COURSE OUTCOMES

Final Year (2019 Pattern) Semester I

404181: Radiation & Microwave Theory	
Students will be able to:	
404181.1	Interpret the fundamentals of electromagnetic to derive free space propagation equation and distinguish various performance parameters of antenna.
404181.2	Identify various modes in the waveguide. Compare: coaxial line, rectangular waveguides & striplines and describe applications of the same.
404181.3	Sketch and describe construction and working principle of passive microwave components (E / H / Magic tees, Isolators, circulator & directional coupler) to explain the behavior by using scattering matrix parameters.
404181.4	Describe construction and working principle of active microwave devices /components. Classify the microwave tubes w. r. to it power, working and application. Describe Klystron tubes, Magnetron, TWT to interpret use of them in different applications.
404181.5	Discuss the structure, characteristics, operation, equivalent circuits and applications of two terminal microwave solid state active devices (Tunnel diode, Gunn Diode, PIN Diode, Schottky Barrier Diode and Varactor).
404181.6	Draw and explain functionalities of various microwave systems and subsystems, device set ups of microwave measurement devices and Identify the effect of radiations on environmental sustainability.
404182: VLSI Design and Technology	
Students will be able to:	
404182.1	Design & analyze a digital system for given specifications using different HDL constructs to minimize resource utilization in FPGA & verify its functionality.
404182.2	Explain factors limiting fmax of the system , On-Chip Issues degrading the Chip performance , Efficient Structures to minimize Clock Skew
404182.3	Discuss and Compare Architecture, Specifications & Applications of PLDs such as CPLDs & FPGAs.
404182.4	Discuss Second Order I-V Effects in Short-channel MOSFETs, realize digital systems using conventional CMOS logic & Transmission Gate logic. Demonstrate effect of device sizing on Relative rise & fall times in CMOS systems.
404182.5	Explain ASIC Design flow & SPICE modeling with simulation, Illustrate various fault models for testing VLSI circuits to detect faults in a given circuit.

COURSE OUTCOMES

404183: Cloud Computing	
Students will be able to:	
404183.1	Classify different characteristics of cloud computing and list out advantages, disadvantages, applications of cloud computing Explain different types of cloud service models and Cloud types.
404183.2	Explain and compare different types of Cloud computing Services based on characteristics, benefits, and applications.
404183.3	Describe and compare various types of Virtualizations.
404183.4	Explain the cloud architecture and verify the cloud security based on cloud computing architecture and security issues.
404183.5	Describe various cloud platforms and distributed computing. Compare distributed computing and cloud computing based on various application.
404184: Elective - 3: Embedded System & RTOS	
Students will be able to:	
404184.1	Describe architecture of embedded systems, list out characteristics and Apply Design metrics to design real time applications to match recent trends in technology. State real time system concepts with evaluation of µcos operating system and its services.
404184.2	List and Discuss different Embedded Linux Development Environment and testing tools to Analyze Linux operating system and device drivers
404184.3	Compare different development platform trends and analyze selection criteria for each platform to interface different sensors and examine hardware software design issues for testing real time embedded system
404184: Elective - 3: JavaScript	
Students will be able to:	
404184.1	Explain the basic features and fundamental concepts of Java Script and Evaluate an application using different data types and conditional & control statements.
404184.2	Elaborate and predict the use of functions and objects in Java script.
404184.3	Identify and apply regular expressions used in java script for handling various string operations.
404184.4	Analyze and determine various aspects of JavaScript object models.
404185: Elective - 4: Data Mining	
Students will be able to:	
404185.1	Outline and discuss the process of data mining and the related performance issues.
404185.2	Identify different data preprocessing techniques and study data warehouse model.
404185.3	Classify Frequent pattern analysis methods and Pattern mining techniques.
404185.4	Identify and compare various data mining algorithms for developing effective data mining
404185.5	Examine clustering & outlier detection methods and Distinguish data mining models in different mining application areas.

