

SEM 1

EX 1141: ENVIRONMENTAL STUDIES

CO1: Gain knowledge about environment and ecosystem.

CO2: Students will learn about natural resource, its importance and environmental impacts of human activities on natural resource.

CO3: Gain knowledge about the conservation of biodiversity and its importance.

CO4: Aware students about problems of environmental pollution, its impact on human and ecosystem and control measures.

CO5: Students will learn about social issues and the environment and also increase in population growth and its impact on environment.

EX 1142 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

CO1: Study circuits in a systematic manner suitable for analysis and design

CO2: Analyze the electric circuit using KCL and KVL

CO3: Understand fundamental laws governing Magnetism, Electro Magnetic induction, AC generation

CO4: Evaluate rms value, average value of different waveforms

CO5: Understand the concept of band gap, working of different semiconductor diodes.

EX 1143: ELECTRICAL and ELECTRONICS WORKSHOP

CO1: Verify the network theorems and operation of typical electrical circuits

CO2: Choose the appropriate equipment for measuring electrical quantities and verify the same for different circuits.

CO3: Prepare the technical report on the experiments carried.

EX 1144: DIGITAL ELECTRONICS LAB

CO1: Verify the truth tables of different digital circuits

CO2: Choose the appropriate equipment for measuring electrical quantities and verify the same for different circuits.

CO3: Design simple digital circuits

CO4: Prepare the technical report on the experiments carried.

EX1131: DIGITALELECTRONICS

CO1: Understand and represent numbers in powers of base and converting one from the other, carry out arithmetic operations

CO2: Understand basic logic gates, concepts of Boolean algebra and techniques to reduce/simplify Boolean expressions

CO3: Analyze and design combinatorial as well as sequential circuits

CO4: Familiarize different logic ICs

SEM 2

EX1241: SOLID STATE ELECTRONICS

CO1: Remember symbols of various electronic devices

CO2: Describe the behaviour of semiconductor materials

CO3: Reproduce the I-V characteristics of diode/BJT/MOSFET devices

CO4: Apply standard device models to explain/calculate critical internal parameters of semiconductor devices

CO5: Understand the behaviour and characteristics of power devices such as SCR/UJT etc.

EX1242: NETWORK ANALYSIS

CO1: Analyze the electric circuit using network theorems

CO2: Determine Transient and steady state response for RL,RC and RLC circuits

CO3: Understand time domain, complex frequency, poles and zeros.

CO4: Determine the stability

CO5: Understand the two-port network parameters with an ability to find out two-port network parameters

EX1243: BASIC ELECTRONICS LAB

CO1: Examine the characteristics of basic semiconductor devices.

CO2: Perform experiments for studying the behaviour of semiconductor devices for circuit design applications.

CO3: Calculate various device parameters 'values from their IV characteristics

CO4: Interpret the experimental data for better understanding the device behaviour.

EX1244: C PROGRAMMING LAB

CO1: Write code in C language for arithmetic and logical problems

CO2: Implement conditional branching, iteration and recursion.

CO3: Use concept of modular programming by writing functions and using them to form a complete program

CO4: Prepare the technical report on the experiments carried.

EX1231: PROGRAMMING IN C

CO1: Write code in C language for arithmetic and logical problems

CO2: Implement conditional branching, iteration and recursion.

CO3: Use concept of modular programming by writing functions and using them to form a complete program

CO4: Understand the concept of arrays, pointers and structures and use them to develop algorithms and programs for implementing searching and sorting

SEM 3

EX1341: ELECTRONIC CIRCUITS

CO1: Illustrate about rectifiers, transistor and FET amplifiers and its biasing. Also compare the performances of its low frequency models.

CO2: Describe the frequency response of FET and BJT amplifiers.

CO3: Explain the concepts of feedback and construct feedback amplifiers and oscillators.

CO4: Summarizes the performance parameters of amplifiers with and without feedback

CO5: Describe the concept of power amplifiers and understand various types of distortions in large signal amplifiers

CO6: Design and construct single stage amplifiers, oscillators and wave shaping circuits.

EX1342: COMMUNICATION ENGINEERING

CO 1: Understand the requirements and the protocols employed in the fundamental components in a communication network.

