

MechInfo

Biannual Department News Letter

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

Chief Editor

**Dr. K.M.Sathish Kumar
Professor and Head, Department Mechanical
Engineering**

Editor

**Prof. S.NithyaPoornima,
Assistant Professor**

Student Coordinators:

**Chinmayee Prasad V Semester
Chaithanya, III Semester
Charisma, III Semester**

Vision of the Institute

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.

Mission of the Institute

Accomplish stimulating learning environment through high quality academic instruction, innovation and industry - institution interface.

Vision of the Department

To develop technically competent Mechanical Engineering professionals for the benefit of the society

Mission of the Department

Impart quality education in Mechanical Engineering and allied areas by state of the art infrastructure and dedicated faculty.

Provide conducive environment for both students and faculty to pursue higher education & research and to work ethically for the benefit of society.

Program Educational Objectives (PEOs)

Graduates of the program will:

PEO-1: Be successful professionals in the field of Mechanical Engineering and allied areas.

PEO-2: Exhibit skills to work effectively and ethically in multiple domains of engineering as part of a team.

PEO-3: Excel in higher studies, research and adapt in a world of constantly developing technology.

HODs Desk:

The Department of Mechanical Engineering was established in the year 2002-03. The Department offers full-time UG programme in Mechanical Engineering with an annual intake of 60 students. The programme is affiliated to Visvesvaraya Technological University (VTU), Belagavi and approved by All India Council for Technical Education (AICTE). The UG programme is provisionally accredited by the National Board of Accreditation (NBA), New Delhi till 2019 and also Permanently Affiliated to Visvesvaraya Technological University (VTU), Belagavi. The post-graduation in Machine Design was started during the academic year 2014-15 with an approved intake of 18 students. The Department is recognised as a Research Center by Visvesvaraya Technological University(VTU), Belagavi where the number of research scholars registered stands at 20. Currently, the Department is headed by Dr. K. M. Sathish Kumar.

The Department's strength lies in having a good number of experienced and well qualified faculty. Department has 19 well qualified and dedicated faculty members with 7 faculty holding Doctoral Degree and 12 faculty pursuing their doctoral degree. Faculty members have won awards, are the reviewers for International Journals, Members of LIC, BoS, BoE, DRDO Recruitment Committee. Faculty members have published quality journals and attended various International & National conferences. The faculty members of the department also undergo industry internships. Also, faculty members have authored Text Books to help the student community. The Department is supported by 10 well trained Technical staff. The Department of Mechanical Engineering has state-of-the-art laboratories. These laboratories not only satisfy the curriculum requirements of the students very lucidly, but also provide additional facilities to enhance the practical knowledge. Department has excellent computing facilities and resources in terms of both hardware and software.

The Department has adopted the practice of Outcome Based Education (OBE). The Department has constituted a Department Advisory Board (DAB), an elite group comprises members from Academia, Industry and Research organisations. DAB has been set up to take valuable suggestions and views on the activities happening in the department. The members of our Department Advisory Board are Dr. Seshan S (IISc), Dr. Vijay Desai (NITK, Surathkal), Mr.Ajith Deshpande (Rolls Royce), Mr. R. Sridhar (Federal Mogul), Mr.Manjunath. P (Scientist, NAL), Mr.RohitRao (Rolls Royce), Dr. H.K. Govindaraju (Dean – Student Welfare) and Dr. K. M. Sathish Kumar (HoD and Convener).

The Department has signed 14 Memorandum of Understanding (MoU) with Industries, Research and Academic Institutes namely The Energy and Resource Institute (TERI), Bengaluru, Engineering Materials Inc, Sandhar Technologies, Bengaluru, Toyota Kirloskar Motor Pvt. Ltd, Bengaluru, BMW, Bengaluru, Volvo India Pvt Ltd, Bengaluru, National Aerospace Laboratories (NAL), Bengaluru, National Institute of Technology Karnataka (NITK) Surathkal, Kshipra Simulations Pvt. Ltd, Bengaluru, National Design Research Forum (NDRF), Bengaluru and Federal Mogul, Bengaluru to name a few.