COURSE OUTCOMES

404186: Lab Practice - 1: RMT & Cloud Computing	
Students will be able to:	
404186.1 RMT	Recognize different microwave system components and operate VNA to measure S parameters.
404186.2 RMT	Demonstrate and test antenna parameters (pattern, gain) of microwave antenna, using hardware and simulation software.
404186.3 RMT	Differentiate microwave source (reflex klystron , Gunn diode) and compare characteristics of source.
404186.4 RMT	Demonstrate and examine port characteristics of microwave TEES, directional coupler, isolator and circulator.
404186.5 RMT	Execute and experiment to measure VSWR and wavelength using microwave slotted line section.
404186.1 CC	Install Google app engine, create simple web applications using python. Launch web application using GAE launcher. Simulate a cloud scenario using cloud sim.
404186.2 CC	Demonstrate the procedure to launch a virtual machine and transfer file using try stack. Design and deploy a PaaS environment.
404187: Lab Practice - 2: VLSI Design & Elective -3	
Students will be able to:	
404187.1 VLSI	Demonstrate functionality of Digital systems on FPGA using front-end EDA tool, verify functionality using a TestBench & Generate a Synthesis Report.
404187.2 VLSI	Draw layout for a given Combinational & Sequential systems, simulate to verify functionality , Analyse to determine Rise time, Fall time & Dynamic Power dissipation using back-end EDA tool.
404187.1 Embedded & RTOS	Demonstrate real time system concepts: Multitasking, Semaphore, Mailbox, Queue, and Mutex using LPC 2148.
404187.2 Embedded & RTOS	Compare selection criteria for development board platform and Develop interfacing of different sensors with it to examine hardware software design issues for testing real time embedded system.
404187.1 JavaScript	Implement scripts using fundamental concepts of JavaScript.
404187.2 JavaScript	Using concepts of Data types and Objects in JavaScript write scripts of Timer and String operations.
404187.3 JavaScript	Using the concepts of array objects, design the javascript for different array operations.
404187.4 JavaScript	Develop JavaScript applications using event handlers and Document Object Model (DOM).

COURSE OUTCOMES

404188: Project Stage - I	
Students will be able to:	
404188.1	Apply engineering knowledge & demonstrate effective communication skills and attitudes as a professional.
404188.2	Identify Real world problems & formulate solutions for the same.
404188.3	Design & Implement solutions to complex problems using a systematic approach.

Final Year (2019 Pattern) Semester II

404190: Fiber Optic Communication	
Students will be able to:	
404190.1	Explain the working of components and measurement equipment in optical fiber networks
404190.2	Calculate the important parameters associated with optical components like numerical aperture, power loss in fiber optic telecommunication systems.
404190.3	Compare and contrast the performance of major components viz. optical detector and receiver in optical links.
404190.4	Evaluate the performance viability of optical links using the power and rise time budget analysis.
404190.5	Design digital optical link and check its viability using simulation tools.
404190.6	Compile technical information related to state of art components, standards, simulation tools and current technological trends by accessing the online resources to update their domain knowledge.

404191: Elective – 5 Android Development	
Students will be able to:	
404191.1	Relate the required tools for android and apply it for setting up android development environment.
404191.2	Illustrate different activities and services for Android.
404191.3	Design android applications involving data storage in databases.

COURSE OUTCOMES

404191: Elective – 5 Embedded System Design	
Students will be able to:	
404191.1	Describe architecture of embedded system, list out characteristics and apply Design metrics to design real time applications to match recent trends in technology. State real time system concepts and integrate embedded hardware and software.
404191.2	Discuss Embedded system using ARM Cortex M4 for the creating and debugging a firmware.
404191.3	Build a software code for the functionality of the embedded system with GPIO and HAL (Hardware Abstraction Layer).
404191.4	Elaborate an open source RTOS for designing real time applications of embedded system.
404191.5	Develop an advanced embedded system by using SPI based graphical LCD, Touch screen, GUI, Digital Image processing, PID speed Controller.
404191.6	Describe architecture of android, list out characteristics, compare different android platforms and explore Embedded android system.

