
Module-3 Hashing and Heaps			
Hash Tables, Direct-address tables, Hash functions, Open addressing, Perfect hashing. Heaps, Maintaining the heap property, building a heap, the heapsort algorithm, Priority queues, Merkle Tree-creation -Merkle Tree for Data Verification-Role of Merkle Trees in Blockchains and Bitcoin, Trie -operations on Trie <b>Chapters 11, 6,19, R4, R7 (8 Hours)</b>			
Module-4 Graph Algorithms			
Representations of graphs, Breadth-first search, Depth-first search, Minimum Spanning Trees algorithms,, The Bellman-Ford algorithm, All Pairs Shortest Paths, Floyd-Warshall algorithm, Johnson’s algorithm for sparse graphs, Maximum Flow, Flow networks, The Ford-Fulkerson method.Attack Graphs-use Attack graphs- How Enterprises Use Attack Graphs to Protect Critical Assets <b>Chapters, 22.1 – 22.3, 23.1 – 23.2, 24.1 – 24.3, 25, 26.1 – 26.2 , R5 (8 Hours)</b>			
Module-5 Number-Theoretic Algorithms and case studies			
Number-Theoretic Algorithms, Elementary number-theoretic notions, Greatest common divisor, Modular arithmetic, Solving modular linear equations, The Chinese remainder theorem, Powers of an element,			

<p>The RSA public-key cryptosystem, Case Studies and Practical Applications - Binary Search Trees for Encryption Key Management using Binary Trees, Network topology using Graphs, Trie data structure for IP Lookup.</p> <p><b>Chapters 31.1 – 31.7, R6, R7, R8</b></p> <p style="text-align: right;"><b>(8 Hours)</b></p>
<p><b>Course Outcomes:</b></p> <p>The students will be able to:</p> <ol style="list-style-type: none"> <li><b>CO1:</b> Illustrate different types of linear data structures, its operations and algorithms to solve a given problem.</li> <li><b>CO2:</b> Illustrate different types of nonlinear data structures, its operations and algorithms to solve a given problem.</li> <li><b>CO3:</b> Examine any given problem, recommend and implement solutions using suitable data structures.</li> <li><b>CO4:</b> Design and implement applications using suitable data structures.</li> </ol>
<p><b>Question paper pattern:</b></p> <ul style="list-style-type: none"> <li>• <b>SEE</b> will be conducted for 100 marks.</li> <li>• Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>• <b>CIE</b> will be announced prior to the commencement of the course.</li> <li>• 25 marks for the test. Average of three tests will be taken.</li> <li>• 25 marks for Flexible Assessment Method.</li> </ul>
<p><b>Textbooks:</b></p> <p>1. Thomas H. Cormen, Charles, E. Leiserson, Ronal L. Rivest, Clifford Stein, Introduction to Algorithms, The MIT Press, 4th Edition, 2022.</p> <p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. S.R.Jena, Dr.Dileep kumar Cyber security using Data structures,Notion Press, First Edition , 2024.</li> <li>2. Mark Allen Weiss, Data structures and Algorithm Analysis, Pearson, 4<sup>th</sup> Edition, 2014</li> <li>3. Gilberg &amp; Forouzan, Data Structures: A Pseudo code approach with C, Cengage Learning, 2nd edition, 2014.</li> <li>4. <a href="https://www.techopedia.com/definition/32919/merkle-tree">https://www.techopedia.com/definition/32919/merkle-tree</a>.</li> <li>5. <a href="https://xmcyber.com/glossary/what-are-attack-graphs/">https://xmcyber.com/glossary/what-are-attack-graphs/</a></li> <li>6. <a href="https://developer.okta.com/blog/2019/07/29/hashing-techniques-for-password-storage">https://developer.okta.com/blog/2019/07/29/hashing-techniques-for-password-storage</a></li> <li>7. <a href="https://www.ijraset.com/best-journal/study-of-various-network-topologies-using-graph-theory">https://www.ijraset.com/best-journal/study-of-various-network-topologies-using-graph-theory</a></li> <li>8. <a href="https://www.geeksforgeeks.org/trie-insert-and-search/">https://www.geeksforgeeks.org/trie-insert-and-search/</a></li> </ol>
<p><b>List of Experiments - Part A</b></p>
<ol style="list-style-type: none"> <li>1) Design and develop a menu driven Program for implementing multiple stacks using arrays. Include the conditions to check for stack overflow, stack underflow and stack empty conditions in the program.</li> <li>2) Design and develop a menu driven Program to implement insert, delete and traverse operations in a red-black tree. Ensure that the properties of the red-black tree are not violated after insert and delete operation.</li> <li>3) Design and Develop a program to implement AVL Trees i) single Rotation ii) Double Rotation</li> <li>4) Implement a function that takes a password and a salt as input and returns the hashed password</li> </ol>



using a secure hash function . Ensure that you use proper hashing techniques to enhance password security.

5) Implement IP Address Lookup and Routing using Trie Data structure.

1. 6)Design and Develop a program to find the shortest path between all pairs of vertices in an edge weighted directed graph using johnson's algorithm

2. AAT: Literature Review on Advanced Data structures

<div>M.TECH CYBER SECURITY</div> <div>Choice Based Credit System (CBCS)</div> <div>SEMESTER – I</div>			
<div>Cryptography and Network Security (4:0:0) 4</div> <div>(Effective from the academic year 2024-25)</div>			
Course Code	24MCR13	CIE Marks	50
Teaching Hours/Week (L: T:P)	4:0:0	SEE Marks	50
Total Number of Contact Hours	50	Exam Hours	3
<div>Course Objectives:</div> <div>This course will enable students to:</div> <div><div>1. Explain standard algorithms used to provide confidentiality, integrity and authenticity.</div><div>2. Distinguish key distribution and management schemes.</div><div>3. Apply encryption techniques to secure data in transit across data networks</div><div>4. Implement security applications in the field of Information technology.</div></div>			
<div>Preamble: Embarking on the study of "Cryptography and Network Security" delves into the intricate world of securing digital communication and information. This field explores advanced cryptographic algorithms and protocols, essential for safeguarding sensitive data in an increasingly interconnected world. Its significance lies in thwarting cyber threats and ensuring privacy and integrity in digital transactions and communications. As cybersecurity concerns escalate, expertise in advanced cryptography becomes pivotal for protecting critical infrastructure and preserving digital trust. Pursuing this specialization promises a deep dive into the forefront of cryptographic techniques, offering opportunities to innovate and defend against evolving cyber threats.</div>			
<div>Module – 1</div> <div>Computer and Network Security: Computer Security Concepts, The OSI Security Architecture, Security Attacks, Security Services, Security Mechanisms, Fundamental Security Design Principles, Attack Surfaces and Attack Trees, A Model for Network Security, and Standards.Symmetric Ciphers -Classical encryption techniques : Symmetric Cipher Model , Substitution Techniques , Transposition Techniques, Rotor Machines, Stenography.</div> <div>(Chapter 1 &amp; 3)</div> <div>(8 Hours)</div>			
<div>Module – 2</div> <div>Block Ciphers and the Data Encryption Standard: Traditional Block Cipher Structure, The Data Encryption Standard, A DES Example, The Strength of DES, Block cipher design principles and modes of operation. Advanced Encryption Standard: Finite Field Arithmetic, AES Structure, AES Transformation Functions, AES Key Expansion, An AES Example and AES Implementation. Asymmetric Ciphers: Public-Key Cryptography and RSA: Principles of Public-Key Cryptosystems, The RSA Algorithm and Diffie-Hellman Key Exchange, Elliptic Curve Arithmetic, Elliptic Curve Cryptography.</div> <div>(Topics from Chapter 4, 6, 9 &amp; 10.1 - 10.4 )</div> <div>(8 Hours)</div>			



