**VAAGDEVI COLLEGE OF ENGINEERING**

**(AUTONOMOUS)**

**ELECTRICAL AND ELECTRONICS ENGINEERING**

**COURSE OUTCOMES FOR B.TECH-EEE R20 FOR THE YEAR 2020-2021**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Course Outcome** | **Semester** | | | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 4** | |
| **I Sem** | | | | **Linear Algebra and Complex Variable** | | | | | | | | | | | **B20MA03** | | | | | | | **L/T/P :3/1 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Understand the principles of matrix to calculate the characteristics of system of linear equations using multiple methods | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Determine Eigen values, Eigenvectors of matrices | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Calculate Partial derivatives, extreme of functions of multiple variables | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Analyze the complex function with reference to their analyticity and evaluate using integral theorems | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Expand the complex function using power series | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | **Semester** | | | | **Subject Name** | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | | | | **Credits: 4** | |
| **I Sem** | | | | **Programming For Problem Solving** | | | | | | | | **B20CS01** | | | | | | | **L/T/P : 3/1 /0** | | | | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Understanding how problems are posed and how they can be analyzed for obtaining solutions | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Understanding the fundamentals of C programming | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Learning of sequencing, branching, looping and decision-making statements to solve scientific and engineering problems. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Implementing different operations on arrays and creating and using of functions to solve problems | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Design and implement different types of file structures using standard methodology. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | **Semester** | | | | **Subject Name** | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | | | | **Credits: 3** | |
| **I Sem** | | | | **Fundamentals of Mechanical Engineering** | | | | | | | | **B20ME06** | | | | | | | **L/T/P : 3/0 /0** | | | | | | |
| By the end of the course, students will be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | To understand the various sources of energy and basic terminology of Mechanical systems | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | To understand the various types of automobile engines | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | To understand and appreciate significance of mechanical engineering in different fields of engineering | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | To understand power transmission elements, and applications of various engineering materials | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | To understand various manufacturing processes. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | **Semester** | | | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **I Sem** | | | | **Chemistry** | | | | | | | | | | | **B20CH02** | | | | | | | **L/T/P :3/0 /0** | | | |
| The basic concepts included in this course will help the student to gain: | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | The knowledge of electrochemical cells, different batteries | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | The required principles and concepts of corrosion, control methods. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | The knowledge of water treatment. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | The knowledge of polymers and their importance in day to day life | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | The required principles and concepts of passive devices. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | **Semester** | | | | **Subject Name** | | | | | | | | | | | | **Subject Code** | | | | | | **No. of Hours** | | | | **Credits: 1.5** | |
| **I Sem** | | | | **English Language and Interactive Communication Skills Lab** | | | | | | | | | | | | **B20EN02** | | | | | | **L/T/P :0/0 /3** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Understand the nuances of English language through audio-visual experience and group activities. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | speak with clarity and confidence which in turn enhances their employability skills | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | develop their listening skills so that they may appreciate its role in developing LSRW skills language and improve their pronunciation | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Involve the students in speaking activities in various contexts. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | **Semester** | | | | **Subject Name** | | | | | | | | | | | | **Subject Code** | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **I Sem** | | | | **Programming for Problem Solving Lab** | | | | | | | | | | | | **B20CS02** | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | Understand basic structure of the C Programming, data types, declaration and usage of variables, control structures and all related concepts. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | Understand any algorithm and Write the C programming code in executable form | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | Implement Programs using functions, pointers and arrays | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | Use the pre-processors to solve real time problems | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | Use file structures and implement programs on files | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | **Semester** | | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1.5** | |
| **I Sem** | | | **Engineering and IT Workshop** | | | | | | | | | | | **B20ME03** | | | | | | | **L/T/P :0/0 /3** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | Know the fundamental knowledge of House wiring and soldering and their usage in real time Applications. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | Gain knowledge on electronic components and measuring instruments | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | Use basic concepts of computer hardware for assembly and disassembly. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | Use Microsoft tools for exercise | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | **Semester** | | | **Subject Name** | | | | | | | | | | | | **Subject Code** | | | | | | **No. of Hours** | | | | **Credits: 4** | |
| **II Sem** | | | **Differential Calculus and Numerical Methods** | | | | | | | | | | | | **B20MA05** | | | | | | **L/T/P :3/1 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | Apply the fundamental concepts of ordinary differential equations to real time problems. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | Find the complete solution of a non-homogeneous differential equations and applying its concepts in solving physical problems of Engineering | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | Analyse line, surface and volume integrals using fundamental theorems. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | Find a better approximate root of a given equation. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | Compute the differential equation using numerical techniques. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | **Semester** | | | **Subject Name** | | | | | | | | | | | | **Subject Code** | | | | | | **No. of Hours** | | | | **Credits: 4** | |
