AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER

Department of Electrical Engineering

Course Outcomes (CO)

Third Year – 2015 Course			
Course Code	**Course Name**	**Course Outcomes**	
Semester - I			
(313121)	**Industrial and Technology Management**	C321.1	**Differentiate** between different types of business organization and **discuss** the fundamentals of economics and management.
		C321.2	**Explain** the importance of technology management and quality management.
		C321.3	**Describe** the characteristics of marketing and its types.
		C321.4	**Discuss** the qualities of a good leader.
(313141)	**Advance Microcontroller and its Applications**	C341.1	**Explain** architecture of PIC18F458 microcontroller, its instructions and the addressing modes.
		C341.2	**Develop** and debug program in assembly language or C language for specific applications
		C341.3	**Use** of an IDE for simulating the functionalities of PIC microcontroller and its use for software and hardware development.
		C341.4	**Interface** a microcontroller to various devices.
		C341.5	Effectively **utilize** advance features of microcontroller peripherals.
(313142)	**Electrical Machines II**	C342.1	**Describe** synchronous machines & **apply** acquired knowledge to draw phasors and determine reactance of salient pole generators.
		C342.2	**Explain & determine** regulation of 3 ph alternator, understand synchronization of alternator.
		C342.3	**Demonstrate** operation of synchronous motor at constant load with variable excitation & constant excitation with variable

			load.
		C342.4	**Describe** Speed control methods of three phase induction motor and understand construction & working principles of special purpose motors.
		C342.5	**Analyze** performance of A C series motor by plotting circle diagram.
		C342.6	**Illustrate** performance characteristics of of 1 phase induction motor by determining parameters of equivalent circuit through test.
(31314)	**Power Electronics**	C343.1	**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.
		C343.2	**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
		C343.3	**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
		C343.4	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
		C343.5	**Explain** the working of single phase inverter, **Describe** the working of PWM inverter, and Study various voltage control methods in inverter.
		C343.6	**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**	C344.1	**Classify** distribution systems, its **types** and substations. .
		C344.2	**Design** of different earthing systems for residential and industrial premises. .
		C344.3	Select **methods** of condition monitoring and **testing** of various Electrical Equipment's.
		C344.4	**Estimate** and Costing of residential and industrial premises
		C344.5	**Summarize** the importance of electrical safety.
(313145)	**Seminar and Technical Communication**	C345.1	**Relate** with the current technologies and innovations in Electrical engineering.
		C345.2	**Improve** presentation and documentation skill.
		C345.3	**Apply** theoretical knowledge to actual industrial applications and research activity.
		C345.4	**Communicate** effectively.
Semester –II			
(313152)	**Audit Course III**	C345.1	**Understand** of renewable and non-renewable sources of energy
		C345.2	**Gain** knowledge about working principle of various solar energy systems
		C345.3	**Understand** the application of wind energy and wind energy conversion system
		C345.4	**Develop** capability to do basic design of bio gas plant
		C345.5	**Understand** the applications of different renewable energy sources like ocean thermal, hydro, geothermal energy etc.
(313146)	**Power System II**	C346.1	**Develop** analytical ability for Power system
		C346.2	**Introduce** concept of EHVAC and HVDC System.
		C346.3	**Demonstrate** different computational methods for **solving** problems of load flow.
		C346.4	**Analyse** the power system under symmetrical and Unsymmetrical

			fault conditions.
(313147)	**Control System I**	C347.1	**Understand** basic of Control system Engineering
		C347.2	**Model** physical system,
		C347.3	**Determine** time response of linear system
		C347.4	**Analyse** stability of LTI system
		C242.5	**Design** PID controller for LTI system
		C242.6	**Understand** the roll of Controller in industry
(313148)	**Utilization of Electrical Energy**	C348.1	**Understand** the importance of maximizing the energy efficiency by optimum utilization of electrical energy. **Classify** and **apply** the different method of electrical heating **Analyze** the performance of arc furnaces
		C348.2	**Design** -heating element for resistance furnaces and illumination schemes. **Identify** different sources of light, illumination schemes
		C348.3	**Understand** various Control devices and their use in Refrigeration, Air Conditioning
		C348.4	**Understand** electrochemical processes and **Apply** these in practical world, modern welding techniques.
		C348.5	**Develop** self and lifelong learning skills, **introduce** professionalism for successful career.
		C348.6	**Analyze** the performance electric traction, , electric traction
(313149)	**Design of Electrical Machines**	C349.1	**Analyze** heating and cooling curve of transformer, **Describe** construction of transformer, **Explain** Specification of transformer
		C349.2	**Derive** the output equation of transformer, **Design** the transformer
		C349.3	**Determine** the performance parameter of transformer, **Develop** the flow chart for transformer design.

		C349.4	**Design** of AC winding**, Derive** output equation of induction motor, explain ranges of Specific magnetic and electric loading.
		C349.5	**Design** of Rotor of induction motor, **Select** suitable combination of stator and rotor slot, **select** length of airgap.
		C349.6	**Analyze** Performance parameter of induction motor, **Calculate** short and continuous duty of electrical machine
(313150)	**Energy Audit and Management**	C350.1	To get **knowledge** of BEE Energy policies, Electricity Acts
		C350.2	**Use** various energy measurement and audit instruments
		C350.3	**Carry out** preliminary energy **audit** of various sectors
		C350.4	Enlist energy conservation and demand side **measures** for electrical, thermal and utility Systems.
		C350.5	**Solve** simple problems on cost benefit **analysis**
(313151)	**Electrical Workshop**	C351.1	**Integrate** electrical/electronic circuits for useful applications
		C351.2	**Acquire** hardware skills to fabricate circuits designed
		C351.3	**Test** & Debug Circuits
		C351.4	**Produce** the results of testing in the form of report
(313153)	**Audit Course IV**	C353.1	To get **knowledge** of Bio Energy Systems
		C353.2	**Use** various energy measurement and Conservation schemes
		C353.3	**Carry out** preliminary energy **audit** of various sectors
		C353.4	Enlist energy conservation and demand side **measures** for electrical, thermal and utility Systems.
		C353.5	**Solve** simple problems on cost benefit **analysis**