AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING
ME-E&TC-MICROWAVE
COURSE OUTCOMES

Second Year: 2017 Course			
Course Code	**Course Name**	**Course Outcomes**	
Semester- I			
504301	Electromagnetic Antenna and Theory	CO1	Formulate the radiation fields of an antenna, at both near- and far zone; and identify the duality and reciprocity principles.
		CO2	Identify, analyze and interpret the fundamental parameters of antennas.
		CO3	Formulate and analyze the radiation from wire antennas (dipoles, monopoles, loop antennas) and antenna arrays
		CO4	Formulate and analyze the aperture antennas. Identify the field equivalence principle.
		CO5	Formulate and analyze the travelling wave antennas
		CO6	Formulate and analyze the microstrip antennas.
504302	RF and Microwave Circuit	CO1	Determine and use parameters of Transmission Line for analysis and design of Microwave Network using Matrix algebra and Signal Flow Graph.
		CO2	Study and Use of Microwave components for different applications
		CO3	Perform analysis of Nonlinearity and Time variance
		CO4	Understand Microwave Semiconductor Devices and modelling.
		CO5	Perform analysis of Microwave Amplifiers design.
504303	Microwave Measurement	CO1	Understand, plan and execute the properties of transmission lines
		CO2	Implement the method of attenuation and noise measurement.
		CO3	Analyze the different operation and measurement by using Network Analyser.
		CO4	Solve the Practical problem in RF power measurement.
504304	Research Methodology	CO1	Frame the problem with the correct research methodology.
		CO2	Collect data that accurately addresses the research problem
		CO3	Verify performance of process system by multi-scale modelling system
		CO4	Prepare and defend a research proposal
504305	Fiber Optic Communication	CO1	Describe the working mechanism of optical fiber components; and analyze the optical link in terms of power and system rise time.
		CO2	Describe the types and working mechanism of optical amplifiers; and to recognize the need suitable type of amplifier in the required application.
		CO3	Use the advanced optical technology of SONET/SDH in optical networks.
		CO4	Understand the issues in WDM optical networks.
Sem - II			
504307	Computational Electromagnetic	CO1	Identify conventional and state-of-the-art computational electromagnetic techniques and apply to solve electromagnetic problems.
		CO2	Understand different aspects of finite difference time domain analysis in one, two and three dimensions.
		CO3	Understand different types of variation methods and their applications to solve electromagnetic problems
		CO4	Explore basic steps in finite element analysis and method of moments.

504308	RF and MMIC Technology	CO1	Determine and use parameters of MMIC Technology
		CO2	Determine and study of Fabrication of MMIC Technology
		CO3	Perform analysis, Study of Synthesis Techniques for design of Linear and non Linear MMIC
		CO4	Understand CAD Techniques for MMIC Design
		CO5	Understand different MMIC Measurement Techniques
		CO6	Understand different applications of MMIC Technology
504309	Wireless Communication System	CO1	Explore Overview of Wireless systems and basics of cellular communication.
		CO2	Understand various Propagation Characteristics of wireless Channel.
		CO3	Understand GSM System architecture, General Packet Radio Service (GPRS) and services provided by GSM.
		CO4	Know system architecture of Universal Mobile Telecommunications System (UMTS), Wireless network architecture, Physical layer etc.
504310	Microstrip Antenna	CO1	Identify, analyze and interpret the fundamental parameters of Microstrip antennas.
		CO2	Formulate the analytical model and radiation fields of the Microstrip antenna, at both near- and far zone.
		CO3	Formulate and analyze the model and design rectangular and circular microstrip antenna.
		CO4	Formulate and analyze the radiation from Fractal and reconfigurable antenna
604301	EMI and EMC Techniques	CO1	Understand concept of EMI / EMC related to product design & development.
		CO2	Analyze the different EM coupling principles and its impact on performance of electronic system.
		CO3	Know how to bring down the electromagnetic interference highlighting the concepts of both susceptibility and immunity.
		CO4	Analyze various EM compatibility issues with regard to the design of PCBs and ways to improve the overall system performance.
604302	Radar and Satellite Communication	CO1	Understand radar Systems, Analyze radar Systems and radar signal processing system.
		CO2	Know the wide range of applications of radar Systems.
		CO3	Understand Target detection and tracking using radar systems
		CO4	Understand and classify multiple Access techniques.
604303	Environmental Studies	CO1	Describe Renewable and non-renewal energy resources and various associated problems.
		CO2	Understand overview of Ecosystems: Concept, Structure and function.
		CO3	Describe Causes, effects and control of environmental pollution
		CO4	Analyze the importance of various Environment protection act.