



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

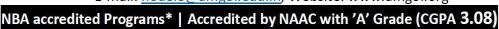
SY B. Tech. (Odd Semester)

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 	









DEPARTMENT OF ELECTRICAL ENGINEERING

SY B.Tech. (Even Semester)

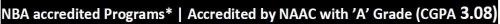
Sr. No.	Name of Subject	Course Outcome
	Electrical Machine-	✓ Understand construction & operating principle of 1 phase transformer.
		✓ Working and construction of 3 phase transformer.
1	II	✓ Understand operating principle of DC generators and DC motors.
	11	✓ Analyze the operating principles of DC motors.
		✓ Understand special Motors.
		✓ Explain the generation of Electric Energy by different sources
2		✓ Discuss the Electrical design aspects of overhead transmission line
	Power System-I	✓ 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
	Group A (Electronic Devices and Circuits)	✓ Understand the concept of Bipolar Junction Transistor
		✓ Understand the concept of JET and MOSFET
3		✓ Understand the concept of Power Amplifiers✓ Understand the concept of Feedback Amplifier
		✓ Understand the concept of Regulated Power Supply
		1 5 117
		✓ Review basic components of electric network.
	Network Theory	✓ Design and develop network equations and their solutions.
4		✓ Apply Laplace theorem for Electric Network Analysis.
		✓ Analyze Two port networks.
		✓ Analyze AC circuits.
	Analog and Digital Electronics	✓ Study transistor and op-amp.
		✓ Review basic number system.
5		✓ Understand design and characteristics of digital logic gates.
		✓ Compare different techniques in use of digital circuits.
		✓ Study combinational and sequential circuits.











DEPARTMENT OF ELECTRICAL ENGINEERING

TY B. Tech. (Odd Semester)

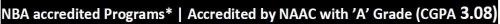
Sr. No.	Name of Subject	Course Outcome
1	Power System Analysis	 ✓ Study different parameters of power system operation and control ✓ Study load flow and Diff. methods of reactive power control. ✓ Understand diff. methods of fault analysis and stability study
2	Power Electronics	 ✓ Review principle of 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.











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





ASHOKRAO MANE GROUP OF INSTITUTIONS

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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 ✓ 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.



Shri Balasaheb Mane Shikshan Prasarak Mandal's

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DEPARTMENT OF ELECTRICAL ENGINEERING

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			TIZITI OI ZZZZZIIIO
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Prof. S. H. Shete (HOD)