| **II Sem** | | | **Electrical Circuits-I** | | | | | | | | | | | | **B20EE04** | | | | | | **L/T/P :3/1 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | Learn basics of electrical circuits such as laws, transformation and network reduction techniques. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | Explore the basic principles and concepts involved in AC circuits and analyze power in series and parallel AC circuits | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | Learn the concepts of resonance and the importance of locus diagrams. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | Understand various network theorems and its applications in electrical circuits. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | Analyze the series and parallel magnetic circuits with basic magnetic principles and laws of electromagnetic induction. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | **Semester** | | | **Subject Name** | | | | | | | | | | | | **Subject Code** | | | | | | **No. of Hours** | | | | **Credits:4** | |
| **II Sem** | | | **Basic Electronic devices** | | | | | | | | | | | | **B20EC01** | | | | | | **L/T/P :3/1 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | Analyze the characteristics of the PN junction diode and Zener diode | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | Design the rectifiers with and without filters for specified DC voltage. | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | Illustrate the voltage- current characteristics of Junction Transistor and different configurations of transistor | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | Design and analyze the different biasing circuits and amplifier circuits | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | Acquire knowledge about the construction, theory and characteristics of FET and MOSFET | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | **Semester** | | | **Subject Name** | | | | | | | | | | **Subject Code** | | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **II Sem** | | | **Physics** | | | | | | | | | | **B20PH02** | | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | Understands the materials on the basis of energy band gap and its device applications | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | Describes the characteristics and working of lasers and their use in various fields | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | Analyse and apply the concepts of Electric Fields for accurate determination of Electric flux, Electric flux density, energy stored in electric fields etc | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | Apply the concepts of the light propagation in optical fibres in optical communication systems | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | Classify and enumerate the properties of magnetic and Dielectric materials and identifies their role in specific engineering applications | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | **Semester** | | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits:1.5** | |
| **II Sem** | | | **Electrical Engineering Practice Lab** | | | | | | | | | | | **B20EE05** | | | | | | | **L/T/P :0/0 /3** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Identify and find the various components and equipment used for electrical engineering applications | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Understand the staircase wiring and ceiling fan wiring | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Develop the simple electric circuits on bread board and PCB. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Understand the earthing connections and DOL starter connection | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **II Sem** | | **Physics Lab** | | | | | | | | | | | **B20PH05** | | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Estimate the frequency of tuning for and AC supply with the help of stretched strings | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Analyze as well as compare the intensity distribution of interference and diffraction patterns | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Draw the characteristics of electrical and electronic circuits and evaluate the dependent parameters | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Explore and understand the applications of semiconducting devices | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Evaluates the wavelength and radius of curvature of Plano convex lens by Newton‘s rings | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | **Semester** | | | **Subject Name** | | | | | | | **Subject Code** | | | | | | | | | | **No. of Hours** | | | **Credits: 2** | | | |
| **II Sem** | | | **Engineering Drawing** | | | | | | | **B20ME01** | | | | | | | | | | **L/T/P :0/0 /4** | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand various commands, object properties in AUTOCAD | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Analyse the Projections of Points. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand the projections of solids | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Estimate the use of drawings, dimensioning, scales and conic sections | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Modify the applications of this knowledge in computer graphics. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | Compare the Conversion of Isometric views to Orthographic views | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | **Credits: 1.5** | | |
| **II Sem** | | | **Basic Electronic devices Lab** | | | | | | | | | | **B20EC02** | | | | | | | **L/T/P :0/0 /3** | | |
| 1 | | | Demonstrate the characteristics and operation of Semiconductor diodes. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Analyze different rectifier circuits | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Demonstrate V-I characteristics of BJT, FET and UJT | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Design simple electronic circuits | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **III Sem** | | | **Electrical Circuits – II** | | | | | | | | | | | **B20EE05** | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand the basics of network representation, method of analyzing the network and duality of network. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Analyze balanced and unbalanced three phase circuits and measure voltage, current and power in three phase star and delta connections | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Study the transient response of series and parallel RLC circuits for DC and sinusoidal excitations. Analyze the response for step, ramp, impulse etc., using Laplace transformation | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Study different types of network functions and evaluate the network parameters in two port network using transformed variables | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Learn about different types of filters and Fourier analysis applied to AC circuits | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **III Sem** | | | **Signals and Systems** | | | | | | | | | | **B20EC03** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Analyze the spectral characteristics of continuous-time periodic signals using Fourier series | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Demonstrate and apply Fourier transform on various signals. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Apply the Laplace transform and Fourier transform for the analysis of continuous-time signal | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Analyse systems based on their properties and determine the response of LTI system. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Understand the concepts of convolution and correlation of signals. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **III Sem** | | **Electrical Machines-I** | | | | | | | | | | | **B20EE07** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Evaluate the stored and converted energy and also exerted force in electromechanical energy conversion devices. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Able to analyze and design the types of dc generators | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Able to select appropriate D.C Generator to meet the requirements of the application in industry | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | To understand the characteristics and concept s of speed control. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Able to Test the performance and select appropriate D.C machine to meet the requirements of the application in industry. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | | **Subject Code** | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **III Sem** | | **Electromagnetic Fields** | | | | | | | | | | | | **B20EE08** | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Analyze the relation between the electric field and the magnetic field, about the various laws such as EFI, Potential and other concepts of these fields | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Understand the behavior of conductors and dielectrics, their boundary conditions, Maxwell’s equations with respect to electrostatics. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand the magnetic field concepts using Biot-Savart law and Ampere's law | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Analyze the relation between two or more conductors when subjected to magnetic fields | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Understand the concepts of time varying fields in both electric and magnetic fields and their relationship in evaluating power | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | **Subject Code** | | | | | | | | | | **No. of Hours** | | | | **Credits: 2** | |
| **III Sem** | | | **Python Programming** | | | | | | | **B20CS03** | | | | | | | | | | **L/T/P :2/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Defining the fundamentals of writing Python scripts. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Expressing the Core Python scripting elements such as variables and flow control structures. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Apply Python functions to facilitate code reuse. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Extending how to work with lists and sequence data | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Implement file operations such as read and write and Adapting the code robust by handling errors and exceptions properly | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | **Semester** | | | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 2** | |
| **III Sem** | | | | **English for Effective Communication** | | | | | | | | | | | **B20EN01** | | | | | | | **L/T/P :2/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Skim and scan the digital text to summarize it for future reference. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Read the text to make notes according to their needs | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Use English language effectively in spoken and written forms. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Communicate confidently in various contexts and different cultures. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Acquire basic proficiency in English including reading and listening comprehension, writing and speaking skills. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **III Sem** | | **Electrical Circuits Lab** | | | | | | | | | | | **B20EE09** | | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Explain the concept of circuit laws | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Verify network theorems | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Determine Z, Y and ABCD parameters for a given two port network. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Evaluate the time response and frequency response characteristics of RLC series circuit and their resonance conditions. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **III Sem** | | **Python Programming Lab** | | | | | | | | | | | **B20CS07** | | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Expressing the Core Python scripting elements such as variables and flow control structures. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Apply Python functions to facilitate code reuse | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Extending how to work with lists and sequence data. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Implement file operations such as read and write and Adapting the code robust by handling errors and exceptions properly | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **IV Sem** | | | **Power Systems – I** | | | | | | | | | | | **B20EE06** | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Gain the knowledge on operation of Hydro Electric generation. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Acquire and interpret fundamental concepts Thermal generation | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand various economic aspects of the Power system and tariff | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Acquire knowledge on power system distribution systems and substation | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Understand design of underground cables | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **IV Sem** | | | **Electrical Machines-II** | | | | | | | | | | | **B20EE12** | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand the concepts and performance of single phase transformer. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Test the performance of single phase Transformer | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Choose a suitable three phase transformer based on its application and also convert three phase to two phases or vice versa. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Understand the concepts of Construction, operation characteristics, testing (concept of circle diagram) and speed. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Analyze speed torque characteristics and control the speed of induction motors | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **IV Sem** | | | **Electrical Measurements and Instrumentation** | | | | | | | | | | **B20EE13** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Different types of measuring instruments their construction operation and characteristics | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Resistance voltage current measurements through potentiometers, voltage current measurements through instruments transformers. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Power and energy measurements through watt and energy meters with examples | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Resistance measurements through DC bridges, capacitance and inductance measurements through AC bridges, different types of transducers. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Measurement of frequency and phase through CRO, range extension of measuring instruments and different types of errors & their reduction methods in measuring instruments. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | **Subject Code** | | | | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **IV Sem** | | **OOPS through JAVA** | | | | | | | | **B20CS27** | | | | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand the use of OOP concepts and solve real world problems using OOP techniques. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Solve the inter-disciplinary applications using the concept of inheritance. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Develop robust and faster applications by applying different exception handling mechanisms. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Understand the multithreading concepts and develop efficient applications | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Design GUI based applications and develops applets for web applications. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **IV Sem** | | **Analog and Digital Electronics** | | | | | | | | | | | **B20EC21** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Construct and analyze the single stage transistor amplifier. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Design and construct the negative feedback amplifiers and oscillators according to the required specifications. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand the Op Amp and its applications. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Design different combinational circuits using minimization techniques | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Analyze basic sequential circuits and also able to understand various ADC and DAC techniques. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **IV Sem** | | | **Analog and Digital Electronics Lab** | | | | | | | | | | **B20EC22** | | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand the applications of diode as integrator, differentiator, clipper and clamper circuits. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Design circuits using operational amplifiers for various applications. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Analyze the VCO circuit. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Understand and implement DAC conversions using OP-AMP. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | **No. of Hours** | | | | | **Credits: 1.5** |
| **IV Sem** | | | **Electrical Machines Lab-I** | | | | | | | | | | | **B20EE15** | | | | | | **L/T/P :0/0 /3** | | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Select range of apparatus based on the ratings of DC Machines. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Determine Characteristics of DC machines by conducting tests | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Evaluate the efficiency of the machine by analyzing test results. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Study speed control methods for dc machines | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1.5** | |
| **IV Sem** | | | **OOPS through JAVA Lab** | | | | | | | | | | **B20CS28** | | | | | | | **L/T/P :0/0 /3** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Use the Java SDK environment to create, debug and run simple Java programs. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Write Java programs to implement error handling techniques using exception handling | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Develop multithreaded applications with synchronization. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Design simple Graphical User Interface applications and event driven programming | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | | **Credits: 3** |
| **V Sem** | | | **Electrical Machines-III** | | | | | | | | | | **B20EE15** | | | | | | | **L/T/P :3/0/0** | | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | Demonstrate basic concepts of AC machines. | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | Analyze the concepts of regulation of synchronous generators | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | Evaluate performance characteristics of synchronous machines. | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | Analyze the operating characteristics of synchronous motors | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | Identify the Construction, operation and characteristics of single-phase motor and special machines | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | | **Semester** | | | | | **Subject Name** | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **V Sem** | | | | | **Power Electronics** | | | | | | | **B20EE16** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | Understand the differences between signal level and power level devices | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | Examine single phase-controlled rectifier circuits. | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | Understand three phase-controlled rectifier circuits. | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | Learn the operation of DC-DC choppers | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | Study the operation of DC-AC converters and AC-AC voltage regulators | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | | **Semester** | | | | | **Subject Name** | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **V Sem** | | | | | **Control Systems** | | | | | | | **B20EE17** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | Understand the concept of feedback and analyze the control system components by their Mathematical modeling | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | Estimate the time domain specifications and steady state error | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | Apply various time domain and frequency domain techniques to assess the system performance. | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | Improve the system performance by designing a suitable controller and/or a compensator for a specific application | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | Test system Controllability and Observability using state space representation and applications of state space representation to various systems. | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | | **Semester** | | | | | **Subject Name** | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **V Sem** | | | | | **Power Systems-II** | | | | | | | **B20EE18** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | Gain knowledge on computing transmission line parameters like inductance and capacitance | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | Evaluate performance of short, medium transmission lines | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | Evaluate performance of long transmission lines and describe travelling wave and transients in power system | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | Describe various effects on transmission system and compute sag on overhead transmission system | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | Gain knowledge on power factor and voltage control in transmission system | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | | **Semester** | | | | | | **Subject Name** | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **V Sem** | | | | | | **Renewable Energy Systems** | | | | | | **B20EE19** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | Apply the technology to capture the energy from the renewable sources like sun, wind, ocean, biomass, geothermal. | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | Use different renewable energy sources to produce electrical power. | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | Minimize the use of conventional energy sources to produce electrical energy. | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | Identify the fact that the conventional energy resources are depleted. | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | Explore the direct energy sources. | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | | **Semester** | | | | | | **Subject Name** | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **V Sem** | | | | | | **Industrial Instrumentation** | | | | | | **B20EE20** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | Get knowledge on transducers | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | Understand the strain gauge and strain measurement. | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | Know the displacement measurement techniques. | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | Understand the temperature measurement | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | Gains knowledge on digital acquisition systems and control | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | | **Semester** | | | | | | **Subject Name** | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **V Sem** | | | | | | **Computer Organization** | | | | | | **B20EC16** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | Describe the fundamental organization of a computer system | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | Understand the concepts of register transfer logic and arithmetic operations. | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | Understand the concepts of Hardwired control and micro programmed control. | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | Explain the I/O and memory organization in depth | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | Understand the concepts of parallel processing, pipelining and inter processor communication | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | | **Semester** | | | | | **Subject Name** | | | | | | | | **Subject Code** | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **V Sem** | | | | | **Electrical Machines Lab-II** | | | | | | | | **B20EE21** | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Select range of apparatus based on the ratings. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Draw the Equivalent circuits and analyze various AC machines | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Determine performance and Characteristics of AC machinery | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Evaluate the efficiency of the machine by analyzing test results | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Evaluate the performance of transformers. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | **Subject Name** | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **V Sem** | | | | **Electrical Measurements and Instrumentation Lab** | | | | | | | | | **B20EE22** | | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Compare performance of MC, MI and Dynamometer types of measurements, Energy meter. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Determine the circuit parameters using AC and Dc bridges. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Compute the errors CT‘s and PT‘s. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Understand the performance of industrial instruments. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Determine the LVDT characteristics | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **V Sem** | | **Electrical Simulation Lab** | | | | | | | | | | | **B20EE23** | | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Get the knowledge simulation of electrical circuits | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Observe the time response analysis in simulation | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Know the transmission line parameters using Simulink | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Know the simulation power electronic converters | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Get the knowledge on different simulation software | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 0** | |
| **V Sem** | | **Human Values and Professional Ethics** | | | | | | | | | | | **B20MC04** | | | | | | | **L/T/P :2/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | It ensures students sustained happiness through identifying the essentials of human values and skills. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | It facilitates a correct understanding between profession and happiness | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | It helps students understand practically the importance of trust, mutually satisfying human behavior and enriching interaction with nature | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Ability to develop appropriate technologies and management patterns to create harmony in professional and personal life. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | **Subject Name** | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VI Sem** | | | | **Computer Methods in Power Systems** | | | | | | | | | **B20EE25** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Determine the bus impedance and admittance matrices for power system network | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Calculate various parameters at different buses using load flow studies | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Discuss per unit system representation and symmetrical component theory. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Discuss fault analysis on power system | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Understand the steady state stability of power system and analyse the transient stability of power system. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | **Subject Name** | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VI Sem** | | | | **Power Semiconductor Drives** | | | | | | | | | **B20EE26** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Analyze the operation of converter fed dc motors and four quadrant operations of dc motors using dual converters | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Describe the chopper fed dc motors in various quadrants of operation | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Know the concept of speed control of induction motor by using AC voltage controllers and voltage source inverters. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Differentiate the stator side control and rotor side control of three phase induction motor. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Explain the speed control mechanism of synchronous motors. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VI Sem** | | **Managerial Economics and Financial Analysis** | | | | | | | | | | | **B20MB01** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand the nature, scope and importance of Managerial Economics. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Know what is demand, analyze demand and how elasticity of demand is used for pricing decisions and to evaluate methods for forecasting demand | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Know how production function is carried out to achieve least cost combination of Inputs and how to analyze cost. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Understand the characteristics of different kinds of markets and outline different form of business organization and analyze how capital budgeting techniques are used for investment decisions. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Know how to prepare final accounts and how to interpret them, analyze and interpret financial statements using ratio analysis | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VI Sem** | | **Electrical Distribution Systems** | | | | | | | | | | | **B20EE27** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand design of various load | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Analyze the need of substations and there erection and site selection | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand protection of distribution system | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Acquire knowledge of power factor improvement. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Calculate the distribution voltage drop calculations | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VI Sem** | | **Electrical Engineering Materials** | | | | | | | | | | | **B20EE28** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Impart the knowledge on electrical engineering materials classification and their applications | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Study the performance characteristics of various semiconducting, dielectric and insulation materials and their applications in design of electrical and electronic devices. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Identify various magnetic materials and their classification | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Learn various special purpose of materials | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Design various electronic components | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | **Subject Name** | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VI Sem** | | | | **Digital Signal Processing** | | | | | | | | | **B20EC24** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Identify the different types of the discrete signals and systems | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Understand the inter relationship between DFT and various transforms and fast computation of DFTand appreciate the FFT processing | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand the characteristics of FIR filters and classify the different types of windowing techniques. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Design a IIR digital filters for a given specifications and Apply the knowledge to real world processing applications. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Understand different types of signal processing architectures | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **VI Sem** | | **Power Electronics Lab** | | | | | | | | | | | **B20EE29** | | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Study Characteristics of various Power Semiconductor devices | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Analyze AC/AC and AC/DC Converters | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Analyze the behavior of various DC/DC and DC/AC converters | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Understand types of Power Electronic converters and identify their applications | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Know the PWM techniques used for power converters | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **VI Sem** | | **Control Systems Lab** | | | | | | | | | | | **B20EE30** | | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Analyze the time & Frequency response of control systems | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Evaluate the performance of feedback control systems | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Examine the response of PID controllers. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Identify the Performance of AC & DC servo motors | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Know the magnetic amplifier | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **VI Sem** | | **Electronics Design Lab** | | | | | | | | | | | **B20EE31** | | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Design the various regulated power supplies for control boards | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Gain knowledge on designing of various triggering circuits for SCR. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Develop scaling and conditioning circuits for various sensors. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Develop PWM control and gate driver circuits for various power electronic applications | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Develop the zero-crossing detector. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 0** | |
| **VI Sem** | | **Logical Reasoning and Quantitative Aptitude** | | | | | | | | | | | **B20MC05** | | | | | | | **L/T/P :2/0/0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Apply quantitative reasoning and mathematical analysis methodologies to understand and solve problems. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Apply quantitative correctly arrive at meaningful conclusions regarding their answers and manipulate equations and formulas in order to solve for the desired variable | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Interpret given information correctly, determine which mathematical model best describes the data, and apply the model correctly | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Correctly apply mathematical language and notation to explain the reasoning underlying their conclusions when solving problems using mathematical or statistical techniques | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Improve their mathematical skills in various general aspects to solve real time problems. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VII Sem** | | **Power System Operation And Control** | | | | | | | | | | | **B20EE33** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Analyse economic operation of power system. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Understand the working of hydrothermal coordination. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Analyse load frequency control of Single area and Two area power system. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Acquire knowledge on reactive power control | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Understand the working of deregulated electricity markets | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VII Sem** | | **Power System Protection** | | | | | | | | | | | **B20EE35** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand the basic construction and principle of arc interruptions in Circuit Breaker and its types. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Understand the basic principle of electromagnetic Relay Operation and its various types to different applications. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Explore the various schemes of protecting generator and transformers. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Explore various relaying operation in protecting the transmission line and bus bar. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Learn the necessity of neutral grounding and protection against overvoltage. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VII Sem** | | **Microprocessors and Microcontrollers** | | | | | | | | | | | **B20EC32** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Illustrate the internal organization of popular 8086/8051 microprocessors/microcontrollers. Contrast hardware and software interaction and integration. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Design microprocessors and microcontrollers-based systems and develop microcontroller based systems for real time applications. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand microcontroller 8051 and its programming. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Explain the Memory organization, classification and their applications and | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Assess programming, interfacing etc of various devices with microprocessors and external world. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VII Sem** | | **High Voltage Engineering** | | | | | | | | | | | **B20EE35** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand Transients in power system. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Acquire the knowledge on breakdown in solid, Liquid and gaseous dielectrics | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand the generation of high voltage and current. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Identify the measurement of high voltage and current. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Analyze power apparatus and insulation coordination | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VII Sem** | | **Advanced Power Electronics** | | | | | | | | | | | **B20EE36** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Classify driver circuits for various power semiconductor devices. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Analyze the operation of multi-pulse converters. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand the operation of resonant converters. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Know the differences between VSI and CSI. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Gain knowledge on the operation of multilevel inverters. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VII Sem** | | **Advanced Control Systems** | | | | | | | | | | | **B20EE37** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand different non linearities and their describing functions. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Describe the methods of Phase-plane trajectory of nonlinear control systems. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Apply various theorems for stability analysis of linear and nonlinear systems. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Implement modal control and calculus of variations | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Formulate and solve optimal control problems | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VII Sem** | | **Electrical Machine Design** | | | | | | | | | | | **B20EE38** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand the basic design consideration, standards. Study the heat dissipation, cooling characteristics and electrical characteristics of various dielectric materials. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Understand the design, choice of materials and specifications in DC machines | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand and design the main dimensions of each part of a transformers | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Design the constructional features of induction motors and estimate their currents and reactance | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Design the constructional features of synchronous motors | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VII Sem** | | **Advanced Electrical Drives** | | | | | | | | | | | **B20EE39** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Analyse the operation of three phase converter fed dc motors | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Describe the VSI and CSI fed induction motor operation. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Know the concept of vector control of induction motor drive. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Understand the concept of direct torque control for three phase induction motor. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Gain knowledge on vector control of PMSM drives and introduction to BLDC drives. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VII Sem** | | **AI Techniques in Electrical Engineering** | | | | | | | | | | | **B20EE40** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Identify and describe AI techniques and their roles in building intelligent machines. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Understand the working of multilayer neural networks. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Explore fuzzy logic and reasoning. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Learn genetic algorithms to optimization problems | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Evaluate and compare solutions by AI approaches for a given problem in matlab simulink | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | **Subject Name** | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VII Sem** | | | | **Utilization of Electrical Energy** | | | | | | | | | **B20EE41** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Choose a right drive for a particular application. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Identify Heating and welding schemes for given application. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Explain the basics of lighting and methods of illumination and its parameters | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Understand the different schemes of traction systems, its characteristics and its main components. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Analyze electrical energy consumption for traction system | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | | | **Subject Name** | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VII Sem** | | | | | | **High Voltage DC Transmission** | | | | | | | **B20EE42** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Know the basic concepts of HVDC transmission. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Understand the complete operation of HVDC Converter stations | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand the power flow control on HVDC Transmission system | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Understand the Operation of the controller for HVDC in worst and normal operations | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Design the Various filters. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **VII Sem** | | **Microprocessors and Microcontrollers Lab** | | | | | | | | | | | **B20EC42** | | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Demonstrate experimentally basic programming of Microprocessor. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Recall the microprocessor interfacing with various peripherals for various applications | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Apply the basic programming of microcontroller. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Examine microprocessor interfacing with various peripherals for various applications | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | **Subject Name** | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 1** | |
| **VII Sem** | | | | **Power Systems Lab** | | | | | | | | | **B20EE43** | | | | | | | **L/T/P :0/0 /2** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Calculate Transmission line parameters, efficiency and regulation. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Evaluate the Performance analysis of Over/Under Voltage Relay. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand the Analysis and performance testing of Feeder Protection System | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Calculate Sequence Reactance of 3-Φ Transformer | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | **Subject Name** | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 2** | |
| **VII Sem** | | | | **Mini Project & Internship** | | | | | | | | | **B20EE44** | | | | | | | **L/T/P :0/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Students will be able to practice acquired knowledge within the chosen area of technology for project development | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Identify, discuss and justify the technical aspects of the chosen project with a comprehensive and systematic approach. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Reproduce, improve and refine technical aspects for engineering projects | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Work as an individual or in a team in development of technical projects & Communicate and report effectively project related activities and findings. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | **Subject Name** | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 4** | |