<b>Module – 3</b>	
<p><b>Cryptographic Data Integrity Algorithms- Cryptographic Hash Functions</b> : Applications of Cryptographic Hash Functions Two Simple Hash Functions, Requirements and Security, Hash Functions Based on Cipher Block Chaining, Secure Hash Algorithm (SHA) , &amp; SHA-3. <b>Message Authentication Codes</b>: Message Authentication Requirements, Message Authentication Functions, Requirements for Message Authentication Codes, Security of MACs, MACs Based on Hash Functions: HMAC,Digital Signatures.</p> <p>(Topics from Chapter 11, 12, &amp; 13.1)</p>	(8 Hours)
<b>Module – 4</b>	
<p><b>Mutual Trust: Key Management and Distribution</b>: Symmetric Key Distribution Using Symmetric Encryption, Symmetric Key Distribution Using Asymmetric Encryption, Distribution of Public Keys, X.509 Certificates, public-Key Infrastructure. <b>User Authentication</b>: Remote User-Authentication Principles, Remote User-authentication Using Symmetric Encryption, Kerberos.</p> <p><b>Network Access Control and Cloud Security</b> : Network Access Control, Extensible Authentication Protocol, IEEE 802.1X Port-Based Network Access Control, Cloud Computing , Cloud Security Risks and Countermeasures , Data Protection in the Cloud, Cloud Security as a Service, Addressing Cloud Computing Security Concerns.</p> <p>(Topics from Chapter 14, 15.1-15.3, &amp; 16)</p>	(8 Hours)
<b>Module – 5</b>	
<p><b>Transport Layer Security</b>: HTTPS, Secure Shell (SSH), Wireless Security, Mobile Device Security, IEEE 802.11 Wireless LAN Overview, IEEE 802.11i Wireless LAN Security. <b>Electronic Mail Security</b>: internet Mail Architecture, Email Formats, Email Threats and Comprehensive Email Security , S/MIME, Pretty Good Privacy, DNSSEC, DNS-Based Authentication of Named Entities.</p> <p><b>IP Security Overview</b>: IP Security Policy, Encapsulating Security Payload, Combining Security Associations, Internet Key Exchange, Cryptographic Suite.</p> <p><b>Recap/Summary</b> of the course.</p> <p>(Topics from Chapter 17, 18, &amp; 19)</p>	(8 Hours)
<p><b>Course Outcomes</b>: The students will be able to:</p> <p>CO1: Apply the OSI security architecture, number theory and cipher techniques for the given problem.</p> <p>CO2: Compare the performance of various cryptographic data integrity techniques for the identified problem.</p> <p>CO3: Analyze the vulnerabilities in any computing system and design a cryptographic solution for the given problem/ case study</p> <p>CO4: Examine the working of the techniques used for Mutual trust and security on internet and compare their performance.</p>	
<p><b>Question paper pattern:</b></p> <ul style="list-style-type: none"> <li>• <b>SEE</b> will be conducted for 100 marks.</li> <li>• Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>• <b>CIE</b> will be announced prior to the commencement of the course.</li> <li>• 25 marks for test. Average of three tests will be taken.</li> <li>• 25 marks for Flexible Assessment Method.</li> </ul>	

**Textbooks:**

1. William Stallings, Cryptography and Network Security Principles and Practice, 7<sup>th</sup> edition, Pearson, 2019.

**References:**

1. Damien Vergnaud and Michel Abdalla, Applied Cryptography and Network Security, 7th International Conference, ACNS 2009, Paris-Rocquencourt, France, June 2-5, 2009, Proceedings.
2. B. Schneier, "Applied Cryptography: Protocols, Algorithms, and Source Code in C", 2<sup>nd</sup> Edition, John Wiley & Sons, 1995.
3. Mihir Bellare and Phillip Rogaway, "Introduction to Modern Cryptography", 2005.
4. Alfred J. Menezes, Paul C. van Oorschot and Scott A. Vanstone, "Handbook of Applied Cryptography" CRC Press.
5. Neal Koblitz, A Course in Number Theory and Cryptology, Springer 1987.

**Web Resources:**

1. "Cryptography" by Stanford University: Stanford University. "Cryptography." Coursera, [www.coursera.org/learn/crypto](http://www.coursera.org/learn/crypto).
2. "Applied Cryptography" by the University of Colorado System: University of Colorado System. "Applied Cryptography." Coursera, [www.coursera.org/learn/applied-cryptography](http://www.coursera.org/learn/applied-cryptography).
3. "Introduction to Cryptography" by the University of London: University of London. "Introduction to Cryptography." Coursera, [www.coursera.org/learn/crypto-introduction](http://www.coursera.org/learn/crypto-introduction).



<p align="center"><b>M.Tech. CYBER SECURITY</b> Choice Based Credit System (CBCS) SEMESTER – I</p>			
<p align="center"><b>Cyber Security Essentials(3:0:2) 4</b> (Effective from the academic year 2024-25)</p>			
Course Code	24MCR14	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:0:2	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<p><b>Course Objectives:</b> This course will enable students to:</p> <ol style="list-style-type: none"> <li>1. To summarize the concepts of cyber security, forensics and its applications in different context.</li> <li>2. To investigate incident and areas affected due to cybercrime.</li> <li>3. To illustrate tools used in cyber security, forensic</li> <li>4. To infer legal perspectives in cyber security</li> <li>5. To apply the policies, security standards, and IPR issues on a cybercrime incident.</li> </ol> <p><b>Preamble:</b> The course aims to provide an overview of cyber law, security, tools, and approaches to secure resources and manage intellectual property for enhancing the competitiveness for organizations. Upon completion of this course, students should be able to accomplish the course outcomes defined. The cyber security and forensics have direct impact on the security systems, society, financial models and affecting the GDP.</p>			
<p align="center"><b>Module – 1</b></p>			
<p>Legacy cybersecurity systems, Transformations in cybersecurity, Advancements in security technology to security 2.0, How ML and AI will play a larger role in cybersecurity, Learning cybersecurity Technologies Mobile security ,advanced data security, cloud security ,Modern day regulations, Incidence response and forensic ,Enterprise security at scale ,penetration testing ,DevSecOps, IoT Security, User behavior analytics(UBA),Endpoint detection and response (EDR).</p> <p align="right">(8 Hours)</p>			
<p align="center"><b>Module – 2</b></p>			
<p>Attacker Mindset ,The category of hackers, The traits of hackers, Social Characteristics of hackers, How hackers think(Motivators),What can be learned from the psychology of hackers ?Understanding Reactive ,Proactive and Operational Security Proactive cyber defense ,Reactive cybersecurity ,Overview of operational security , The significance of the three security pillars ,Security operations and continuous monitoring, Digital forensics and real-time incident response with SIEM.</p> <p align="right">(8 Hours)</p>			
<p align="center"><b>Module – 3</b></p>			
<p>Understanding Access-Control and Monitoring Systems: A Quick Primer on Infrastructure Security, Access Control, Authentication Systems, Remote-Access Monitoring, Understanding Intrusion Detection and Reporting Systems: Intrusion-Detection.</p> <p>(Chapter 2 &amp; 4 from Book2)</p> <p align="right">(8 Hours)</p>			