Department has established "Industries supported Engines laboratory" with the support of Toyota Kirloskar Motors Pvt. Ltd., BMW India Pvt. Ltd., and Volvo India Pvt. Ltd.

Department in a quest to build Holistic development among the students, various programmes were organised. Innovative teaching methods are followed to impart quality education to the students. The Department organizes Conferences, Workshops and Faculty Development Programs periodically. These activities will greatly benefit the faculty members to comprehend the essence of teaching and can teach very effectively and proficiently. The Department hosts and supports several activities like Project Based Learning (PBL), Interdisciplinary projects, Societal relevance projects, Skill Based Workshops, Student Internships, Industrial Visits, Partial Delivery of the curriculum by Industry experts, Poster presentations to name a few. All these activities will greatly enhance the learning ability of the students.

Memorandum of Understanding

The Department of Mechanical signed a Memorandum of understanding with Kshipra Technology On 12th October 2018. Kshipra Consulting is a professional recruitment firm catering to the needs of various companies across verticals. They offer strategic staffing services for companies in India. Their inception has been in the business scenario with a mission of serving the companies with the speed and quality that is required. The department has also signed Memorandum of understanding with different organization like JERI, NAL, SANDHAR Technologies etc.



Staff of Mechanical Department

Teaching staff details:

Name of the Faculty	Qualification	Designation
Dr.H.K.Govindaraju	M.E (M/C Design), PhD	Vice Principal
Dr.K.M.Sathish Kumar	M.Tech (CIM), PhD	Professor & Head
Dr.N.Suresh	M.E (Metal Casting), Ph.D	Professor
T.N.Praveen Kumar	M.Tech (PEST) (Ph.D)	Associate Professor
O.Gurumurthy	M.E(Prod.Engg.) (Ph.D)	Assistant Professor
K.Chandra Sekhara Reddy	M.Tech (I.E) (Ph.D)	Assistant Professor
Yashavantha Kuma.G.A	M.Tech (Design Engg.) (Ph.D)	Assistant Professor
G.L.Anantha Krishna	M.E(Design Engg.) (Ph.D)	Assistant Professor
Shripad Diwakar	M.E (Thermal Engg.) (Ph.D)	Assistant Professor
S. Nithya Poornima	M.Tech (CIM) (Ph.D)	Assistant Professor
T.G.Sriganesh	M.Tech (CIM) (Ph.D)	Assistant Professor
Sundaresh.S	M.Tech (PDM) (Ph.D)	Assistant Professor
Madhu.M.C	M.E (Thermal Power Engg.) (Ph.D)	Assistant Professor
Jagadeesh Y.J.	M.E (Thermal Power Engg.) Ph.D	Assistant Professor
B.J.Tejaswini	LL.M (Ph.D)	Assistant Professor
Keerthi Kumar.N	M.E (Thermal Engg.) (Ph.D)	Assistant Professor
Kiran.M.D	M.E (Design) (Ph.D)	Assistant Professor
Dr Shreya Banerjee	M.E (Design) Ph.D	Assistant Professor
Dr G.Avinash	M.S (Thermal Power Engg.) Ph.D	Assistant Professor
Dr.Nandini.R	M.Tech (Product Engg.) Ph.D	Assistant Professor
Dr Santhosh Kumar	M.E (Design) Ph.D	Assistant Professor

Technical Staff Details

Name	Qualification	Designation
Rammurthy	DME(B-Tech)	Foreman
R.Ananda	DME	Instructor
R.Venkatesha	ITI.NAC, DME	Instructor
Umashankar.S	ITI. NAC	Assist. Instructor
Srinivasa	DME	Assist. Instructor
BheemaRao.G.K.	ITI.NAC	Assist. Instructor
Abdul Razak	DME	Assist. Instructor
Pradeep.C	ITI.NAC	Mechanic
Ashok.G.C	ITI.NAC	Mechanic
Srinivasa.K.A	DME	Mechanic

MoUs / Awards / Recognitions

Dr. Sangmesh B has been awarded as SHIKSHANA SEVA RATNA Prashasti. on 21st September 2019

Dr. Santosh Kumar attended PhD convocation 2019 held on 12th September 2019 in Indian Institute of Science, Bangalore

Mr.T.N.Praveen Kumar Assistant Professor, Department of Mechanical Engineering has successfully completed NPTEL-AICTE online course.on "Patent search for Engineer and Lawyers with a score of 75% and Elite held in the month of September 2019.

