# 7th Semester Open Elective Subjects' Information for Online Registration- ODD Sem 2022-23
## https://bmsitm.gnums.in/ (After Login-> Select Elective Registration in the main menu-> Select Elective Group in the drop-down menu)

| # | Dept | Course Title (click to view the syllabus) | Subject Code | Faculty name | Which Branch of Students CAN study this Open elective ? | Which Branch of Students SHOULD NOT study this Open elective ? | Write up about the Courses offered |
|---|---|---|---|---|---|---|---|
| 1 | ECE | **Communication Theory** | 18EC751 | Prof. N Rashmi | CSE,ISE,AIML, EEE,CIVIL | ECE,ETE | Rapid Development in electronic communication systems is changing the face of human civilization, especially due to the convergence of wireless voice /data communication and internet technologies. Analog and digital communication is a core subjects of Electronics and communication Engineering . The objectives of the course are to expedite learning the fundamentals of communication systems at an introductory level and in an effective manner. This course deals with mathematical nature of communication theory and pointing out practical relevance of the theory wherever it is appropriate to do so.This course covers analog and digital communications, Modulation and demodulation techniques used in analog, pulse, digital communication and cellular communication. This course will be useful for All undergraduate engineering students of electrical and Electronics engineering, Computer science and engineering, Information science engineering. |
| 2 | ECE | **Neural Networks** | 18EC752 | Prof. Chandraprabha R | CIVIL,ME,EEE, CSE,ISE | ECE,ETE,AIML | Neural networks have gone through a recent rise in popularity, achieving state-of-the-art results in various fields, including image classification, speech recognition, and automated control. The objectives of the course are to understand the basics of neural network,gain the knowlegde on genralisation function approximation of various ANN archiectures,develop the knowledge on unsupervised and reinforcement learning approaches using neural network. |
| 3 | ECE | **ARM Embedded Systems** | 18EC753 | Dr. Anil Kumar D | CIVIL, CSE,ISE, AIML,EEE,ME | ECE, ETE | Objective : The objective of the course is to provide understanding of the techniques essential to the design and implementation of embedded systems using suitable hardware and software tools. To train the students on the Arm Cortex microcontroller which has good capacity for processing real world signals. To allow people in embedded system sectors to learn programming/Interfacing peripherals to ARM cortex based microcontroller and learn troubleshooting of microcontroller based Embedded electronic systems/products. Outcomes of Course: Upon successful completion of this course, the student should be able to:<br>□ Understand the main features of the ARM Cortex based Embedded System development environment<br>□ To understand the hardware interfacing of the peripherals to ARM Cortex system.<br>□ Design new embedded systems using ARM Cortex system.<br>After the completion of the course, the students will be specialized in Embedded System Design using ARM Cortex. |
| 4 | CSE | **Introduction to Big Data Analytics** | 18CS751 | Dr. Usha B A | CIVIL, ECE, EEE, ETE,ME | CSE,ISE,AIML | Big data analytics is the use of advanced analytic techniques against very large, diverse data sets that include structured, semi-structured and unstructured data, from different sources, and in different sizes from terabytes to zettabytes. Organizations can use big data analytics systems and software to make data-driven decisions that can improve business-related outcomes. The benefits may include more effective marketing, new revenue opportunities, customer personalization and improved operational efficiency. |
| 5 | CSE | **Python Application Programming** | 18CS752 | Prof. Rajesh N V | CIVIL, ECE, EEE, ETE,ME | CSE,ISE,AIML | Python is a computer programming language often used to build websites and software, automate tasks, and conduct data analysis. Python is a general-purpose language, meaning it can be used to create a variety of different programs and isn't specialized for any specific problems. This versatility, along with its beginner-friendliness, has made it one of the most-used programming languages today. In this course you study about basic programmng constructs like strings, files, Lists, Dictionaries and Regular expressions and implement Object Oriented Programming concepts in Python, Web Services , network and Database Programming in Python. |

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| 6 | CSE | Python Application Programming | 18CS752 | Prof. Durga Devi G Y | CIVIL, ECE, EEE, ETE,ME | CSE,ISE,AIML | Python is a computer programming language often used to build websites and software, automate tasks, and conduct data analysis. Python is a general-purpose language, meaning it can be used to create a variety of different programs and isn't specialized for any specific problems. This versatility, along with its beginner-friendliness, has made it one of the most-used programming languages today. In this course you study about basic programmng constructs like strings, files, Lists, Dictionaries and Regular expressions and implement Object Oriented Programming concepts in Python, Web Services , network and Database Programming in Python. |