<b>Module – 4</b>	
Understanding Reactive, Proactive, and Operational Security: Proactive cyber defense, Implementing proactive security, Reactive cybersecurity, Overview of operational security, Security operations and continuous monitoring, Digital forensics and real-time incident response with SIEM	
(Chapters 6 from Book1)	(8 Hours)
<b>Module – 5</b>	
Web Application Security: This Site Is Secure, The Core Security Problem: Users Can Submit Arbitrary Input, Key Problem Factors, The New Security Perimeter, Core Defense Mechanisms: Handling User Access, Handling User Input, Handling Attackers.	
(Chapters 1 & 2 from Book3)	(8 Hours)
<b>Course Outcomes:</b> The students will be able to: CO1: Identify and analyse the cyber security risks due to different cyber-crimes and examine in the legal perspective CO2: Illustrate the use of Cyber security and of cyber-forensics tools in investigating the given cybercrime. CO3: Analyse legal issues and socio-economic impact due to cybercrime and forensics investigation approach CO4: Examine relevant network defense / web application tool to solve given cyber security problem/ case study CO5: Design the security policy for an organization in line with IT ACT 2000 and based on ISO standard,	
<b>Question paper pattern:</b> <ul style="list-style-type: none"> <li>• <b>SEE</b> will be conducted for 100 marks.</li> <li>• Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.</li> <li>• <b>CIE</b> will be announced prior to the commencement of the course.</li> <li>• 25 marks for test. Average of three tests will be taken.</li> <li>• 25 marks for Flexible Assessment Method.</li> </ul>	
<b>Textbooks:</b> <ol style="list-style-type: none"> <li>1. Cybersecurity: The Beginner's Guide by Dr. Erdal Ozkaya 1st Edition 2019</li> <li>2. Cybersecurity Essentials by Charles J. Brooks, Christopher Grow, Philip Craig, Donald Short 2018.</li> <li>3. The Web Application Hacker's Handbook Finding and Exploiting Security Flaws by Dafydd Stuttard Marcus Pinto 2nd Edition 2011</li> </ol>	
<b>References:</b> <ol style="list-style-type: none"> <li>1. Sunit Belapure, Nina Godbole, Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives Wiley India Pvt Ltd 2013</li> <li>2. Surya Prakash Tripathi, Ritendra Goyal, Praveen Kumar Shukla, Introduction to information security and cyber laws, Dreamtech Press 2015</li> <li>3. Thomas J. Mowbray, Cybersecurity: Managing Systems, Conducting Testing, and Investigating Intrusions John Wiley &amp; Sons 2013</li> <li>4. James Graham, Ryan Olson, Rick Howard , Cyber Security Essentials CRC Press 2010</li> </ol>	



### Experiments and Tools:

1. Configuring Firewalls and VPNs : Hands-on with firewall configurations and setting up secure VPN connections.

<https://www.pfsense.org/getting-started/>

<https://openvpn.net/community-resources/how-to/>

2. Penetration Testing of Web Applications: Using tools like BURFSuit and OWASP ZAP to find vulnerabilities in a web application.

<https://portswigger.net/burp>

<https://owasp.org/>

3. Cryptographic Algorithms: Implementing symmetric and asymmetric encryption algorithms in a coding environment (e.g. Java or C++ or Python)

<https://www.pycryptodome.org/>

<https://docs.oracle.com/javase/8/docs/technotes/guides/security/crypto/CryptoSpec.html>

4. Cloud Security Hands-on : Securing a cloud based application using IAM, Encryption, and security groups.

<https://aws.amazon.com/iam/>

<https://cloud.google.com/security/products/iam>

<https://learn.microsoft.com/en-us/azure/cloud-adoption-framework/secure/security-top-10>

5. Incident Response Simulation: Conducting a mock incident response exercise from detection to remediation.

<https://docs.splunk.com/Documentation/Splunk>

<https://www.elastic.co/guide/en/siem/guide/current/index.html>

<p align="center"><b>M. Tech CYBER SECURITY</b> Choice Based Credit System (CBCS) SEMESTER – I</p>			
<p align="center"><b>Ethics and Privacy in Social Networks (3:0:0)3</b> (Effective from the academic year 2024-25)</p>			
Course Code	24MCR15	CIE Marks	50
Teaching Hours/Week (L:T:P)	3:2:0	SEE Marks	50
Total Number of Contact Hours	40	Exam Hours	3
<p><b>Course Objectives:</b> This course will enable students to:</p> <ol style="list-style-type: none"> <li>1. Identify and describe common ethical concepts and theories.</li> <li>2. Analyze ethical dilemmas and articulate a clear, descriptive account prior to forming a normative course of action.</li> <li>3. Demonstrate one or more processes of philosophical analysis.</li> <li>4. Identify common ethical issues facing professionals in the field of information technology.</li> <li>5. Apply ethical concepts and an analytical process to common dilemmas found in the information technology field.</li> </ol>			
<b>Module – 1</b>			
<p><b>Ethics and the Professions</b> - Introduction, Codes of Ethics, Evolution of Professions, Origins of Professions, Requirements of a Professional, Pillars of Professionalism, The Making of an Ethical Professional: Education, and Licensing , Formal Education, Licensing Authorities, Professional Codes of Conduct, Professional Decision Making and Ethics, Professional Dilemma in Decision Making, Guilt and Making Ethical Decisions, Professionalism and Ethical Responsibilities, Whistle-Blowing, Harassment and Discrimination, Ethical and Moral Implications (8 Hours)</p>			
<b>Module – 2</b>			
<p><b>New Frontiers for Computer Ethics:</b> Cyberspace - Introduction, Cyberspace and the Concepts of Telepresence and Immersion, Securing Cyberspace, Detecting Attacks in Cyberspace, Cyberspace Systems Survivability, Personal Identity, Regulating and Censoring Cyberspace, The Social Value of Cyberspace, Privacy in Cyberspace, Privacy Protection, Global Cybernetics, Cyberspace Lingua Franca, Global Cyber Culture. (8 Hours)</p>			
<b>Module – 3</b>			
<p><b>Ethical, Privacy, and Security Issues in the Online</b> -Social Network Ecosystems, Introduction, Introduction to Computer Networks, Computer Network Models, Computer Network Types, Social Networks, Online Social Networks(OSNs), Types of Online Social Networks , Online Social Networking Services, The Growth of Online Social Networks , Ethical and Privacy Issues in Online Social Networks, Privacy Issues in OSNs, Strengthening Privacy in OSNs, Ethical Issues in Online Social Networks, Security and Crimes in Online Social Networks, Beware of Ways to Perpetuate Crimes in Online, Social Networks, Defense Against Crimes in Online Social Networks , Proven Security Protocols and Best Practices in Online, Social Networks, Authentication, Access Control, Legislation, Self-Regulation Detection, Recovery. (8 Hours)</p>			
<b>Module – 4</b>			
<p>Phishing in OSM &amp; Identifying fraudulent entities in online social networks. Profile Linking on Online Social Media, Anonymous Networks, Gephi Network Visualization tool. (8 Hours)</p>			



### Module – 5

**Case Study:** Beware of What You Share Inferring Home Location in Social Networks, On the dynamics of username change behavior on Twitter, Boston Marathon Analyzing Fake Content on Twitter. Location-based Privacy: Privacy in Location Based Social Networks, Visualization – Highcharts.  
**Recap/Summary of the course.** (8 Hours)

**Course Outcomes:** At the end of this course, the student will be able to

- CO1: Identify common ethical issues faced by professionals in the field of information technology.  
CO2: Apply ethical and privacy concepts to resolve issues in the information technology field.  
CO3: Analyze dilemmas and articulate a clear, descriptive account prior to forming a normative course of action.