CO 2: Determine the suitability of a particular communication system to a given problem

CO3: Describe the concept of "noise" in analog and digital communication systems

CO 4: Understand the concept of different telephone systems

EX1343: MICROPROCESSOR & INTERFACING

CO1: Understand the Architecture of 8085 Microprocessor

CO2: Familiarize 8085 instruction set and construct 8085 assembly language program

CO3: Analyze the time of Execution and performance of the 8085 processor

CO4: Evaluate the performance of 8085 using 8255

CO5: Analyse the Data transfer through 8237&8259&8251

CO6: Understand the architecture of 8086

EX1344: ELECTRONICS CIRCUITS LAB

CO1: Understand and analyze electronic circuits.

CO2: Choose the appropriate equipment for measuring electrical quantities and verify the same for different circuits.

CO3: Able to understand and apply circuit theorems and concepts in engineering Applications

CO4: Prepare the technical report on the experiments carried.

CO5: Able to design and troubleshoot various electronic circuits using discrete components

EX1345: MICROPROCESSOR LAB

CO1: Be proficient in use of IDE's for designing, testing and debugging microprocessor based system

CO2: Interface various I/O devices and design and evaluate systems that will provide solutions to real-world problem

CO3: Prepare a technical report on the experiments carried

EX 1332: COMPUTER ORGANIZATION

CO1: Recall the basic structure of Computers.

CO2: Explain Multibus Organization.

CO3: Understand the concepts of Memory Structure.

CO4: Understand the concepts of optical storage devices.

CO 5: Explain the concept of Operating Systems.

CO 6: About computers in the corporate world.

SEM 4

EX 1441: APPLIED ELECTROMAGNETIC THEORY

CO1: Understand the fundamentals of Electrostatics and Magnetostatics hence get the insight of the characteristics of materials and their interactions with electric and magnetic fields

CO2: Understand the application of Vector Differential and Integral operators in Electromagnetic Theory.

CO3: Interpret Maxwell's equations in differential and integral forms, both in time and frequency domains.

CO4: Describe the complex ϵ , μ , and σ , plane waves

CO 5: Understand the concept of TE, TM, TEM waves

EX1442: LINEAR INTEGRATEDCIRCUIT

CO1: Infer the DC and AC characteristics of operational amplifiers and its effect on output and their compensation techniques.

CO2: Elucidate and design the linear and nonlinear applications of an opamp and special application ICs.

CO3: Explain and compare the working of multi vibrators using special application IC 555 and general-purpose op-amp.

CO4: Understand the concept of voltage regulators and design a simple regulator circuits using special IC's

CO5: Understand the concept of active filters, analyze its frequency response and design of simple first order butterworth filters

EX 1443: ELECTRONIC INSTRUMENTATION

CO1: Describe the working principle of different measuring instruments

CO2: Choose appropriate measuring instruments for measuring various parameters in their laboratory courses

CO3: Correlate the significance of different measuring instruments, recorders and Oscilloscopes

EX1444. MICROCONTROLLERS AND APPLICATIONS

CO1: Understand the architecture of 8051 microcontroller

CO2: Familiarize the instruction set and construct assembly language program

CO3: Analyze the performance of peripheral Devices interfacing with 8051

CO4: Understand the architecture of PIC16F877A architecture

CO5: Analyze the serial communication using USART, SPI, I²C

CO6: Evaluate the performance of LED, Switch, LCD, Stepper motor using PIC16F877 E

EX1445: LINEAR IC LAB

CO1: Interpret op-amp data sheets.

CO2: Analyze and prepare the technical report on the experiments carried out.

CO3: Design application-oriented circuits using Op-amp and 555 timer ICs

CO4: Create and demonstrate live project using ICs.

EX 1446: MICROCONTROLLER LAB

CO1: Be proficient in use of IDE 's for designing, testing and debugging microprocessor and microcontroller-based system

CO2: Interface various I/O devices and design and evaluate systems that will provide solutions to real world

CO3: Prepare the technical report on the experiments carried.

EX1451.1: PRINCIPLES OF MOBILE COMMUNICATION

CO1: Illustrate about different communication standards.

CO2: Describe different radio transmission techniques.

