MAR AUGUSTHINOSE COLLEGE RAMAPURAM

Department of Electronics

POs, PSOs and COs of Under Graduate M.Sc. Electronics Programme

PROGRAMME OUTCOMES (POs)

Upon completion of the M.Sc. Electronics Degree Programme, the student will be able to

PO1	Impart the basic and up-to-date knowledge in the electronics with sufficient practical sessions.
PO2	To be specific, subject areas like Digital signal processing, Embedded Electronics, Control system, Digital Design, Artificial Intelligence, Deep learning, Optical communication techniques etc. are discussed with adequate theory knowledge which will help to develop the system.
PO3	To have practical knowledge in these subjects.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1	Prepare students to pursue research in Electromagnetics, Signal Processing, Image Processing, Artificial Intelligence and ANN, Robotics
PSO2	To become an entrepreneur in embedded based system, digital and analog system design.
PSO3	To develop multi-skilled engineers who are able to spearhead the progress of the nation in the information age.

COURSE OUTCOME

Semester -1

Course Code	Course	Course outcome
EL010101	Network Analysis and Synthesis	1. To get a thorough knowledge of basic circuit laws, Laplace and Fourier Transforms and its applications 2. To understand general properties of signals and systems 3. To analyse and synthesis passive networks.
EL010102	Electronic Circuits Analysis	1. To study the characteristics and analysis of active electronic devices 2. To familiarize the operation amplifiers and its applications 3. To know the design of various applications of analog ICs 4. To understand the various power electronic devices and its applications
EL010103	IC Fabrication and MEMS	1. To study the IC Fabrication Techniques 2. To familiarize the MES technology, fabrication and applications
EL010104	Digital Communication Techniques	1. To understand information theory and coding 2. To familiarize various coding techniques and methods 3. To understand convolutional codes and cryptography 4. To get the knowledge on digital modulation techniques and their comparison.
EL010105	Advanced Electronics Circuit Lab	1. To familiarize the designing and troubleshooting the digital circuits, analog circuits, IC based circuits 2. To get in-depth knowledge on op-amp circuits and their applications 3. To familiarize the power electronics-based devices and their applications 4. To design and set up various modulation-based circuits

Semester -2

Course Code	Course	Course outcome
EL010201	Digital Signal Processing & Applications	1. To get a thorough knowledge on FFT and its applications 2. To familiarize digital IIR and FIR filter designing and its realization 3. To discuss the various applications of DSP
EL010202	AVR based Embedded Systems	1. To give an in-depth knowledge on AVR microcontroller 2. To get a thorough knowledge on AVR assembly language programming 3. To familiarise the interfacing of AVR and its applications
EL010203	Mobile Computing	1. To introduce mobile computing technology, 2. To know the various emerging technologies in mobile communications 3. To familiarize the various mobile communication standards and applications
EL010204	VLSI Design and Analysis	1. To get a thorough knowledge on MOS technology 2. To familiarize the basic IC fabrication process 3. To discuss the various MOS circuit design process and FPGA
EL010205	Microcontrollers and DSP Lab	1. To familiarize the AVR microcontroller programming methods 2. To study how to interface AVR with various peripherals and controlling devices 3. To familiarize MATLAB programming and its applications in DSP

Semester -3

Course Code	Course	Course outcome
EL010301	Digital System Design	1. To get an in-depth knowledge on digital systems 2. To design digital circuits 3. To get a knowledge on Finite State Machines 4. To introduce VHDL and to familiarize the design of digital circuits using VHDL
EL010302	Control Systems	1. To understand the basic knowledge on control system and its classification 2. To study in detail the need for block diagram and signal flow graph representation 3. To have an idea about the concept of stability and various techniques for stability analysis 4. To understand the various plots used for analysing control systems 5. To introduce the concept of state space modelling of systems 6. To discuss the various real time applications of control system including PLC and SCADA
EL010303	Object Oriented Programming	1. To acquire knowledge on Object-Oriented Programming 2. To introduce Python programming concepts in Python 3. To understand the Raspberry Pi single board computer and its programming using Python
EL810301	Robotics	1. To get an introduction about Robots and Robotics 2. To understand the kinematics and dynamics of Industrial Robotics arms and mobile robots 3. To get an introduction about various types sensors and actuators for Robots 4. To understand the design of robot controllers and Programming of robotic systems
EL010304	Object Oriented Programming Lab	1. To acquire programming skills on Object-Oriented Programming concepts in Python 2. To get a practical knowledge on interfacing Raspberry Pi with Python

Semester -4

Course Code	Course	Course outcome
EL010401	ARM Processor Based Embedded System	1. To equip the students to use ARM Processor 2. To get a thorough knowledge of using ARM Processor with Embedded C Programming for Application Development 3. To understand how practically apply gained theoretical knowledge in order to design, analyse and implement embedded systems.
EL810402	Biomedical Electronics	1. To understand the basics of instrumentation and various biomedical sensors 2. To understand the measurement of physiological quantities 3. To familiarize the various instrumentation related to biomedical equipment
EL810403	Optical Sensor Technology	1. To study and familiarize different optical sensors and its application in different fields of science.
EL010402	VHDL Programming Lab	1. To familiarize Xilinx programming environment 2. To simulate the combinational and sequential logic circuits
EL010403	Project Work	1. To help practical, industrial and professional experience to develop his/her own electronic circuits for study, develop or new innovations.