**Question paper pattern:**

- **SEE** will be conducted for 100 marks.
- Each full question is for 20 marks. (Answer five full questions out of 10 questions with intra modular choice). In every question, there will be a maximum of three sub-questions.
- **CIE** will be announced prior to the commencement of the course.
- 25 marks for test. Average of three tests will be taken.
- 25 marks for Flexible Assessment Method.

**Textbooks**

1. Joseph Migga Kizza, Ethical and Social Issues in the Information Age, Fifth Edition, Springer London, 2013.

**References:**

1. Quinn, M. J. (2012). Ethics for the information age. Upper Saddle River, NJ: Addison-Wesley. 5th Ed. ISBN 978-0-13-285553-2
2. Adelson, H., Ledeen, K., & Lewis, H. (2008). Blown to bits: Your life, liberty, and happiness after the digital explosion. (1st ed.). Addison-Wesley. ISBN 978-0-13-285553-2. Download PDF Format through Creative Commons Licensing: <http://www.bitsbook.com/excerpts/> .
3. [https://onlinecourses.nptel.ac.in/noc23\\_cs13/preview](https://onlinecourses.nptel.ac.in/noc23_cs13/preview)

**M.TECH CYBER SECURITY**  
Choice Based Credit System (CBCS)  
SEMESTER – I

**LINUX ESSENTIALS FOR CYBER SECURITY Lab (0:0:2) 1**

(Effective from the academic year 2024-25)

Course Code	24MCRL16	CIE Marks	50
Teaching Hours/Week (L: T:P)	0:0:2	SEE Marks	50
Total Number of Contact Hours	26	Exam Hours	3

**Course Objectives:** This course will enable students to:

1. Understand the linux Operating System and basic commands
2. Gain proficiency in essential Linux commands for file, user, group management
3. Apply system administration tools.
4. Explore cyber security tools on OSINT framework.

**List of Experiments**

**PART A**

1. Installation of KALI linux/ubuntu. Execute BASIC COMMANDS on it. The 'cat' command (Creating Files, Displaying Files, Concatenating Files), Managing Files (Copying Files, Renaming / Moving of Files and Directories Removing Files and Directories), IO Redirection, Filters : wc, sort, head, tail etc.
2. MANAGING FILE PERMISSIONS - Perform following operations on files
  - a. Display the file permissions, owner and group to which the file belongs
  - b. Change the user ownership/group ownership
  - c. change the permissions using octal notation/symbolic notation
  - d. Change the default mask value
  - e. Make/remove the files immutable attributes to a file
3. MANAGING USER ACCOUNTS - Create a user account named sue with the following restrictions:
  - a. The account should have a strong, randomly generated password (consider using <https://passwordsgenerator.net> or a similar site to create the password).
  - b. The user should be forced to change her password every 60 days.
  - c. The user should not be allowed to change her password for 2 days after it has been set.
  - d. The password warning field should be set to 10.
  - e. The password inactivity period should be set to 60.
  - f. The account should be set to expire on January 1, 2025.
  - g. This user (and all others) should have a minimum password length of 12 characters.
4. Create five user accounts, with a different password for each account. Make some of the passwords very simple, such as simple words, and some of the passwords more complex. Then run the johnny password attack tool (in Kali Linux) on these new accounts and see which passwords were compromised by the tool.
5. MANAGING GROUP ADMINISTRATORS - Create a new group named eng and add the student user to this group. Make the student user a group administrator. To test this, add the bin user to the eng group while logged in as the student user and then verify this new group membership.
6. ENABLING ACCESS CONTROL LISTS
  - a. Set an access control list (ACL) for the games group that allows read and write permissions for



- that group on the hosts file.
- b. Change the ACL mask value to read-only.
- c. Verify the default ACLs by viewing the ACLs.

### **PART B**

Investigating cyber security tools using OSINT Framework/Kali Linux (tools other than covered in Part-A). Open-Source Intelligence (OSINT) plays a crucial role in identifying, monitoring, and mitigating cyber security threats. In this case study, you will use OSINT framework/Kali Linux to address a cybersecurity challenge of your chosen area. You are expected to define your own problem statement, investigate, and provide a solution using available tools and techniques. As AAT students can do mini project by using explored tools.

**Course Outcomes:** The students will be able to:

- CO1. Acquire knowledge about Operating System installation
- CO2. Apply Unix/Linux commands to manage files
- CO3. Analyze user account policies by creating users with specific restrictions
- CO4. Design and implement Access Control Lists (ACLs) for specific groups to manage file access permissions effectively
- CO5. Investigate cybersecurity threats using OSINT tools / KALI linux

**Text Book References:**

1. Linux Essentials for Cyber Security, William Rothwell, Denise Kinsey, Pearson IT Certification; 1st edition (July 20, 2018), ISBN : 978-0-7897-5935-1
2. Trent Jaeger, Operating Systems Security, Morgan & Claypool Publisher, 2008.
3. William Stalling, Operating System: Internals and Design Principles, Prentic Hall, 7th Edition, 2012.

**For every lab scenario based questions should be designed and executed. As an example for Lab01 programs designed are as follows.**

#### **Scenario Details Q1 :**

Question1 :

- (1) Create Lab01 directory
- (2) Create BOOKS directory under Lab01 directory.
- (3) Create GK, TECHNICAL and SELFHELP directories under BOOKS directory.
- (4) Change directory to GK directory using relative path.
- (5) From current directory create RHONDA directory under SELFHELP directory using absolute path.
- (6) Change directory to RHONDA directory using relative path.

Question2 :

- (1) Create a file named TheSecret with following contents  
Everything that's coming in your life you are attracting into your life.  
And it's attracted to you by virtue of images you are holding in your mind.  
It's what you are thinking.  
Whatever is going on in your mind you are attracting to you.
- (2) Display contents of the file TheSecret
- (3) Find the number of lines in the file TheSecret
- (4) Display sorted contents of file TheSecret in reverse order
- (5) Extract the last line from the file TheSecret and store the extracted line in file named TheSecret\_ABSTRACT
- (6) Display the count of number of words in the file TheSecret\_ABSTRACT

**Scenario Details Q2 :**

You are working as a junior Linux administrator and are required to set up a web development environment for your team. The environment needs to have the following:

1. A directory structure for storing HTML files, CSS files, and JavaScript files.
2. Some basic text files to store configuration details, like project name, version, and developers' contact information.
3. Perform tasks like copying, renaming, moving, removing files and directories, and ensuring the correct permissions are set.
4. You will also create some sample data files and practice using Linux filters (wc, sort, head, tail).





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(ವಿ.ಪಿ.ಯು. ಅಡಿಯಲ್ಲಿನ ಸ್ವಾಯತ್ತ ಸಂಸ್ಥೆ)

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**Department of MCA**  
(Accredited by NBA, New Delhi)

## EDGAR F CODD LABORATORY - BSN 212 - COMPUTER DETAILS

Lab Area (SQM)	Computer Specification	Quantity	Year of Purchase	Software's
85 SQM	HP Elite Tower 800 G9 Desktop: Intel Core i7, 2.10 GHz, 12 <sup>th</sup> Gen., 32 GB RAM DDR5, 512 GB SSD, 1 TB Hard Disk, Multimedia Keyboard, Optical Mouse, 21.5" FHD Monitor	35	May - 2023	System Software: 1. Windows 11 Professional 2. Fedora Core 8  Application Software: 1. Python 2. Microsoft Office Professional 2016 3. Virtual Box 4. Apache NetBeans 5. Oracle 10G
Total number of computers in the lab		35		

**Head of the Department**  
Dept of Master of Computer Applications  
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Avalahalli, Bangalore-560064





