



## **Electronics And Communication Engineering**

### **III Year-I Sem**

#### **ADVANCED COMMUNICATION SKILLS LAB (EN508HS)**

##### **Course Outcomes:**

- 1) Gathering ideas and information to organise ideas relevantly and coherently.
- 2) Making oral presentations.
- 3) Writing formal letters.
- 4) Transferring information from non-verbal to verbal texts and vice-versa.
- 5) Writing project/research reports/technical reports.
- 6) Participating in group discussions.
- 7) Engaging in debates.
- 8) Facing interviews.
- 9) Taking part in social and professional communication.

#### **MICROPROCESSORS AND MICROCONTROLLERS LAB (EC505PC)**

##### **Course Outcomes:**

After going through this course the student will be able to

- 1) The student will learn the internal organization of popular 8086/8051 microprocessors/microcontrollers.
- 2) The student will learn hardware and software interaction and integration.
- 3) To apply the concepts in the design of microprocessor/microcontroller based systems in real time applications



### **BUSINESS ECONOMICS AND FINANCIAL ANALYSIS (SM504MS)**

#### **Course Outcomes:**

The students will understand the various Forms of Business and the impact of

- 1) Economic variables on the Business.
- 2) The Demand, Supply, Production, Cost, Market Structure,
- 3) Pricing aspects are learnt.
- 4) The Students can study the firm's financial position by analysing the
- 5) Financial Statements of a Company.

### **DATA COMMUNICATIONS AND NETWORKS (EC502PC)**

#### **Course Outcomes:**

Upon completing this course, the student will be able to

- 1) Know the Categories and functions of various Data communication Networks
- 2) Design and analyze various error detection techniques.
- 3) Demonstrate the mechanism of routing the data in network layer
- 4) Know the significance of various Flow control and Congestion control Mechanisms
- 5) Know the Functioning of various Application layer Protocols.

### **MICROPROCESSORS AND MICROCONTROLLERS (EC501PC)**

#### **Course Outcomes:**

Upon completing this course, the student will be able to

- 1) Understands the internal architecture, organization of 8086 processors.
- 2) Understands the assembly language programming of 8086 processors
- 3) Understands the internal architecture, organization and assembly language programming of 8051/controllers
- 4) Understands the interfacing techniques to 8086 and 8051 based systems.
- 5) Understands the internal architecture of ARM processors and basic concepts of advanced ARM processors.

**CONTROL SYSTEMS****(EC503PC)****Course Outcomes:**

At the end of this course, students will demonstrate the ability to

- 1) Understand the modeling of linear-time-invariant systems using transfer function
- 2) Understand the modeling of statespace representations
- 3) Understand the concept of stability for linear-time invariant systems.
- 4) Understand the concept of assessment for linear-time invariant systems
- 5) Design simple feedback controllers.

**DATA COMMUNICATIONS AND NETWORKS LAB****(EC506PC)****Course Outcomes:**

- 1) Understand the practical approach to network communication protocols.
- 2) Understand network layers, structure/format and role of each network layer.
- 3) Able to design and implement various network application such as data transmission between client and server, file transfer, real-time multimedia transmission.
- 4) Understand the various Routing Protocols/Algorithms and Internetworking.

**ELECTRONIC MEASUREMENTS AND INSTRUMENTATION****(EC513PE)****Course Outcomes:**

- 1) Upon completing this course, the student will be able to Measure electrical parameters with different meters and understand the basic definition of measuring parameters.
- 2) understand the basic definition of measuring parameters
- 3) Use various types of signal generators, signal analyzers for generating and analyzing various real-time signals.
- 4) Operate an Oscilloscope to measure various signals.
- 5) Measure various physical parameters by appropriately selecting the transducers



## **CYBER SECURITY**

### **Course Outcomes:**

- 1) Understand cyber-attacks, types of cybercrimes, cyber laws and also how to protect them self and ultimately the entire Internet community from such attacks
- 2) Understand the Fundamentals of Cyber Security
- 3) Apply Security Principles to Network Infrastructure
- 4) Learn about Cryptography and Encryption
- 5) Analyze and Defend Against Common Cyber Attacks

## **INTELLECTUAL PROPERTY RIGHTS (\*MC510)**

### **Course Outcomes:**

On successful completion of this course the student should be able to:

- 1) Distinguish and Explain various forms of IPRs.
- 2) Identify criteria's to fit one's own intellectual work in particular form of IPRs.
- 3) Apply statutory provisions to protect particular form of IPRs.
- 4) Analyse rights and responsibilities of holder of Patent, Copyright, Trademark, Industrial Design etc.
- 5) Identify procedure to protect different forms of IPRs national and international level.