Mrs. Tejaswini B J, Assistant Professor, Dept. of ME has successfully completed a NPTEL online course on 'Intellectual Property Rights and Competition Law' with a score of 75% and Elite held in the month of September 2019.

Mr. Keerthi Kumar N , Assistant Professor, Department of Mechanical Engineering was awarded as best Professor for Mechanical Engineering from Karnataka Educational Awards-2019 organized by Youth Efforts for Society (YES) Trust, Bangalore. The Award function was held on 26th Oct 2019 at Bharitiya Vidya Bhavan, Bangalore.



BEST PROFESSOR AWARD

Mr Shripad Diwakar Assistant professor , Mechanical engineering has completed NPTEL online course on Fluid Mechanics conducted by IIT Guwahati and secured 67/100 with Elite grading on 17th November 2019

Workshops / Faculty Development Programmes/ Fests

An 11 day induction programme was conducted in the department to make the students feel comfortable in their new environment, open them up, set a healthy daily routine and create bonding in the batch as well as between faculty and students. The

Induction programme was formally inaugurated by Chief Guest, Dr. Kari Siddappa, VC, VTU, Belagavi, President, Sri M.Madan Gopal, IAS(Retd.), Chairman, BoG, BMSIT& M and BMSSA,

The Department of Mechanical Organized one-day workshop on Virtual Lab for the faculty and students of Mechanical, Civil, EEE and E&C, BMSIT&M in association with NITK Virtual Lab team on 30th August, 2019 Computing Lab-1, 4th floor, Academic block BMS Institute of Technology and Management. Mr. Nishan B Shetty and Mr. Aquib B Nadaf Junior Research Fellow, Centre for System Design, NITK, Surathkal explained about virtual lab and how to conduct the experiments using virtual lab. Also, hands on practice has been conducted for both students and faculties. Totally 102 students and faculties from different branches of BMSIT&M attended this workshop



Workshop on Virtual Lab

Dr. Sangmesh B has attended a symposium on Rethinking Globalization Contextualizing Globalization of University Education held on September 28th 2019.at Gandhi bhavan Bengaluru

Mrs S.Nithya Poornima and Mr O.Gurumurthy Assistant Professor, Department of Mechanical Engineering attended a two day workshop on Automation Technology in Manufacturing that enables us to enhance skills in Mechatronics environment during 23 and 24th October 2019. The workshop enables us to obtain more intelligent automation solutions from a single source. In addition to try and test pneumatic drive units, Festo also provided both servo-pneumatic and electric drive units

Mrs. Tejaswini B J, Assistant Professor, Dept. of ME attended a one day workshop on 'Cyber Privacy and Security Engineering' organized by Centre of Excellence, Govt. of Karnataka and KSCST at BMSIT&M on 12th October 2019.

Department of Mechanical Engineering organised an Open Course on "Fusion 360 and 3D Printing" and "Concepts in Mechanical Engineering for Competitive Exams" The course coordinators for "Fusion 360 and 3D Printing" were Prof. Keerthi Kumar, Prof. Sriganesh and Dr.Nandini and the course coordinators for "Concepts in Mechanical Engineering for Competitive Exams" were Dr. Avinash, Dr. Santhosh and Dr. Shreya Banerjee on 22nd-26th Oct 2019. The students were prepared for different competitive exams. The course was focused on Engineering Mathematics, Thermodynamics, Strength of materials and Manufacturing.



