Shri Balasaheb Mane Shikshan Prasarak Mandal's

ASHOKRAO MANE GROUP OF INSTITUTIONS

NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112

E-mail: hodele@amgoi.edu.in, Website: www.amgoi.org

NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)

DEPARTMENT OF ELECTRICAL ENGINEERING

Course Outcomes A.Y.2024-25

SY B. Tech. (Odd Semester)

Sr. No.	Name of Subject	Course Outcome
1	Engineering Mathematics III	✓ Understand the properties of Laplace transform and evaluate transform of integral & derivative functions. ✓ Solve inverse Laplace transform using partial fraction & convolution theorem. ✓ Determine Fourier Sine & Fourier Cosine integrals. ✓ Study partial differential equations along with applications ✓ Study analytic functions, Cauchy Riemann equations, Cauchy integral Formula & Cauchy's residue theorem
2	Electrical Machines I	✓ Understand and classify different parts of a transformer & understand its operation. ✓ Analyze 1-Ph and 3-Ph transformers circuits. ✓ Identify different parts of a DC machine & understand its operation. ✓ Interpret different testing methods to determine the efficiency of DC machines. ✓ Analyze the starting and speed control methods of a DC machines.
3	Engineering Material Science	✓ Study about Crystal structures. ✓ Understand magnetic material structure. ✓ Study about conducting and superconducting materials. ✓ Study about semiconducting materials ✓ Study dielectric and nano materials.
4	Basic Human Rights	✓ Understand importance of human life & Realize the Human rights and Duties. ✓ Understand about the society, religion, culture of human life ✓ Evaluate the social structure and problems. ✓ Recognize about the freedom, liberty, democracy of human being. ✓ Identify about the Human rights law, constitution of India.
5	Electrical and Electronics Measurement	✓ Classify various types of errors is the system and types of electrical measuring instruments ✓ Explain different types of meters required for electrical quantities. ✓ Determine unknown variables in the bridge configuration with the help of other known variables. ✓ Recognize basic measuring instruments used for digital measurements and to explain them. ✓ Define the term transducers and to classify and explain various types of transducers

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SY B.Tech. (Even Semester)

Sr. No.	Name of Subject	Course Outcome
1	Electrical Machine-II	✓ Understand construction & operating principle of 1 phase transformer. ✓ Working and construction of 3 phase transformer. ✓ Understand operating principle of DC generators and DC motors. ✓ Analyze the operating principles of DC motors. ✓ Understand special Motors.
2	Power System-I	✓ Explain the generation of Electric Energy by different sources ✓ Discuss the Electrical design aspects of overhead transmission line ✓ Discuss the Mechanical design aspects of overhead transmission line ✓ Analyze Performance of transmission line ✓ Describe the basic structure of power system distribution and its components
3	Group A (Electronic Devices and Circuits)	✓ Understand the concept of Bipolar Junction Transistor ✓ Understand the concept of JET and MOSFET ✓ Understand the concept of Power Amplifiers ✓ Understand the concept of Feedback Amplifier ✓ Understand the concept of Regulated Power Supply
4	Network Theory	✓ Review basic components of electric network. ✓ Design and develop network equations and their solutions. ✓ Apply Laplace theorem for Electric Network Analysis. ✓ Analyze Two port networks. ✓ Analyze AC circuits.
5	Analog and Digital Electronics	✓ Study transistor and op-amp. ✓ Review basic number system. ✓ Understand design and characteristics of digital logic gates. ✓ Compare different techniques in use of digital circuits. ✓ Study combinational and sequential circuits.

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TY B. Tech. (Odd Semester)