**Principal**



## **Electronics And Communication Engineering**

### **III Year-II Sem**

#### **OBJECT ORIENTED PROGRAMMING THROUGH JAVA (EI603PC/EC611PE)**

##### **Course Outcomes:**

- 1) An appreciation of the principles of object oriented programming;
- 2) A competence to design, write, compile, test and execute straightforward programs using a high level language;
- 3) An understanding of the principles and practice of object oriented programming and design in the construction of robust, maintainable programs which satisfy their requirements. Able to develop applications using Applet, awt and GUI Programming.
- 4) Demonstrate the ability to employ various types of selection constructs in a Java program. Be able to employ a hierarchy of Java classes to provide a solution to a given set of requirements. Be able to make use of members of classes found in the Java API.
- 5) Be able to implement, compile, test and run Java programs comprising more than one class, to address a particular software problem. good documentation to the finished programs.

## **Fundamentals of Management For Engineers**

##### **Course Outcomes:**

After completing this course the student must demonstrate the knowledge and ability to:

- 1) Understand the significance of management in particular profession
- 2) Understand the various management functions
- 3) The students can explore the management practices in their domain area 2
- 4) Understand the management concepts Analyze the concepts of management
- 5) Applications of concepts in practical aspects Development of managerial skills for engineers



### **DIGITAL SIGNAL PROCESSING (EC602PC)**

#### **Course Outcomes:**

Upon completing this course, the student will be able to

- 1) Understand the LTI system characteristics and Multirate signal processing.
- 2) Understand the inter-relationship between DFT and various transforms.
- 3) Design a digital filter for a given specification.
- 4) Understand the significance of various filter structures
- 5) Understand the significance of various filter structures and effects of round off errors

### **DIGITAL SIGNAL PROCESSING LAB (EC604PC)**

#### **Course Outcomes:**

- 1) Experiment concepts of DSP and its applications using MATLAB Software
- 2) To understand about the basic signal generation
- 3) To learn Fourier Transform Concepts
- 4) To design FIR filters
- 5) To design IIR filters.
- 6) Demonstrate their abilities towards DSP processor based implementation of DSP systems

### **e - CAD LAB (EC605PC)**

#### **Course Outcomes:**

- 1) Design different types of logic gates using CMOS inverter and analyze their transfer characteristics.
- 2) Provide design concepts required to design building blocks of data path using gates and digital circuits using Xilinx and FPGA kits.
- 3) Design simple memories using MOS transistors and can understand design of large memories.
- 4) Design & simulation of different digital devices using the front end tools.



- 5) Designing of ALU to perform arithmetic & logical operations.

### **VLSI DESIGN (EC603PC)**

#### **Course Outcomes:**

Upon completing this course, the student will be able to

- 1) Acquire qualitative knowledge about the fabrication process of integrated circuits using MOS transistors.
- 2) Draw the layout of any logic circuit which helps to understand and estimate parasitic effect of any logic circuit
- 3) Design building blocks of data path systems, memories
- 4) Design building blocks of simple logic circuits using PLA, PAL, FPGA and CPLD.
- 5) Understand different types of faults that can occur in a system and learn the concept of testing and adding extra hardware to improve testability of system.

### **SCRIPTING LANGUAGES LAB (EC606PC)**

#### **Course Outcomes:**

- 1) Ability to understand the differences between Scripting languages and programming languages
- 2) Able to gain some fluency programming in Ruby, Perl, TCL

### **ANTENNAS AND PROPAGATION (EC601PC)**

#### **Course Outcomes:**

Upon completing this course, the student will be able to explain

- 1) the mechanism of radiation, definitions of different antenna characteristic parameters and establish their mathematical relations.
- 2) Characterize the antennas based on frequency, configure the geometry and establish the radiation patterns of VHF, UHF and Microwave antennas and also antenna arrays.
- 3) Specify the requirements for microwave measurements and arrange a setup to carry out the antenna far zone pattern and gain measurements in the laboratory.
- 4) Classify the different wave propagation mechanisms,
- 5) determine the characteristic features of different wave propagations, and estimate the parameters involved.



## **Fundamentals Of AI**

**(AM611OE)**

### **Course Outcomes:**

- 1) Gain the knowledge of what is AI, risks and benefits of AI, limits of AI and the ethics involved in building an AI application.
- 2) Understand the nature of environments and the structure of agents.
- 3) Possess the ability to select a search algorithm for a problem and characterize its time and space complexities.
- 4) Possess the skill for representing knowledge using the appropriate technique
- 5) Gain an understanding of the applications of AI

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