AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER

Department of Electrical Engineering

Course Outcomes (CO)

Third Year – 2012 Course			
Course Code	**Course Name**	**Course Outcomes**	
Semester - I			
(313121)	**Industrial and Technology Management**	CO1	**Differentiate** between different types of business organization and **discuss** the fundamentals of economics and management.
		CO2	**Understand** and **implement** the concepts of technology management and quality management.
		CO3	**Relate** between marketing management and financial management
		CO4	Effectively communicate in Group discussions and work in team, **develop** leadership and entrepreneurship skills.
		CO5	**Employ** the concepts of Human resource management, IPR and document Patent.
(313141)	**Advance Microcontroller and its Applications**	CO1	**Explain** architecture of PIC18F458 microcontroller, its instructions and the addressing modes.
		CO2	**Develop** and debug program in assembly language or C language for specific applications
		CO3	**Use** of an IDE for simulating the functionalities of PIC microcontroller and its use for software and hardware development.
		CO4	**Interface** a microcontroller to various devices.
		CO5	Effectively **utilize** advance features of microcontroller peripherals.
(313142)	**Electrical Machines II**	CO1	**Describe** synchronous machines & **apply** acquired knowledge to draw phasors and determine reactance of salient pole generators.
		CO2	**Explain & determine** regulation

			of 3 ph alternator, understand synchronization of alternator.
		CO3	**Demonstrate** operation of synchronous motor at constant load with variable excitation & constant excitation with variable load.
		CO4	**Describe** Speed control methods of three phase induction motor and understand construction & working principles of special purpose motors.
		CO5	**Analyze** performance of A C series motor by plotting circle diagram.
		CO6	**Illustrate** performance characteristics of of 1 phase induction motor by determining parameters of equivalent circuit through test.
(31314)	**Power Electronics**	CO1	**Describe** the VI and switching characteristics SCR, GTO its application in power circuits. To **discuss** the importance of protection circuit and its use in power circuits.
		CO2	**Describe** the VI and switching characteristics MOSFET, IGBT and its application in power circuits. **Understand** the concept of DC to DC converter, Design and test step down and step up chopper
		CO3	**Compare** uncontrolled and controlled rectifiers, **Classify** the types of controlled converter, Study **Examine** the working of Single phase converter and **Analyse** the Different parameter of converter
		CO4	Study **Examine** the working of Three phase converter and **Analyse** the Different parameter of converter. **Describe** the VI and switching characteristics TRIAC, DIAC**. Explain** the concept of AC voltage Regulator
		CO5	**Explain** the working of single phase inverter, **Describe** the working of PWM inverter, and

			Study various voltage control methods in inverter.
		CO6	**Compare** three phase VSC of 120^0 and 180^0 mode. **Classify** different harmonic elimination technique. **Understand** multilevel inverter concept and **compare** it
(313144)	**Electrical Installation, Maintenance and Testing**	CO1	**Classify** distribution systems, its **types** and substations. .
		CO2	**Design** of different earthing systems for residential and industrial premises. .
		CO3	Select **methods** of condition monitoring and **testing** of various Electrical Equipment's.
		CO4	**Estimate** and Costing of residential and industrial premises
		CO5	**Summarize** the importance of electrical safety.
(313145)	**Seminar and Technical Communication**	CO1	To understand the current technologies and innovations, Acquired the basic skills to for performing literature survey and paper presentation
		CO2	Apply theoretical knowledge to actual industrial applications and research activity.
		CO3	**Engage** in effective written communication through the Seminar report ,engage in effective oral communication through presentation of the seminar work
(313152)	**Audit Course III**	CO1	**Understand** of renewable and non-renewable sources of energy
		CO2	**Gain** knowledge about working principle of various solar energy systems
		CO3	**Understand** the application of wind energy and wind energy conversion system
		CO4	**Develop** capability to do basic design of bio gas plant
		CO5	**Understand** the applications of different renewable energy sources like ocean thermal, hydro, geothermal energy etc.
(313146)	**Power System II**	CO1	Able to analyze the Performance of Transmission Lines, Efficiency

			in Transmission Lines.
		CO2	Analyze power flow in power transmission networks and apply power flow results to solve simple planning problems using analytical and graphical method.
		CO3	Able to understand design and performance evaluation of HVDC and EHVAC power transmission line
		CO4	Able to understand per unit system
		CO5	Able to understand Positive Sequence, Negative & zero sequence system and fault analysis.
		CO6	Able to Calculate currents and voltages in a faulted power system under both symmetrical and asymmetrical faults, and relate fault currents to circuit breaker ratings
(313147)	**Control System I**	CO1	Model a physical system and express its internal dynamics and input-output
		CO2	Be Understand and explain the relationships between the parameters of a control system
		CO3	Identify the parameters that the system is sensitive to. Determine the stability of a system
		CO4	Plot the Bode, Nyquist, Root Locus diagrams for a given control system and identify.
		CO5	Determine the frequency response of a control system and use it to evaluate or adjust the
(313148)	**Utilization of Electrical Energy**	CO1	To **understand** the principle of electric heating, welding and its applications.
		CO2	**Understand** and **design** various furnaces and residential illumination schemes.
		CO3	**Calculate** tractive effort, power, acceleration and velocity of traction.
		CO4	**Understand** of electric traction system, electric braking methods, control of traction motors, train lighting and signalling System.

		CO5	**Understand** and to collect various technical information and delivery of this technical information through presentations.
(313149)	**Design of Electrical Machines**	CO1	**Analyze** heating and cooling curve of transformer, **Describe** construction of transformer, **Explain** Specification of transformer
		CO2	**Derive** the output equation of transformer, **Design** the transformer
		CO3	**Determine** the performance parameter of transformer, **Develop** the flow chart for transformer design.
		CO4	**Design** of AC winding**, Derive** output equation of induction motor, explain ranges of Specific magnetic and electric loading.
		CO5	**Design** of Rotor of induction motor, **Select** suitable combination of stator and rotor slot, **select** length of airgap.
		CO6	**Analyze** Performance parameter of induction motor, **Calculate** short and continuous duty of electrical machine
(313150)	**Energy Audit and Management**	CO1	To get **knowledge** of BEE Energy policies, Electricity Acts
		CO2	**Use** various energy measurement and audit instruments
		CO3	**Carry out** preliminary energy **audit** of various sectors
		CO4	Enlist energy conservation and demand side **measures** for electrical, thermal and utility Systems.
		CO5	**Solve** simple problems on cost benefit **analysis**
(313151)	**Electrical Workshop**	CO1	**Integrate** electrical/electronic circuits for useful applications
		CO2	**Acquire** hardware skills to fabricate circuits designed
		CO3	**Test** & Debug Circuits
		CO4	**Produce** the results of testing in the form of report

(313153)	**Audit Course IV**	CO1	To get **knowledge** of Bio Energy Systems
		CO2	**Use** various energy measurement and Conservation schemes
		CO3	**Carry out** preliminary energy **audit** of various sectors
		CO4	Enlist energy conservation and demand side **measures** for electrical, thermal and utility Systems.
		CO5	**Solve** simple problems on cost benefit **analysis**