| **VII Sem** | | | | **Major Project Phase-1** | | | | | | | | | **B20EE45** | | | | | | | **L/T/P :0/0 /8** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Identify the problem by applying acquired knowledge. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Ability to plan and implement an investigative or developmental project. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | In-depth skill to use some laboratory, modern tools and techniques | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Ability to communicate results, concepts, analyses and ideas in written and oral form & Conduct an extended independent investigation that results in the production of a research thesis. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VIII Sem** | | **Soft Computing Techniques** | | | | | | | | | | | **B20EE46** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | To know basic idea of modern engineering techniques which are useful for solving non-linear and complex functions that may come across dissertation/research work | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | To understand optimization problem | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand the concept of multi-objective optimization problems (MOOPs) and issues of solving it. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Knowing Adaptive Neuro-Fuzzy Inference Systems | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Evaluate and compare solutions by soft computing techniques for a given problem in matlab Simulink | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | **Subject Name** | | | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VIII Sem** | | **Digital Control Systems** | | | | | | | | | | | **B20EE47** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Acquire a strong foundation in sampling and reconstruction Z-transforms | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Apply knowledge of Mathematics, Z-plane analysis to discrete time control systems. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Replace the conventional control system with Digital control system. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Evaluate and apply Z-plane analysis of discrete time control systems | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Apply state feedback controllers and observers | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | **Subject Name** | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VIII Sem** | | | | **Flexible AC Transmission Systems** | | | | | | | | | **B20EE48** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Know the concept of flexible AC transmission systems. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Understand the voltage source converters used in FACTS | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Get the exposure on static shunt compensation. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Understand the SVC and STATCOM. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Get the exposure on static series compensation. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | **Subject Name** | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VIII Sem** | | | | **VLSI Design** | | | | | | | | | **B20EC33** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Design digital applications using Verilog HDL | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Understand IC technology and basic electrical properties of MOS and BiCMOS | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Design the layout of circuits using various design rules. Develop and design the gate level circuits | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Gain the knowledge to design data path subsystems like Adders, Shifters, and ALUs etc. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Illustrate different programmable logic devices and CMOS testing. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | | | |
| **VIII Sem** | | | **Power Quality** | | | | | | | | **B20EE49** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Know the terminology, definitions, causes, effects and analysis of various power quality problems | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Define and understand the components of current/power in sinusoidal/non-sinusoidal singlephase supply/load systems | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Define and understand the components of current/power in sinusoidal/non-sinusoidal three phase supply/load systems | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Know design, operation and Analysis of passive shunt and series compensators | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Know design, operation and analysis of passive shunt/series power filters | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | | **Subject Name** | | | **Subject Code** | | | | | | | **No. of Hours** | | | | | | **Credits: 3** | | | | |
| **VII Sem** | | | | | **Electric and Hybrid Vehicles** | | | **B20EE50** | | | | | | | **L/T/P :3/0 /0** | | | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Know the fundamentals of Electric Vehicles. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Gain the knowledge on battery technology used in EVs. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Understand the AC DC motor requirements for EVs | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Know the drive train components | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Get the exposure on fundamentals of Hybrid EVs design. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | **Subject Name** | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VIII Sem** | | | | **Smart Grids** | | | | | | | | | **B20EE51** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand technologies for smart grid and features of Smart Grid in the context of Indian Grid. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Assess the role of automation in Transmission/Distribution/substation. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Know various communication technologies involved in smart grids and importance of PMUs, EMS, WAMS, SCADA | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Classify various Smart Distribution Technologies | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Clarify the regulations and market models for smart grid and various tariffs | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | **Subject Name** | | | | | | | | | **Subject Code** | | | | | | | **No. of Hours** | | | | **Credits: 3** | |
| **VIII Sem** | | | | **Embedded Systems** | | | | | | | | | **B20EC45** | | | | | | | **L/T/P :3/0 /0** | | | |
| After learning the contents of this subject, the student must be able to | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | Understand and design embedded systems. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Understand the architecture of Arm processors | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Develop a system using IO devices and interfacing to external world | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Understand types of memory | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | Understand embedded firmware design approaches | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | **Subject Name** | | | | | | | | **Subject Code** | | | | | **No. of Hours** | | | | | | **Credits: 1** | | | |
| **VIII Sem** | | | **Technical Seminar** | | | | | | | | **B20EE52** | | | | | **L/T/P :0/0 /2** | | | | | |
| 1 | | | Identify and analyze the real time Electrical Engineering problems | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Acquire awareness on latest technology and current trends in the field of Electrical Engineering. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | Participate in discussions for enhancement of knowledge | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Apply communication skills & Document and present technical reports following professional ethics. | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Outcome** | | | **Semester** | | | | | **Subject Name** | | | **Subject Code** | | | | | | | **No. of Hours** | | | | | | **Credits: 8** | | | | |
| **VII Sem** | | | | | **Project Stage – II** | | | **B20EE53** | | | | | | | **L/T/P :0/0 /16** | | | | | |
| 1 | | | Identify the problem by applying acquired knowledge. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | Ability to plan and implement an investigative or developmental project. | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | In-depth skill to use some laboratory, modern tools and techniques | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | Ability to communicate results, concepts, analyses and ideas in written and oral form & Conduct an extended independent investigation that results in the production of a research thesis. | | | | | | | | | | | | | | | | | | | | | | | | | |