"Concepts in Mechanical Engineering for Competitive Exams"



5.Fusion 360 and 3D Printing

Seminars / Expert Talks:

Mr.Ravitej S J , Piping Design Engineer, Valdel engineer and construction private limited, Bengaluru, alumni of BMSIT & M . A talk was delivered based on Importance of Lean management and its application in the manufacturing industry on 17 August 2019. An insight in to the current trends in manufacturing industries was highlighted. He also made student groups and assigned a task of product they want to manufacture and discuss on their own how lean process is applied. Students participated well and explained the lean process. And also discussed the lean tools and practices used in industry



A talk on Importance of Lean management and its application in the manufacturing industry

The department of Mechanical Engineering organised an Alumni interaction with 1st year studentson 10th August 2019. The Resource person/s was Mr.Ravitej S J (2006 batch alumni 1BY06) Veldel engineering and construction pvt. Ltd. and Hemanth

Kumar(2014 batch alumni 1BY14) M.S. Student, Chalmers university of technology, Sweden. The Session highlights was emphasis the to their career in mechanical engineering and courses to focus on the fields to grow in.



Alumni Interaction

K. Chandra Sekhara Reddy, Assistant Professor Mechanical Engineering organised a technical talk on "Synergy between an Engineering and Management Program" for 7th, Semester ME by Mr.Sriram Nandakumar, Alumni, Field Application Engineer ,PEI-Genesis, Bengaluru. The talk was based on Importance of engineering and management in the industry on 16th November 2019

Publication of Research Papers by the Faculty Members

Nandini R, Assistant professor Department of mechanical engineering, "Energy-harvesting enhancement in composites of microwave-exfoliated KNN and multi-wall carbon nano-tubes" Bulletin of material science on august 5 2019.

Mr. Keerthi Kumar N, Department of Mechanical Engineering, "Impact of Injection Timing on Simarouba Seed Oil-Fuelled CI Engine", 4th International Conference on Advances in Materials and Manufacturing Applications on 29th Aug 2019 organized by AMRITA School of Engineering, Bangalore.

S. Nithya Poornima, Multipurpose Agribot ,International Journal of Latest Technology in Engineering, Management & Applied Science (IJLTEMAS) Volume VIII, Issue X, October 2019 | ISSN 2278-2540

Dr. K.M.Sathish Kumar, G.L.Anantha Krishna , Analytical and Finite Element Solution of Tractor Brake Link to Achieve Weight and Cost Reduction, Applied Mechanics and

Materials ISSN: 1662-7482, Vol. 895, pp 307-312
doi:10.4028/www.scientific.net/AMM.895.307© 2019 Trans Tech Publications Ltd,
Switzerland

Dr. K. M. Sathish Kumar and Mr. Chethan D, "INFLUENCE OF PROCESS PARAMETERS ON FRICTION STIR WELDED AA 6082-Cu JOINTS" International Journal of Mechanical and Production Engineering Research and Development (IJMPERD), ISSN (P): 2249–6890; ISSN (E): 2249–8001 Vol. 9, December 2019, pp. 114–124.

Dr. K. M. Sathish Kumar and Mr. G.L. Anantha Krishna , "Analytical and Finite Element Solution of Tractor Brake Link to Achieve Weight and Cost Reduction" International Journal of Applied Mechanics and Materials, ISSN: 1662-7482, Vol. 895, November 2019, pp. 307-312.

Dr. K. M. Sathish Kumar and Yashavantha Kumar G.A, "Development of MATLAB Codes to Find the Natural Frequencies of a Composite Structure" International Journal of Applied Mechanics and Materials, ISSN: 1662-7482, Vol. 895, November 2019, pp. 319-323.

Department Co-curricular Activities

The Students of 3 rd and 5 th sem, Dept. of ME watched the live telecast of Fit India Movement, a nationwide movement on 29th August 2019 in CR 202. This program launched by Prime Minister Narendra Modi encouraged people to remain fit and healthy by including physical and sports activities in their daily life.



