



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.2021-22

SY B. Tech. (Odd Semester)

1	Engineering Mathematics III	<p>Understand the properties of Laplace transform and evaluate transform of integral & derivative functions.</p> <p>Solve inverse laplace transform using partial fraction & convolution theorem.</p> <p>Determine Fourier Sine & Fourier Cosine integrals.</p> <p>Study partial differential equations along with applications</p> <p>Study analytic functions, Cauchy Riemann equations, Cauchy integral Formula & Cauchy's residue theorem</p>
2	Electrical Machines I	<p>Understand and classify different parts of a transformer & understand its operation.</p> <p>Analyze 1-Ph and 3-Ph transformers circuits.</p> <p>Identify different parts of a DC machine & understand its operation.</p> <p>Interpret different testing methods to determine the efficiency of DC machines.</p> <p>Analyze the starting and speed control methods of a DC machines.</p>
3	Engineering Material Science	<p>Study about Crystal structures.</p> <p>Understand magnetic material structure.</p> <p>Study about conducting and superconducting materials.</p> <p>Study about semiconducting materials</p> <p>Study dielectric and nano materials.</p>
4	Basic Human Rights	<p>Understand importance of human life & Realize the Human rights and Duties.</p> <p>Understand about the society, religion, culture of human life</p> <p>Evaluate the social structure and problems.</p> <p>Recognize about the freedom, liberty, democracy of human being..</p> <p>Identify about the Human rights law , constitution of India.</p>
5	Electrical and Electronics Measurement	<p>Classify various types of errors is the system and types of electrical measuring instruments</p> <p>Explain different types of meters required for electrical quantities.</p> <p>Determine unknown variables in the bridge configuration with the help of other known variables.</p> <p>Recognize basic measuring instruments used for digital measurements and to explain them</p> <p>Define the term transducers and to classify and explain various types of transducers</p>

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	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 Analysis Synthesis	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.

TY B. Tech. (Odd Semester)

Sr. no	Name of Subject	Course Outcome
1	Electrical Machine-II	<p>Explain the construction, working principle, performance and applications of Poly-phase induction motor</p> <p>Evaluate the basic operation and performance of single phase Induction motor, special and Synchronous machine</p> <p>Perform experiments and on above machines</p> <p>Analyze & apply the concept of operations of Machines for solving social problem.</p> <p>Identify, formulate and solve the numerical problems related to above machines</p>
2	Power System-II	<p>Study different parameters of power system operation and control</p> <p>Study load flow and Diff. methods of reactive power control.</p> <p>Understand diff. methods of fault analysis and stability study</p>
3	Microprocessor and micro Controller	<p>Study the architecture of 8085 .</p> <p>Understand interfacing of 8085 and 8051.</p> <p>Understand interrupt features of 8085 and 8051.</p> <p>Understand the program for basic applications.</p> <p>Understand typical applications of 8085 & 8051</p>
4	Value Education, Human Rights and Legislative Procedures [MOOC/Swayam/NPTEL]	<p>Gain a solid understanding of fundamental principles of Human Rights including covenant of Economic, social & cultural rights.</p> <p>Identify various forms of Human Rights violations, both Historical & contemporary and understand the impact of these violations individuals and communities.</p> <p>Familiar with legal frameworks and mechanisms for the protection and promotion of human rights at the national and international level</p> <p>Analyze the specific human rights in real world situation</p>
5	Elective-IV Advance Renewable Energy Resources	<p>Understand the concept of biomass energy and biogas generation.</p> <p>Describe the geothermal energy principles and its operation.</p> <p>Describe the Hybrid energy operation and its types.</p> <p>Understand the concept of Air pollution and its effects.</p> <p>Illustrate the concept of ecosystem and environmental impact assessment and auditing.</p>
6	Elective-V	<p>Study different non-conventional energy sources, their applications and Site selection.</p> <p>Compare thermal power plant with nuclear power plant.</p> <p>Explain Hydroelectric, diesel & Gas power plant along with site selection, main parts & working.</p> <p>Deduce different Tariff.</p>

		Explain Grid interface of different power plant.
--	--	--

TY B. Tech. (Even Semester)