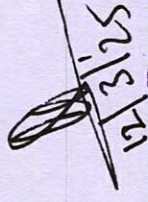
ಬಿ.ಎಂ.ಎಸ್. ತಾಂತ್ರಿಕ ಮತ್ತು ವ್ಯವಸ್ಥಾಪನಾ ಮಹಾವಿದ್ಯಾಲಯ  
(ವಿ.ಟಿ.ಯು. ಅಡಿಯಲ್ಲಿನ ಸ್ವಾಯತ್ತ ಸಂಸ್ಥೆ)

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## DENNIS RICHIE LABORATORY - BSN 211 - COMPUTER DETAILS

Lab Area (SQM)	Computer Specification	Quantity	Year of Purchase	Software's
85 SQM	HP Elite Tower 800 G9 Desktop: Intel Core i7, 2.10 GHz, 12 <sup>th</sup> Gen., 32 GB RAM DDR5, 512 GB SSD, 1 TB Hard Disk, Multimedia Keyboard, Optical Mouse, 21.5" FHD Monitor	35	May - 2023	System Software: 1. Windows 11 Professional 2. Fedora Core 8  Application Software: 1. Python 2. Microsoft Office Professional 2016 3. Virtual Box 4. Apache NetBeans 5. Java
Total number of computers in the lab		35		

  
12/3/23

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## Department of MBA

Date: 19.02.2025

I Semester				
Sl No	Course Code	Course Title	Lab Component	Lab Facility
1	MMBA1C1	Management & Organizational Behaviour	NO	
2	MMBA1C2	Managerial Economics	NO	
3	MMBA1C3	Financial Accounting & Reporting	NO	
4	MMBA1C4	Marketing Management 1	NO	
5	MMBA1C5	Business Statistics	NO	
6	MMBA1C6	Managerial Communication	NO	
7	MMBA1C7	Computer Application for Management	YES	Srinivasa Ramanujan Laboratory
8	MMBA1A1	English for Professional Excellence - 1	YES	
II Semester				
1	MMBA2C1	Operations Research	NO	
2	MMBA2C2	Human Resource Management	NO	
3	MMBA2C3	Financial Management	NO	
4	MMBA2C4	Strategic Management	NO	
5	MMBA2C5	Business Research Methods	NO	
6	MMBA2C6	Marketing Management 2	NO	
7	MMBA2C7	Business Analytics	YES	Srinivasa Ramanujan Laboratory
8	MMBA2C8	Design Thinking & Innovation	YES	
9	MMBA2A1	English for Professional Excellence - 2	YES	
10	MMBA2A2	Societal Project	NO	

*[Signature]*  
 HoD - MBA

Head of Department  
 Department of MBA

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## Department of MBA

III Semester				
1	22MBA3C1	Entrepreneurship & Startup Management	NO	
2	22MBA3C2	Information Technology for Managers	NO	
3	22MBA3C3	Internship	YES	Srinivasa Ramanujan Lab
4	22MBA3F1	Security Analysis and Portfolio Management	NO	
5	22MBA3F2	Direct Taxation	NO	
6	22MBA3F3	Mergers Acquisitions & Corporate Restructuring	NO	
7	22MBA3F4	Strategic Cost Management	NO	
8	22MBA3M1	Sales and Retail Management	NO	
9	22MBA3M2	Digital & Social Media marketing	NO	
10	22MBA3H1	Recruitment And Selection	NO	
11	22MBA3H2	Strategic Talent Management	NO	
12	22MBA3B1	Introduction to Python, Data and Control Systems	YES	Srinivasa Ramanujan Laboratory
13	22MBA3B2	Exploratory Data Analysis for Business	YES	
IV Semester				
1	22MBA4C1	Logistics And Supply Chain Management	NO	
2	22MBA4C2	International Business	NO	
3	22MBA4C3	Project	YES	Srinivasa Ramanujan Lab
4	22MBA4F1	International Financial Management	NO	
5	22MBA4F2	Financial Derivatives	NO	
6	22MBA4F3	Merchant Banking & Financial Services	NO	
7	22MBA4F4	Indirect Taxation	NO	
8	22MBA4M1	Integrated Marketing Communications	NO	
9	22MBA4M2	Strategic Brand Management	NO	
10	22MBA4H1	Compensation & Reward Management	NO	
11	22MBA4H2	Global HRM	NO	
12	22MBA4B1	Machine learning	YES	Srinivasa Ramanujan Laboratory
13	22MBA4B2	Business Analytics and Intelligence	YES	

*[Signature]*

HoD - MBA

Head of Department

Department of MBA

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Yelahanka, Bengaluru-560064

## M Tech Cyber Security Lab Computer system configuration details

Brand – HP

Configuration- Intel i5 – 14500 2.60Ghz Processor, 16GB Ram, 500GB Hard Disk, Windows 11 pro Operating system, Monitor, key board, and mouse.

Total no of Computer Systems is = 18

*Surekha*  
25/2/25

Head of Department  
Department of Information Science and Engineering  
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Avalahalli, Yelahanka, Bengaluru – 560119

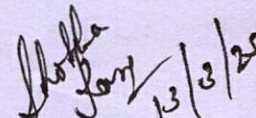


# BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### List of funded Projects in ECE Research Centre

Sl.No	Title	PI	Agency	Amount
1	Fabrication of Low Cost Thin Film Solar Cell Using Ultrasonic Spray Pyrolysis	Dr. Sabina Rahaman	SERB	18.3 Lakhs
2	Adaptive Motor Imagery Based Brain Computer Interface	Dr. Saneesh Cleatus T Dr. Tejaswini S	VGST	40 Lakhs

  
HOD



# BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### Equipment available in ECE R&D Lab (TFOD and CNER Lab)

Sl No	Name	Configuration	Purpose
1.	Thermal Evaporation System	Stainless Rupees Steel Metal Bell jar, Rotary Vacuum Pump, Diffusion Pump, Thickness Monitor, Water chiller with pump: (1 No) 0.5TR capacity industrial chiller with 50 litres.	For film coating (preparation of electrode for fabricating any kind of device)
2.	Spray Pyrolysis Unit	Thermocouple (50 – 550 degrees) Flowrate – 2ML/S	For thin film preparation for device fabrication
3.	Hot Air Oven	10-300 Degrees	Heating glass sample and for drying the glass vessels
4.	Vector Network Analyzer & Spectrum Analyzer	ZVH8 from Rohde and Schwarz	Testing of antennas
5.	Open BCI, All in one Bio Sensing R&D Bundle	Ultra Cortex Mark IV Head Set, 16 Channel 10-20 EEG System, dry electrodes.	To acquire real time Scalp EEG signal wirelessly
6.	Workstation Dell Precision T3630	Intel Xeon Processor, 32GB RAM, 8TB HDD with Nvidia GPU	For AI and Deep learning applications
7.	Workstation Dell Precision 3650	Intel Xeon 11th Gen Processor, 128GB RAM, 24TB HDD with Nvidia Quadro RTX 5000 GPU	For AI and Deep learning applications
8.	Soldering Workbench ESD Workbench table, ESD Chair, Soldering and De Soldering	ESD Workbench table with antistatic mat, ESD Chair, Temperature controlled soldering / De soldering / SMD rework station, LED Magnifier lamp, PCB holder	For precision soldering requirements
9.	WICOMM T Kit	Software defined Radio, FPGA based with data processing ADC and DAC conversion and RF block	Implementation of modern digital communication system with direct interface to MATLAB
10.	My-DAQ and My-RIO	My Daq- 8 Data acquisition engine MyRio - 10 analog inputs, 6 analog outputs,	Data acquisition LAB view compatible
11.	Edge Devices for IoT	Arduino Edge Control Board, Arduino Portenta Breakout, Arduino Portenta H7, Arduino NICLA SENSE ME, Arduino Protenta Vision Shield Ethernet, Arduino Portenta CAT.M1/NB IOT GNSS Shield	Used for developing and controlling automation projects, offering versatile input/output options for various sensors and actuators.



# BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

12.	Intel® RealSense™ Depth Camera D435i,	Depth technology: Stereoscopic Minimum depth distance (Min-Z) at max resolution: ~28 cm Depth Accuracy: <2% at 2 m Depth Field of View (FOV): 87° × 58° Depth output resolution: Up to 1280 × 720 Depth frame rate: Up to 90 fps	Designed for depth sensing and spatial awareness, commonly used in robotics, 3D scanning, and augmented reality applications.
13.	reComputer J2012 / J2021 - Edge AI Device with Jetson Xavier NX module, (16GB)	16GB SoM, pre-built Jetpack 5.1.1, 128GB SSD, 4x USB 3.2, HDMI, GbE, carrier board also includes M.2 key E for WIFI, M.2 Key M for SSD, RTC, CAN, 40-pin	An edge AI device powered by the Jetson Xavier NX module, optimized for AI and machine learning tasks at the edge, with a pre-installed JetPack system for streamlined development.
14.	Analog Discovery Studio	<b>Oscilloscope:</b> Channels 2 Sample Rate 100 MS/s Bandwidth 30 MHz+ Voltage Range ±25V <b>Function Generator: 2</b> <b>Channel 8 MHz, ±5V</b> Additional Output Port/s Stereo Audio Output Jack 2 Channel Programmable Power Supply 16 Channel Logic Analyzer 2 Channel Spectrum Analyzer	Serves as a portable lab for electronics, enabling circuit design, testing, and analysis with integrated tools like oscilloscopes and signal generators.
15.	Digital Balance Meter	Used for precise measurement of mass, essential in experiments requiring accurate weighing of substances.	
16.	Ultrasonic Cleaner	Utilizes high-frequency sound waves to clean delicate instruments and components by removing contaminants.	
17.	Magnetic Stirrer	Mixes liquids efficiently using a rotating magnetic field, ideal for creating homogeneous solutions.	

*Shafiq*  
13/3/25  
HOD



**Department of Information Science & Engineering**

**Details of Consultancy projects:**

**Consultancy project by -Dr. Shoba M, Associate Professor**

<b>Sl. No.</b>	<b>Name of the Faculty</b>	<b>Title of consultancy project</b>	<b>Consultancy Amount Received (Rs)</b>	<b>Sponsoring Agency</b>	<b>Remarks</b>
1	Dr. Shoba M	Corrosion Prediction in different units of O&G production centre using Deep Learning Methodology	45,000/- (1st installment)	MEMOC, Kuwait	On-going Project



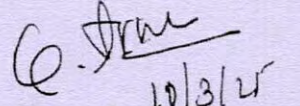


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**DEPARTMENT OF CIVIL ENGINEERING**

Name of the Faculty	Designation	Academic Year	Project Title	Agency	Total Amount
Dr Rajesh Gopinath, Mrs Shimna M & Mrs Archana K	Assoc. Prof & Assistant Professors	2024-2025	Filter for Roof top Rain Water Harvesting and Ground water Recharge	BIS	Sanctioned Amount 4.5 Lakhs

  
HoD/CV 12/3/25



Consultancy Data

1 message

Anupama H S Associate Professor, Dept. of CSE <anupamahs@bmsit.in>  
To: Nandini Office <nandini\_office@bmsit.in>

Wed, Mar 12, 2025 at 2:11 PM

Consultancy Activity:

Sl. No.	Name of the Faculty	Title of consultancy project	Consultancy Amount Received (Rs)	Sponsoring Agency	Remarks
1	Dr Anupama H S	Training (EDP)	₹ 24,000/-	Pytriot Solution	AY 2024-25 (Feb 2025)
2	Prof. Sanjay M B Prof. Shobith T Prof. Sachin A U	Training on Machine Learning	₹ 30,000/-	Aprameyah technologies Pvt Ltd	AY 2023-24 (Aug 2024)
3	Dr. Vishwa Kiran S	Training (EDP)	₹ 24,000/-	Pytriot Solution	AY 2024-25 (Jan 2025)

Dr Anupama H S  
Professor  
Dept of AI & ML  
BMSIT&M  
Bangalore  
Mob:9741043410





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## Department of Physics

### Research Projects – Ongoing

Date:6-2-2025

Sl. No.	Name of the PI/Co-PI	Title of the Project	Sponsoring agency	Amount in lakhs	Year of sanction
1	Dr. Harish Sharma Akkera (PI)	Flexible Ga <sub>2</sub> O <sub>3</sub> solar-blind UV photodetectors for wearable and smart skin device applications	ANRF-SERB-CRG	32.72641	2024
2	Dr. Basavaraj R B (PI)	Inorganic Organic Hybrid Core/Shell Materials for Optoelectronic and Security ink Applications	VGST-K-FIST(L1)	15.00	2023
<b>Total INR (Lakhs)</b>				<b>47.72641</b>	

### Research Projects – Completed

Sl. No.	Name of the PI/Co-PI	Title of the Project	Sponsoring agency	Amount in lakhs	Year of sanction
1	Dr. C Kavitha (PI)	Efficiency improvement of ultra-capacitors using binary metal oxide nano composites	VGST-K-FIST(L2)	20.00	2021-23
2	Dr. Daruka Prasad (Co-PI)	Hybrid Ferrite Nanocomposites with Enhanced Visible light Photocatalytic Performance for next Generation of Clean Energy System	VTU-TEQIP-competitive research grant	1.50	2019-2020
3	Dr. C. Kavitha (PI)	Graphene oxide/plasmonic hybrid nanocomposites for versatile surface enhanced raman spectroscopy (SERS) based multi analyte detection sensors	VGST-SMYSR	5.00	2018-2020
4	Dr. Daruka Prasad (PI)	Zinc oxide Nanocomposites preparation using modified sonochemical method suitable for solar cells and battery applications	VGST-RFTT	5.00	2018-2020





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5	Dr. Dhananjaya. N (PI)	Plant latex mediated green combustion synthesis of rare earth doped nano aluminates: study of structural and luminescent properties	DST-SERB	21.70	2015-2019
6	Dr. C. Kavitha (PI)	Graphene/Graphene oxide-Nano particles hybrid structures for SERS based optical sensors.	DST-SERB	31.98	2014-2017
7	Dr. Dhananjaya. N (PI)	Novel Photo synthesis, structural and luminescence properties of rare earth activated nano-oxyhalides for display and dosimetric applications	VGST-SMYSR	4.00	2014-2016
<b>Total INR (Lakhs)</b>				<b>89.18</b>	

### Projects Summary

Sl.No.	Academic Year	No. of Projects Sanctioned	Scanned Amount (in Lakhs)	Status
1	2024-25	1	32.72641	Ongoing
2	2023-24	1	15	Ongoing
3	2021-22	1	20	Completed
4	2019-20	1	1.5	Completed
5	2018-19	2	10	Completed
6	2015-16	1	21.70	Completed
7	2014-15	2	35.98	Completed
<b>Total Amount (in Lakhs)</b>			<b>136.90641</b>	





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(ವಿ.ಟಿ.ಯು. ಅಡಿಯಲ್ಲಿನ ಸ್ವಾಯತ್ತ ಸಂಸ್ಥೆ)

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**Department of MCA**  
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13-03-2025