Sr. No.	Name of Subject	Course Outcome
1	Power System Analysis	✓ Study different parameters of power system operation and control ✓ Study load flow and Diff. methods of reactive power control. ✓ Understand diff. methods of fault analysis and stability study
2	Power Electronics	✓ Review principle of construction, operation and characteristics of basic semiconductor devices. ✓ Understand and analyze performance of controlled and uncontrolled converters. ✓ Understand and analyze performance of DC to DC converters. DC to AC converters. ✓ Understand and analyze performance of AC voltage controllers. ✓ Understand AC to AC Power conversion using choppers and Cycloconverters.
3	Microprocessor and micro Controller	✓ Study the architecture of 8085. ✓ Understand interfacing of 8085 and 8051. ✓ Understand interrupt features of 8085 and 8051. ✓ Develop program for basic applications. ✓ Understand typical applications of 8085 & 8051
4	Group B (HVDC)	✓ Understand importance, configuration & types of HVDC transmission. ✓ Understand benefits, roles & realities of types of FACTs controllers. ✓ Analyze the reactive power control and VAR sources. ✓ Analyze the operation of variable impedance type series compensator. ✓ Understand types of STATCOM and working of UPFC.
5	Group C (Embedded System)	✓ Understand the Embedded System Design. ✓ Understand working and applications of Sensor and Actuator. ✓ Understand Real time operating systems. ✓ Understand the Embedded Systems Architecture and working. ✓ Understand different Embedded Networks.

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DEPARTMENT OF ELECTRICAL ENGINEERING

TY B. Tech. (Even Semester)

Sr. No.	Name of Subject	Course Outcome
1	Switch Gear and Protection	✓ Understand the concept of protective relay ✓ Understand the concept of static and Numerical Relay ✓ Understand the concept of Circuit breaker and Fuses ✓ Understand the concept of protection of Transmission Line ✓ Understand the concept of protection of Transformer and Alternator Protection
2	Electrical Machine Design	✓ Explain principles of electric machine design. ✓ Explain different types of electrical apparatus ✓ Describe types and parameters of AC and DC windings ✓ Explain Heating, Cooling and Ventilation for electrical machine ✓ Design Transformer for different ratings
3	Control System	✓ Study the different basic concepts and components of a control system. ✓ Derive transfer functions of basic control system components. ✓ Analyze stability analysis using time domain response on a given system. ✓ Design and analyze PID controller. ✓ Understand and analyze state variable technique.
4	Group D (FACTS)	✓ Understand benefits, roles & realities of types of FACTs controllers. ✓ Analyze the reactive power control and VAR sources. ✓ Analyze the operation of variable impedance type series compensator. ✓ Understand types of STATCOM and working of UPFC.
5	Group E (Power Plant Engineering)	✓ Review basic components of power system, energy sources. ✓ Understand principle of construction and operation of different conventional power plants

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DEPARTMENT OF ELECTRICAL ENGINEERING

Final Year B. Tech. (Odd Semester)

Sr. No.	Name of Subject	Course Outcome
1	Power System Operation & Control	✓ Explain the fundamental concept of power system. ✓ Design the mathematical model of synchronous machine. ✓ Design the mathematical model Excitation system and speed governing system. ✓ Analyze the transient stability of power system using swing equation and equal area criteria. ✓ Analyze the economic operation of power system.
2	High Voltage Engineering	✓ Illustrate the concept of electric field stresses, applications of insulating materials ✓ Explain the breakdown process in solid, liquid, and gaseous materials. ✓ Analyze methods for generation and measurement of High Voltages and Currents (both ac and dc) ✓ Describe the phenomenon of overvoltage and choose appropriate insulation coordination levels based on IS & IEC Standards. ✓ Understand the methods for Nondestructive testing of equipment like transformers, insulators, isolators, bushings, lightning arrestors, cables, circuit breakers and surge diverters
3	Group H (Electric and Hybrid Electric Vehicle)	✓ To aware students about social and environmental importance of hybrid and electric vehicles ✓ To understand different electric and hybrid drive train topologies. ✓ To understand the difference between electric and conventional propulsion syst m ✓ To understand different energy storage devices used in EVs and HEVs. ✓ To understand the role of power electronics and energy management system in EVs and HEVs.
4	Group G (Mechatronics)	✓ Understand the different types of mechatronics system ✓ Analyze the types of sensors and transducers ✓ Select appropriate mechanical actuation systems ✓ Understand concepts of microcontroller and microprocessor. ✓ Understand concept of PLC.

5	Group F (Energy Audit and conservation)	✓ Understand the basic process involved in the energy audit and the terminologies associated in the process. ✓ Develop audit reports of any firm including large and small scale industries, residential and commercial establishments. ✓ Understand the appropriate method for the planning and monitoring of any energy conservation project. ✓ Analyze various energy conservation in generation, transmission, distribution ✓ to get knowledge about Planning, Implementation & monitoring of energy conservation project

Prof. S. H. Shete (HOD)