| 7 | CSE | Introduction to Artifical Intelligence | 18CS753 | Prof. Muneshwara M S | CIVIL, ECE, EEE, ETE,ME | CSE,ISE,AIML | Artificial intelligence (AI) is currently one of the hottest buzzwords in tech and with good reason. The last few years have seen several innovations and advancements that have previously been solely in the realm of science fiction slowly transform into reality. Experts regard artificial intelligence as a factor of production, which has the potential to introduce new sources of growth and change the way work is done across industries. |
| 8 | ISE | Introduction to Big Data Analytics | 18CS751 | Dr Kshama | CIVIL, ECE, EEE, ETE,ME | CSE,ISE,AIML | With today's technology, companies are able to collect tremendous amounts of data with relative ease. Indeed, many companies now have more data than they can handle. However, the data are usually meaningless until they are analyzed for trends, patterns, relationships, and other useful information. Introduction to big data analytics course illustrates a variety of methods, from simple to complex, to help you analyze data sets and uncover important information. |
| 9 | ISE | Python Application Programming | 18CS752 | Dr Prakash G L | CIVIL, ECE, EEE, ETE,ME | CSE,ISE,AIML | Python programming has become an imperative language for new-age technologies such as AI, ML, Data Science, and many others. It is a simple yet powerful programming language that could be used for many tasks an engineer needs to accomplish. This course will bring awareness of the importance of python and applications of python in solving engineering and social problems. This course includes python basics, core data structures, pattern matching and regular expressions, working with files, object-oriented concepts, and web scraping. |
| 10 | ISE | Python Application Programming | 18CS752 | Dr Geeta Patil | CIVIL, ECE, EEE, ETE,ME | CSE,ISE,AIML | Python programming has become an imperative language for new-age technologies such as AI, ML, Data Science, and many others. It is a simple yet powerful programming language that could be used for many tasks an engineer needs to accomplish. This course will bring awareness of the importance of python and applications of python in solving engineering and social problems. This course includes python basics, core data structures, pattern matching and regular expressions, working with files, object-oriented concepts, and web scraping. |
| 11 | ISE | Introduction to Artifical Intelligence | 18CS753 | Dr. Sudhamani M V | CIVIL, ECE, EEE, ETE,ME | CSE,ISE,AIML | This course will deal with the fundamental principles of Artificial Intelligence including knowledge representation, reasoning, decision making and programming techniques. The course will also cover the principles of learning concepts which underpin many popular learning techniques, as well as support developing an understanding of the theoretical relationships between these algorithms. |

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| 12 | ME | Energy and Environment | 18ME751 | Dr. Shripad Diwakar | CIVIL, ECE, EEE, ETE, CSE, ISE, AIML | ME | The importance of Environmental Studies cannot be disputed. The need for sustainable development is a key to the future of mankind. The degradation of our environment is linked to continuing problems of pollution, loss of forests, solid waste disposal, issues related to economic productivity, and ecological security. The increasing levels of global warming, ozone layer depletion and a serious loss of biodiversity have also made everyone aware of the growing environmental concerns. It is clear that, no citizen of the earth can afford to be ignorant of environmental issues. Environmental management has become a part of health care sector. Managing environmental hazards and preventing possible disasters has become an urgent need. With these objectives, In Energy and Environment open elective course, students are able to gain the knowledge in basic concepts of energy, its distribution and general scenario, environmental eco-systems and its need for awareness, to identify the various types of pollution and their effects, social issues associated with the environment and their acts. |
| 13 | ME | Automotive Engineering | 18ME752 | Dr. HK Govindaraju | CIVIL, ECE, EEE, ETE, ISE, CSE, AIML | ME | The course on Automotive Engineering gives a practical insight into the various automobile systems and the parts of the automobile. It gives an opportunity for the students to know about the Petrol and diesel engine working , The variuos cylinder arrangements, the combustion process in IC engines. further the steering system, the cooling and lubrication ,Ignition, suspension systems would be studied in depth. The use of superchargers and turbochargers along with the fuel system for the engine gives a practical insight to the students.The drive system and brakes in automobiles plays a vital role in its functioning . The concept of emission control in todays world ,where the carbon footprint  is considered will also be dealt in this course. |
| 14 | ME | Automotive Engineering | 18ME752 | Madhu MC | CIVIL, ECE, EEE, ETE, ISE, CSE, AIML | ME | The course on Automotive Engineering gives a practical insight into the various automobile systems and the parts of the automobile. It gives an opportunity for the students to know about the Petrol and diesel engine working , The variuos cylinder arrangements, the combustion process in IC engines. further the steering system, the cooling and lubrication ,Ignition, suspension systems would be studied in depth. The use of superchargers and turbochargers along with the fuel system for the engine gives a practical insight to the students.The drive system and brakes in automobiles plays a vital role in its functioning . The concept of emission control in todays world ,where the carbon footprint  is considered will also be dealt in this course. |