### DETAILS OF FUNDED PROJECT AND CONSULTANCY WORK CARRIED OUT

Period	Name of the Funded Agency	Name of the Faculty	Title of the Project	Grant Received	Status	Remarks
2023-24	KSCST	Mr.Dwarakanath G. V.	Smart Doctor	Rs.5,500/-	Completed	Student Name: 1.Mr. Pramod 2.Mr.Akash T M
2022-23	BMSIT&M - BICEP	Mrs. Nirupama	Smart Perfume Dispensary based on smell	Sanctioned Fund: Rs.28,500/- Fund disbursed: Rs.15,000/-	Ongoing	
2022-23	L&T, Mumbai	Mr.Dwarakanath G. V.	IIoT and Its Applications	Rs.25,279/-	Completed	
2021-22	L&T, Mumbai	Mr.Dwarakanath G. V.	IIoT and Its Applications	Rs.28,088/-	Completed	
2020-21	L&T, Mumbai	Mrs. Sridevi	Monetization of Data using Data Science Techniques	Rs.4,000/-	Completed	
2020-21	L&T, Mumbai	Mrs. Sridevi	Mathematics for Data Science	Rs.22,500/-	Completed	
2020-21	AICTE-ATATL Sponsored FDP	Dr.Aparna K	Cyber Security	Rs.93,000/-	Completed	
2020-21	L&T, Mumbai	Mrs. Sridevi	Mathematics for Data Science	Rs.11,250/-	Completed	
2019-20	L&T, Mumbai	Mrs. Sridevi	Mathematics for Data Science	Rs.3,750/-	Completed	





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( ವಿ.ಟಿ.ಯು. ಅಡಿಯಲ್ಲಿನ ಸ್ವಾಯತ್ತ ಸಂಸ್ಥೆ )


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**Department of MCA**  
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13-03-2025

**DETAILS OF FUNDED PROJECT AND CONSULTANCY WORK CARRIED OUT**

Period	Name of the Funded Agency	Name of the Faculty	Title of the Project	Grant Received	Status	Remarks
2019-20	L&T, Mumbai	Mrs. Sridevi	Mathematics for Data Science	Rs.27,975/-	Completed	
2019-20	L&T, Mumbai	Mrs. Sridevi	Mathematics for Data Science	Rs.20,795/-	Completed	

  
14/3/25  
(HOD, MCA)

**Head of the Department**  
Dept of Master of Computer Applications  
BMS Institute of Technology & Management  
Avalahalli, Bangalore-560064



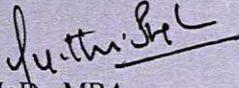


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**BMS Institute of Technology & Management**  
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Avalahalli, Doddaballapur Main Road, Bengaluru - 560064

## Department of MBA

### FUNDED PROJECTS

Sl No	Name of the Faculty	Details of consultancy (EDP / Project / Testing / Others)	Name of the Agency to which consultancy work carried	Duration of consultancy (Date of Start and Date of Closing)	Amount Received
01	Dr. Jyothi E Singh	Others	BMSIT&M, Offer of Seed Money Grant for Research 2024-25.	2 years from the date of release the seed money grant	₹.2,00,000/-

  
HoD - MBA  
Head of Department  
Department of MBA  
BMS Institute of Technology and Management  
Avalahalli, Yalahanka, Bengaluru-560 054





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(An Autonomous Institution Affiliated to Visvesvaraya Technological University, Karnataka)  
All Eligible UG & PG Programmes Accredited by NBA | NAAC Accredited with 'A' Grade  
Approved by UGC / AICTE / Govt. of Karnataka

Summary of MoUs (as on 10.02.2025)		
Sl No	Department	No of MOUs in force
1	AI & ML	4
2	MCA	1
3	ECE	2
4	ETE	4
5	EEE	3
6	ISE	5
7	CSE	3
8	ME	5
9	CV	4
12	MBA	2
11	Institute	17
Total		50

  
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MoUs as on 10.02.2025

**List of MoUs with Industries & Research Centre**

Sl. No	MoU - Organization name	Branch	Purpose of MoU	Date of MoU	Activities conducted under MoU	Status
1	GRKMS Pvt Ltd	Institute	E-waste Management	16-01-2025	Management of e-waste, awareness among students, faculty and staff about the environmental and health impacts of improper e-waste disposal	Inforce
2	National Research University of Electronic Technology (MIET) Russia	Institute	Joint Research Program and Collaboration	19-12-2024	Research, Joint Conferences, Symposis	Inforce
3	Quantech Origin	Institute	Service Provider	03-11-2024	TEDx, Technology Summit, YUGMA	Inforce
4	NFTHING Ltd	Institute	Training Program, Student Internship	20-09-2024	Special lectures, Workshops/Seminars, Industrial visit, Web3onwards Community Program	Inforce
5	Quiklrm Pvt. Ltd	Institute	English Communication Skill Lab	27-09-2024	Fundamentals of Communication, Developing English Language Skills	Inforce
6	Drydocks World Company	Institute	Workshops and Student Training Session	17-08-2024	Focussing on areas in shipbuilding, maintenance and environmental sustainability within the maritime industry	Inforce
7	Udjan Foundation	Institute	Green Hydrogen Activities	23-07-2024	Research activities, Workshops/ Seminars/ Awareness activities on Green Hydrogen	Inforce
8	Aparna Mokahsi E Sutra Chronicles Pvt. Ltd.	Institute	Contineo Software	18-07-2024	Complete academic autonomy platform with Digital DVS Examination	Inforce

  
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MoUs as on 10.02.2025

**List of MoUs with Industries & Research Centre**

Sl. No	MoU - Organization name	Branch	Purpose of MoU	Date of MoU	Activities conducted under MoU	Status
9	Unisys India Pvt. Ltd	Institute	Unisys Campus Research Program	06-06-2024	Special lectures, Workshops/Seminars, Industrial visit, grow unisys emerging Technologies	Inforce
10	Indian Institute Technology Madras (IITM), Dostbin Solution Pvt. Ltd	Institute	Projects / Carbon Zero Challenge	25-04-2024	Catalyze innovation, entrepreneurship and sustainable development, fostering a vibrant ecosystem for eco-innovators & change makers	Inforce
11	Bureau of Indian Standards (BIS)	Institute	Research Projects and Standards in Teaching Learning Process	22-03-2024	Technical Seminars, Symposiums and Workshops	Inforce
12	Criyagen agri	Institute	An MoU with Criyagen Agritech and Biotech was signed . The MoU caters to student exchange program for drone technology, Industry institute collaboration with their company. They have also offered projects on agritech drones and allied areas. Our Institute has offered them consultancy services in 3D printing of drone components.	14.07.2023	Industrial Visits, Student Internship & Faculty Internships	Inforce



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MoUs as on 10.02.2025

**List of MoUs with Industries & Research Centre**

Sl. No	MoU - Organization name	Branch	Purpose of MoU	Date of MoU	Activities conducted under MoU	Status
13	Co-Create Ventures	Institute	1) To create an environment of innovation & entrepreneurship and for building great startups 2) To become enablers/ entrepreneurs creating startups 3) To generate value in terms of financial & intellectual capital with right legal structures	07.11.2022	Workshops, Roadshow, Panel discussion, Pebble sessions, virtual seminars and etc.	Inforce
14	Karnataka Janapada Parishath	Institute	1) To orient and promote the Karnataka's endangered folk cultures 2) Organising events. programs like research, documentation, archiving, exhibition and publication of folk traditions as designed and organised by Karnataka Janapada Parishath	20.09.2022	Cultural activities in folk traditions	Inforce
15	Clicks Talent Connect Pvt Ltd	Institute Placement	Employability of students	06.07.2022	To enhance the quality of educational experience of students	Inforce
16	KSCST (Karnataka State Council for Science and Technology)	Institute	IP Cell, Technical Assistance, Internet	18.06.2021	IP cell activities	Inforce
17	NLSI University	Institute Eco club	Collaborative research, Environmental studies	05.05.2017	To be conducted	Inforce
18	1 Million for 1 Billion (1M1B) and Flaunch Innovation Pvt. Ltd Through AR VR HUB	AIML	Employment skill through internship for the students	22-10-2024	Startup Support, and Entrepreneurial initiatives	Inforce
19	Tata Consultancy Services Ltd (TCS)	AIML	Employment skill through internship for the students	28-06-2024	Internships / Syllabus	Inforce
20	SIMPAGMA SOLUTION PRIVATE LIMITED	AIML	Employment skill through internship for the students	31.08.2021	Internships	Inforce