Sr. no	Name of Subject	Course Outcome
1	Control System	<p>Understand different basic concepts and components of a control system.</p> <p>Understand transfer functions of basic control system components.</p> <p>Understand the stability analysis using time domain response on a given system.</p> <p>Design and analyze PID controller.</p> <p>Understand and analyze state variable technique.</p>
2	Principles of Electrical Machine Design	<p>Explain principles of electric machine design.</p> <p>Explain different types of electrical apparatus</p> <p>Describe types and parameters of AC and DC windings</p> <p>Explain Heating, Cooling and Ventilation for electrical machine</p> <p>Design Transformer for different ratings</p>
3	Power Electronics	<p>Review principle of construction, operation and characteristics of basic semiconductor devices.</p> <p>Understand and analyze performance of controlled and uncontrolled converters.</p> <p>Understand and analyze performance of DC to DC converters. DC to AC converters.</p> <p>Understand and analyze performance of AC voltage controllers.</p> <p>Understand AC to AC Power conversion using choppers and cyclo converters.</p>
4	Elective-VI	<p>Identify different components of an automation system.</p> <p>Analyze and explain the different function of PLC.</p> <p>Select the suitable motor drives for the specified application.</p> <p>Analyze and explain the different function of SCADA.</p> <p>Examine distributed control system.</p>
5	Elective-VII Switchgear and Protection	<p>Explain principles of protective relaying.</p> <p>Describe principle of construction, operation and selection of different type of circuit breaker used in power system.</p> <p>Explain different protection schemes used in power system operation.</p> <p>Discuss insulation coordination and over current protection.</p>
6	Elective-VIII	<p>Analyze of data, information and knowledge.</p> <p>Define the concept of marketing.</p> <p>Identify project and work for community development.</p> <p>Analyze the business model.</p>

Final Year B. Tech. (Odd Semester)

Sr. no	Name of Subject	Course Outcome
1	Power System Operation & Control	<p>Explain the fundamental concept of power system.</p> <p>Design the mathematical model of synchronous machine.</p> <p>Design the mathematical model Excitation system and speed governing system.</p> <p>Analyze the transient stability of power system using swing equation and equal area criteria.</p> <p>Analyze the economic operation of power system.</p>
2	High Voltage Engineering	<p>Illustrate the concept of electric field stresses, applications of insulating materials</p> <p>Explain the breakdown process in solid, liquid, and gaseous materials.</p> <p>Analyze methods for generation and measurement of High Voltages and Currents (both ac and dc)</p> <p>Describe the phenomenon of overvoltage and choose appropriate insulation coordination levels based on IS & IEC Standards.</p> <p>Understand the methods for Nondestructive testing of equipment like transformers, insulators, isolators, bushings, lightning arrestors, cables, circuit breakers and surge diverters</p>
3	Electrical Drives	<p>Examine various applications in industrial and domestic areas where use of electric drives are essential.</p> <p>Classify types of electric drives systems based on nature of loads, control objectives, performance and reliability.</p> <p>Combine concepts of previously learnt courses such as, electrical machines, Control and power electronics to cater to the need of automations in industries.</p> <p>Select most suitable type and specification of motor drive combination for efficient conversion and control of electric power.</p> <p>Identify the critical areas in application levels, and derive typical solutions.</p>
4	Elective-IX	<p>Identify types of Traction system.</p> <p>Interpret various power supplies in electric traction.</p> <p>Analyze various traction motors & Traction motor control.</p> <p>Elaborate train movement & breaking in traction system.</p> <p>Classify the indoor and outdoor Illumination system.</p>

5	Elective-X	<p>To understand the basic process involved in the energy audit and the terminologies associated in the process.</p> <p>Develop audit reports of any firm including large and small scale industries, residential and commercial establishments.</p> <p>Study of selection and commenting on the appropriate method for the planning and monitoring of any energy conservation project.</p> <p>Analyze various energy conservation in generation, transmission, distribution to get knowledge about Planning, Implementation & monitoring of energy conservation project</p>
---	------------	--

Final Year B. Tech. (Even Semester)

Sr. no	Name of Subject	Course Outcome
1	IIOT(Industry 4.0 and Internet of Things)	Understand sensors, actuators, communication and Networking. Understand Cyber Physical Systems and Cyber security in Industry 4.0. Knowledge of theory related to Industrial IoT Systems Ability to implement real case studies by gained knowledge of Industrial applications with IoT capability
2	Entrepreneurship Essentials	Analyze the data, information and knowledge. Define the concept of marketing. Identify project and work for community development Analyze the business model

Prof. S. H. Shete
(HOD)