404191: Elective – 5 Mobile Computing	
Students will be able to:	
404191.1	Compare mobile generations and explain 5G architecture, enabling techniques and applications. Draw and illustrate functionalities of GSM, GPRS, UMTS, spread spectrum techniques, multiple access techniques and handover mechanism. Analyze network performance based on resource allocation, mobility and security.
404191.2	Classify, explain and compare routing protocols used in Ad Hoc networks.
404191.3	Explain the need and functionalities of mobile IP. Compare and describe various TCP enhancements.
404191.4	Compare characteristics of multipath fading channels. Explain and calculate performance parameters like BER, SNR for Rayleigh and Ricean fading channel model.
404191.5	Draw, illustrate and compare various mobile operating systems (OS). List applications of mobile computing. Explain structure, properties and security issues of M-commerce and mobile payment systems.

COURSE OUTCOMES

404192: Elective – 6 Digital Marketing	
Students will be able to:	
404192.1	Design websites using free tools like Wordpress and explore it for digital marketing.
404192.2	Define various keywords for a website & to perform SEO.
404192.3	Define the various SEM Tools and Explain the procedure for their usage in Digital Marketing.
404192.4	Implement and Analyse use of Facebook, Instagram and YouTube for Digital Marketing in real life.
404192.5	Explain the usage of LinkedIn platform for various campaigning.
404192.6	Compare and explain the recent trends in digital marketing.

404193: Innovation & Entrepreneurship	
Students will be able to:	
404193.1	Illustrate concepts of Innovation, Entrepreneurship and list the characteristics of an entrepreneur.
404193.2	Design and develop a business strategy for different product/project development
404193.3	Analyze the pros, cons and sustainability of the given business idea.
404193.4	Demonstrate a pitching presentation of a business plan.
404193.5	Identify various types of startup and Explainthe legal process of registration
404193.6	Construct a patent draft related to the business plan.

404194: Digital Business Management	
Students will be able to:	
404194.1	Discuss Opportunities and Challenges in Digital Business and compare drivers of digital business.
404194.2	Illustrate societal impact and security aspects of digital business and execution steps of digital business plan.
404194.3	Compile the strategy for E-Business and Discuss a typical case study of any one Digital Business

COURSE OUTCOMES

404195: Fiber Optic Lab	
Students will be able to:	
404195.1	Demonstrate characteristics of Optical sources and Detectors based on study of different fiber optic system components
404195.2	Solve numericals based on optical fiber, sources, detectors and power budget & rise time budget analysis
404195.3	Simulate and analyze optical power budget and rise time budget of optical fiber systems and WDM System.

404196: Lab Practice - 3 Android Development (Elective - 5)	
Students will be able to:	
404196.1	Install Android Studio, create simple application and launch it on Android studio.
404196.2	Design application and demonstrate advance application and launch it on android studio

404196: Lab Practice - 3 Embedded System Design (Elective - 5)	
Students will be able to:	
404196.1	Design and implement interface of LED, LCD, switch and various vital peripheral using Embedded C withbSTM32F4.
404196.2	Develop a Specific software code using HAL (Hardware Abstraction Layer) for the functionality of the embedded System.
404196.3	Discuss configuration of FreeRTOS with CubeMX and Explore embedded Android system.

COURSE OUTCOMES

404196 (E): Lab Practice - 3 Mobile Computing (Elective - 5)	
Students will be able to:	
404196.1	Draw and explain GSM architecture, signaling techniques and GPRS services.
404196.2	Simulate and analyze channel characteristics for the given modulation scheme and multiple access technique.
404196.3	Explain TCP/IP and perform file transfer operation in client-server mode. Configure router as a DHCP server.
404196.4	Demonstrate handover mechanism and record outage probability for call drop scenario.

404197: Project Stage - II	
Students will be able to:	
404197.1	Analyze and confirm performance of system as per defined specifications. Demonstrate working of the implemented project and exhibit the designed system.
404197.2	Comprehend and write a project report and draw conclusions at a technical level.