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MoUs as on 10.02.2025

**List of MoUs with Industries & Research Centre**

Sl. No	MoU - Organization name	Branch	Purpose of MoU	Date of MoU	Activities conducted under MoU	Status
21	APIDREAMZ SOLUTION PRIVATE LIMITED	AIML	Employment skill through internship for the students	28.08.2021	Internships	Inforce
22	National Highway Authority of India (NHAI)	CV	Training for Faculty. students, Faculty.Student internships, student projects, technical talks	05.08.2020	60 students Completed Internship	Inforce
23	Construction Management Training Institute PVT. LTD.	CV	Training for Faculty. students, Faculty.Student internships, student projects, technical talks	30.08.2021	1.CMTI has offered 5 students from final year to participate in Digital Construction workshop which is conducted in December 2021 month for 5 days (online)	Inforce
24	Design Mentors	CV	Training for Faculty. students, Faculty.Student internships, student projects, technical talks	30.08.2021	Student Development Program on Higher Education, Job opportunities, Entrepreneurship, 10th Dec 2021	Inforce
25	M.S Medini Technologies	CV	Training Program, Student Internship, Software Support for Academic purpose	19.10.2022	3 Days Training program on Auto Cadd from 27.02.2023 to 01.03.2023 completed for 3rd sem students of 3rd sem 2021 Batch	Inforce
26	Indian Tech-Keys	CSE	Industry supported laboratory, E-store, Internships, placement	23.09.2019	R&D, SDP	Inforce
27	Walkin Software Technologies	CSE	Cooperation & collaboration, internships, opportunities	19.11.2021	Students training, skills	Inforce
28	GAMUT ANALYTICS PVT Limited	CSE	Seminars, Internships and Projects, Curriculum Initiatives	19.04.2023	Internships	Inforce Renewed on 18.12.2023
29	M.s TECHNILAB INSTRUMENT	ECE	SDP, Sharing of resources, workshops, Training Program	31.08.2021	Training Program	Inforce
30	M.s EDGATE TECHNOLOGTES PVT LTD	ECE	studnet Internship	31.08.2021	studnet Internship	Inforce

  
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MoUs as on 10.02.2025

**List of MoUs with Industries & Research Centre**

Sl. No	MoU - Organization name	Branch	Purpose of MoU	Date of MoU	Activities conducted under MoU	Status
31	Ekzen Robotics	EEE	Workshops, Internships, Project works and placement assistance	30.08.2021	Faculty and student internship	Inforce
32	Skill Dezire Technologies Private Limited	EEE	Workshops, Internships, Project works and placement assistance,	30.08.2021	Faculty internship and student projects	Inforce
33	Mobil80 Solutions and Services Pvt. Ltd	EEE	Workshops, Internships, Project works and placement assistance,	03.09.2021	Internships	Inforce
34	VLSI Expert Pvt Ltd	ETE	Internships, Projects, Papers & Patents	04.09.2021	Software development	Inforce
35	EDGATE TECHNOLOGIES PVT LIMITED: TEXAS Innovation center, A TEXAS University program	ETE	Training Program and Student Internship	13.11.2019	1). Five days workshop on Advanced Embedded Systems & IoT Using Texas Instrumentation Board on 27th to 31st January 2020. 2) Student Internship from 28th September to 28th October 2020 and 14th December 2020 to 9th January 2021. 3) Two days Hands-on Workshop on "Advanced Embedded Systems & IOT Using Texas Instrumentation Board" for 3rd semester students and Faculty of ETE, and ECE was conducted from 18th and 19th January 2023.	inforce
36	PIA-Peenya Industries Association	Institute (ETE)	Consultancy, Training, internships	30.05.2018	Industrial Visits, Student Internship & Faculty Internships	Inforce



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MoUs as on 10.02.2025

**List of MoUs with Industries & Research Centre**

Sl. No	MoU - Organization name	Branch	Purpose of MoU	Date of MoU	Activities conducted under MoU	Status
37	Technilab	ETE	Consultancy, Internships	22-12-2017	Student Internship, Faculty Internship	Inforce
38	Infidata Technologies	ISE	MOU is being signed with Infidata Technologies as a partner to facilitate internships for students of our Institution which is an AICTE approved academic institution	28.08.2021	Training Program, Student & Faculties Internship, Software Support for Academic purpose	Inforce
39	Mitron Technologies & Innovations	ISE	The MOU is being signed with Mitron Technologies as a partner to facilitate internships for students of our Institution which is an AICTE approved academic institution	30.08.2021	Training Program, Student & Faculties Internship, Software Support for Academic purpose	Inforce
40	Digipix Technologies	ISE	MOU is being signed with DIGIPIX Technologies as a partner to facilitate internships for students of our Institution which is an AICTE approved academic institution.	30.08.2021	Training Program, Student & Faculties Internship, Software Support for Academic purpose	Inforce
41	Ui Path academic alliance	ISE	MOU is being signed with Ui Path academic alliance as a partner to facilitate internships for students of our Institution which is an AICTE approved academic institution.	23.01.2022	Training Program, Student & Faculties Internship, Software Support for Academic purpose	Inforce
42	EC Council Academic Partner	ISE	Certification	25.11.2022	Part of BoS for M.Tech Cyber Security, Curriculum suggestions, Proprietary softwares of IBM and EC Council, Professional and industrial Content for Cyber security	Inforce
43	Gamma Bytes Pvt Ltd	ME	Cooperation & collaboration, internships, opportunities	07-03-2022	Safe, positive environment,	Inforce


  
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44	Rethium Power Tech LLP	ME	Lithium-Ion Battery pack, Investigate the mechanical strength	28.03.2022	Optimizing lithium-Ion Battery	Inforce
45	Toyota Kirloskar Motor Pvt. Ltd.,	ME	Donated Automobile engine and parts, articles for the purpose of education among students and staff	28-05-2018	Skill Development programs, Students demonstration	Inforce
46	NITK	ME	Virtual lab for material testing, vibration and Dynamics	29-04-2016	Remote triggering virtual lab conducted; Several demonstration lectures have been conducted	Inforce
47	Federal Mogul Goetze Limited	ME	Internship, Industrial Visits, FDP, Placement	07-04-2015	Faculty & students' internships, FDP, Industrial visits, organized	Inforce
48	SK Associates & Group	MBA	Conduction seminars and workshops to promote Entrepreneurship	30-06-2023	Training, Internships	Inforce
49	Excel R Edtech Pvt Ltd	MBA	Skill Development Program, Guest lectures, Faculty Development Program	22-12-2023	SDP	Inforce
50	DLithe Consultancy Services Pvt. Ltd.	MCA	Training for students, Faculty, Student Internships, Student projects, Technical talks	31.08.2021	Student internships for 81 students(2 batches), 2 Technical Talks, Faculty internship	Inforce

  
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