Fit India Movement

Dr Nandini.R Assistant professor Mechanical Department organised an outcome based activity done for open elective -Project Management for SEM V students in the month of august 2019.The class was divided into 6 groups and 6 case studies on project management were given. Each team had a group discussion on the case study and they wrote a report on how the project was conducted right from planning to decline phase of an project. They understood the theoretical concept behind project management and they were able to map it accordingly to the practical case study of an organization.

Mr. G.L.Anantha Krishna, Assistant Professor, Mechanical Engineering Department carried out OBE activity in the course named Design of Machine Elements – I (17ME54). The activity was demo on "strain energy" and was conducted on 28/8/2019 for 5th semester students. The objective of the activity was to make students understand the concept of strain energy which would be useful for students to understand the design for impact strength. Also, concept of strain energy will be useful in understanding certain subjects in later semesters as well. The POs mapped are PO2, PO9, PO10 and PO12



OBE on concept of strain energy

Mrs S.Nithya Poornima Assistant Professor, Department of Mechanical Engineering organised an OBE activity in the course Automation and Robotics (17ME5634). The activity was "think pair and share "on the topic Discrete manufacturing and continuous manufacturing on 26th August 2019. The main aspect of the activity was a video on the topic was shown and a case study was given for them to pair and discuss to analyse the difference in the manufacturing process. The video enabled them to understand the concept in a better perspective as they could visualise the processes. The POs mapped are PO2, PO9, PO10 and PO12



Think pair and share on the topic Discrete manufacturing and continuous manufacturing

Students of 3rd semester Mechanical Engineering visited HMT Machine Tools.Ltd, Jalahalli, Bangalore on 28/08/2019 in which they were exposed to pattern making, metal casting, machining centre and assembly section.



HMT Industrial Visit

Mr. O.Gurumurthy, Assistant Professor, Mechanical Engineering Department have carried out OBE activity for the course Fluid Power Systems (15ME72). This is a demo on "Fluid power systems and their components (hydraulic and pneumatic system)" organised on 04/09/2019 for 7th Semester students.

Demo conducted for students to learn about the fundamental concepts of fluid power systems and their important components. Which includes both pneumatic (air) and hydraulic (liquid) systems. Both systems contain four basic components: reservoir/receiver, pump/compressor, valve, and cylinder/motor. Students learn background information about fluid power—both pneumatic and hydraulic systems—

including everyday applications (bulldozers, excavators, automatic door control system, vehicle brakes).The above OBE activity was mapped to the Programme Outcomes, PO1 (Engineering Knowledge) and PO5 (Modern Tool usage).

Dr.K.M.Sathish Kumar, Head of the Department, Mechanical Engineering organised a Blended think pair and share activity on the topic Motors for the students of 7th sem for the subject Mechatronics on 27th September 2019. Students were engaged in showing the video on Motors and were given time to think to answer the questions asked. Think Pair and share enhances students' in oral communication skills as they discuss their ideas with one another. This strategy helps students become active participants in learning.



Blended think pair and share activity on the topic Motors

Mrs. Tejaswini.B.J, Assistant Professor, Dept. of ME conducted a poster presentation on "Directive Principles of State Policy" for 3rd sem 'A' Section, CSE on 1st October 2019 from 9.30 to 10.30 am for the subject Constitution of India Professional Ethics and Cyber Law. All the students were divided into 6 groups and each group prepared a poster representing two directives under Part 4 of the Indian constitution and explained the significance and measures taken by the governments to implement the same.