CO3: Explain the concepts of multiple access techniques.

CO4: Understand a basic cellular system

CO5: Describe the concept of GSM

CO6: Describe various traffic routing techniques.

SEM 5

EX 1541: DIGITAL SIGNAL PROCESSING

CO1: Understand Digital Signal Processing Systems. Signals Elementary of Discrete Time Signals, Discrete Time Systems - Various Classifications of Discrete Time Systems. Discrete Time Fourier Transform (DTFT)

CO2: Explain and Calculate Discrete Fourier Transform, Circular Convolution, Linear Convolution using. Computation of IDFT.

CO3: Understand and explain Fast Fourier Transforms

CO4: Understand and create IIR and FIR systems

CO5: understand and apply Filters, Design of Analog Butterworth Low Pass filter, Impulse Invariant and Bilinear Transformation

EX1542: DIGITAL COMMUNICATION

CO1: Understand and Explain different pulse modulation schemes.

CO2: Explain digital modulation techniques.

CO3: Understand and explain multiplexing techniques.

CO4: Understand and explain digital transmission schemes.

CO5: Understand and explain spread spectrum techniques.

EX1543: COMPUTER NETWORKS

CO1: Remember various network technologies, design issues and characteristics.

CO2: Understand the purpose of computer networks and basic issues in information security.

CO3: Apply the use of layer architecture for networking systems, information security measures.

CO4: Analyses the concept of different models of network and the working of various layers.

CO5: Evaluate data link controls and Information Security policies.

CO6: Describe the different routing algorithms and its concepts.

EX 1545: COMMUNICATION LAB

CO1: Understand basic elements of a communication system.

CO2: Analyze the baseband signals in time domain and in frequency domain.

CO3: Build understanding of various analog and digital modulation and demodulation techniques.

CO4: Prepare the technical report on the experiments carried.

EX1551.1: ENTERTAINMENT ELECTRONICS TECHNOLOGY

CO1: Understand basic elements of a recording and reproduction system.

CO2: Understand and explain the concept of different types of speakers.

CO3: Understand and explain Television standards.

CO4: Understand and explain various electronic gadgets.

SEM 6**EX 1641: OPTICAL COMMUNICATION**

CO1: Recollection of basic principles of optics transmitting light on a fiber. Classification of Optical Fibers.

CO2: Understand the Signal Degradation in Optical Fibers.

CO3: Understand the Optic Fiber Couplers, Splicing Techniques and Optic fiber Connectors.

CO4: Understanding Optical sources and Detectors

EX 1642: BIOMEDICAL ENGINEERING

CO1: Understand the basic knowledge of physiology.

CO2: Explore the occurrence of potential and operation of cardiovascular measurements.

CO3: Understand the basic knowledge on respiratory and pulmonary measurements.

CO4: Describe the methods used for monitoring the patients.

EX1643: NANOELECTRONICS

CO1: Describe the principles of nanoelectronics and the processes involved in making nano components and material.

CO2: Explain the advantages of the nano-materials and appropriate use in solving practical problems.

CO3: Explain the various aspects of nano-technology and the processes involved in making nano components and material.

CO4: Understand and analyze various techniques for characterizing nanomaterials.

EX1644: SIMULATION LAB

CO1: Simulate the characteristics of electronic devices

CO2: Design and Simulate simple electronics circuits and observe its output

CO3: Preparing a Written Report on the Study conducted for presentation to the Department.

EX1651.2: MICROWAVE ENGINEERING

CO1: Understand Microwave frequency band and transmission line used in microwave communication.

CO2: Apply Waveguide theory and Analyze the wave pattern.

CO3: Understand the operation of various microwave devices.

CO4: Analyze the working of various Microwave amplifier and oscillator.

CO5: Understand the working of microwave solid state devices.

EX 1645: PROJECT

CO1: Survey and study of published literature on the assigned topic.

CO2: Working out a preliminary Approach to the Problem relating to the assigned topic.

CO3: Conducting preliminary Analysis/ Modelling/ Simulation/ Experiment/ Design/ Feasibility.

CO4: Preparing a Written Report on the Study conducted for presentation to the Department.

CO5: Final Seminar, as oral Presentation before an Internal & External evaluation committee.