| 15 | EEE | Electric Vehicles | 18EE752 | Dr Madhu Palati | CIVIL ECE, ME, ETE, ISE, CSE, AIML | EEE | Electric Vehicles are more more advantages when compared with conventional vehicles. These are better for environment.They emit fewer greenhouse gases and air pollutants than petrol or diesel vehicles. Electric mobility will also contribute to balancing energy demand, energy storage and environmental sustainability.This course gives brief idea about Electric Vehicles and its importance. Vehicle mechanics, propulsion system, Hybrid Electric Vehicles, Types of Batteries used, other storage systems like Fuel cell and supercapacitors. Types of Motors used in Elctric vehicles and different speed control techniques of the electric motors.Main design parameters of the major components used in Hybrid Electric vehicle. |
| 16 | EEE | Electric Vehicles | 18EE752 | Dr Sanjay Lakshminarayan | CIVIL, ECE, ME, ETE, ISE, CSE, AIML | EEE | The syllabus and contents are as follows: The course will begin with the understanding of the kinetics and dynamics of vehicles in general. Tractive power and energy involved to be studied. Electric vehicles and hybrid electric vehicles configurations and performance, to be studied. Batteries or energy storage systems are dealt with from lead acid batteries to lithium ion batteries to supercapacitors. Different types of electric motors or propulsion systems. Some concepts of power electronics is introduced such as motor drive technology. The overall design of fully electric and hybrid electric vehicles is dealt with including the sizing and rating of the component motors, batteries and drive trains |

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| 17 | EEE | Electical Energy Conversation and Auduiting | 18EE754 | Mr. Rajnikanth V K | CIVIL, ECE, ME, ETE, ISE, CSE, AIML | EEE | This course covers topics such as energy conservation act and energy conservation. It also covers energy efficient lighting design. The student will learn power factor improvement techniques, energy efficiency in HVAC systems. In addition The economic aspects such as payback period calculations, life cycle costing analysis is covered in this course. |
| 18 | ETE | Communication Theory | 18EC751 | Mrs. Sowmya Shree M.S | CIVIL,ME,EEE, CSE,ISE, AIML | ECE,ETE | The Course is put in a very simple manner , easy to understand which begins with basic understanding of communication for transmission of data followed by the different modulation techniques that are necessary to send the correct information to the receiver both in analog and digital communication. Further informayion coding techniques are studied  which is used to code the data and send the information. Lastly communication using wireless transmission is studied which is the trend and need of the present day life. |
| 19 | ETE | Neural Networks | 18EC752 | Prof. Chandraprabha .R | ME,CSE,ISE, EEE,CIVIL | ECE,ETE,AIML | Neural networks have gone through a recent rise in popularity, achieving state-of-the-art results in various fields, including image classification, speech recognition, and automated control. The objectives  of the course are to  understand the basics of neural network,gain the knowlegde on genralisation function approximation  of various ANN archiectures,develop the knowledge on unsupervised and reinforcement learning approaches using  neural network. |
| 20 | ETE | Neural Networks | 18EC752 | Dr. Seema Singh | ME,CSE,ISE, EEE,CIVIL | ECE,ETE,AIML | Neural networks have gone through a recent rise in popularity, achieving state-of-the-art results in various fields, including image classification, speech recognition, and automated control. The objectives  of the course are to  understand the basics of neural network,gain the knowlegde on genralisation function approximation  of various ANN archiectures,develop the knowledge on unsupervised and reinforcement learning approaches using  neural network. |
| 21 | CIVIL | Environmental Protection and Management | 18CV753 | Dr.Rajesh Gopinath | EEE, ECE, ME, ETE, ISE, CSE, AIML | CIVIL | Environmental Protection and Management as a course is going to enhance one's knowledge upon the concepts such as Environmental Principles, Standards and Cleaner Technologies. It also brings in formidable understanding about EMS as a tool alongside it's Applications. |
| 22 | CIVIL | Environmental Protection and Management | 18CV753 | Mrs .Shimna Manohar | EEE, ECE, ME, ETE, ISE, CSE, AIML | CIVIL | Environmental Protection and Management as a course is going to enhance one's knowledge upon the concepts such as Environmental Principles, Standards and Cleaner Technologies. It also brings in formidable understanding about EMS as a tool alongside it's Applications. |
| 23 | AI & ML | Introduction to Artifical Intelligence | 18CS753 | Dr.Anupama H S | CIVIL, ECE, EEE, ETE,ME | CSE,ISE,AIML | The basic objective of AI (also called heuristic programming, machine intelligence, or the simulation of cognitive behavior) is to enable computers to perform such intellectual tasks as decision making, problem solving, perception, understanding human communication (in any language, and translate among them). |