POSTER PRESENTATION

Mr G.L.Anantha Krishna, Department of Mechanical Engineering organised a Field study on job analysis for the Subject Human Resource Management (17ME553) for the 5th sem students on 12 September 2019. This OBE was conducted to enable them communicate the concept of job description and job specifications their by attaining PO9, PO10

Dr. Nandini R, Assistant Professor, Mechanical Engineering Department carried out OBE activity in the course named Project Management (17ME564). The activity was based on analyzing how to perform resource planning in a real time practical world application. It was conducted on 21/19/2019 for 5th semester open elective students. The objective of the activity was to make students understand the concept of resource planning in project management. This helps the students to understand how actually resource allocation and planning is performed practically by various organizations. This helps the students to understand the concept of resource planning in reality so that they can implement the theoretical concepts at application level for any type of projects. The POs mapped are PO2, PO9, PO10 and PO12



OBE activity for the course Project Management

The 5th and 7th semester students of mechanical Engineering visited the Bellary thermal power corporation, Bellary, on 30th September 2019. Faculty Dr. N .Suresh and Prof. Madhu M.C coordinated the Industrial visit. A total of twenty eight students ,who attended this visit were exposed to the practical functioning of engines, turbines, boilers and cooling towers of the thermal power plant.



Students with faculty Dr.N.Suresh and Mr.Madhu M.C at the Bellary Thermal Power station

The students of 1st semester I section visited the Visvesvaraya Industrial and Technological museum on 11th October 2019. As many as 43 students were benefited from the visit which gave them practical exposure to boilers and turbines .They were accompanied by Prof.Madhu .MC , who coordinated the event.



Visvesvaraya Industrial and Technological museum visit

The Parent- Teachers meeting was organized on 12th October 2019 in CR 202 with the parents of Mechanical Engineering students. The meeting started at 10.00AM with a welcome address by the HOD. All the parents were briefed about the teaching methods adapted in the department like flip class, quiz, student's presentation, invited talks etc and parent have expressed their appreciation for the same. The details of open course that is being offered in this semester were briefed to the parents and requested to

ensure their wards attend the same which will be held from 22nd Oct 2019 to 26th Oct 2019. There were about 21 parents in all who attended the meeting and the enquiries which were raised by them have been responded by the concerned faculty members and HoD.



Photos of Parent Teacher Meeting conducted on 12th Oct 2019.

Parent Teacher Meeting was held on 02nd November 2019 for parents of first year students exclusively. The Head of the Department put forth all the points regarding Academics such as Attendance, Internal assessment Marks, Internship, OBE Activities, Industrial visit etc....



Head of the Department addressing the parents

The Department of Mechanical Organised an Industrial Visit to IMTMA Technology, BIEC, Bengaluruon 11th November 2019 for the Course Fluid Power Systems and Mechatronics of VII Semester students. The Faculty Coordinators were O.Gurumurthy, Assistant Professor, S.Nithya Poornima Assistant Professor The Purpose of Industrial visit was to provide exposure to the industrial activities and current technology, to understand how the theoretical learning converted to practical, to interact the students with industry personals and to prepare the students for the selection of carrier path.



Industrial Visit to IMTMA Technology

Dr. Nandini R, Assistant Professor, Mechanical Engineering Department carried out an OBE activity in the course named Project Management (17ME564). The activity was based on analyzing how to analyze a risk which might come accidental when a project is going on in any company / organization. This activity also dealt about how to predict the risk which might come in the near future as the project gets progressed. It was conducted on 5/11/2019 for 5th semester open elective students. The objective of the activity was to make students understand the concept of project risk management and how to analyze and diagnose project risk management. This helps the students to plan the risk which might come in near future when the project is going on, how to overcome these risks and to solve them based on risk factor. This helps the students to understand the flow for the project risk management procedure and how and when to implement it. The POs mapped are PO2, PO9, PO10 and PO12



OBE Activity on Project Risk Management in an Automotive Industry

Mrs S Nithya Poornima Assistant Professor, Mechanical Engineering Department Organised a Flip Class for the course titled Financial Management (15ME743). The activity was based on Determinants of Working Capital Management.. after the briefing, the students were ready to process the information, explore the topic and generate ideas, individually. This activity enabled the student in case analysis, brainstorming, discussion, peer teaching, co-writing, and co-creating projects. The POs mapped are PO2, PO9, PO10 and PO12



Flip Class on Determinants of Working Capital Management