**Academic Year: 2019-20**

**Course Name: ADVANCED COMMUNICATION SKILLS LAB (ACSP) -III SEM**

**Course Code: HU203**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CO | Statement | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|  | Upon Successful Completion of this course, Students will be able to |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CO1 | Speak in English confidently, fluently and effectively. |  |  |  |  |  |  |  |  |  | 3 |  |  |  |  |  |
| CO2 | Exhibit team playing and leadership skills. |  |  |  |  |  |  |  |  |  | 3 |  |  |  |  |  |
| CO3 | Give Presentations effectively. |  |  |  |  |  |  |  |  |  | 3 |  |  |  |  |  |
| CO4 | Comprehend the Verbal and Non-verbal texts. |  |  |  |  |  |  |  |  |  | 3 |  |  |  |  |  |
| CO5 | Prepare Resume, Company profiles and Project presentations. |  |  |  |  |  |  |  |  |  | 3 |  |  |  |  |  |
| CO6 | Enhance possibilities of Job prospects. |  |  |  |  |  |  |  |  |  | 3 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | 3 |  |  |  |  |  |

**Academic Year: 2019-20**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CO | Statement | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
| EC 205.1 | Generate basic signals and Perform basic operation on signals. | **3** | **3** | **3** |  | **3** |  |  |  | **2** |  | **2** | **2** | **3** | **3** |  |
| EC 205.2 | Understand the difference between convolution and correlation of the signals. | **3** | **3** | **3** |  | **3** |  |  |  | **2** |  | **2** | **2** | **3** | **3** |  |
| EC 205.3 | Apply Fourier and Laplace transforms on the signals. | **3** | **3** | **3** |  | **3** |  |  |  | **2** |  | **2** | **2** | **3** | **3** |  |
| EC 205.4 | Compute the response of LTI system for unit impulse, step and sinusoidal signals. | **3** | **3** | **3** |  | **3** |  |  |  | **2** |  | **2** | **2** | **3** | **3** |  |
| EC 205.5 | Test the linearity and time variance properties of LTI systems and apply autocorrelation to remove noise in the signals. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BASIC SIMULATION LAB (BS(P)) (EC206) | | **3** | **3** | **3** |  | **3** |  |  |  | **2** |  | **2** | **2** | **3** | **3** |  |

**Course Name: BASIC SIMULATION LAB (BSP)- III SEM**

**Course Code: EC206**

**Academic Year: 2019-20**

**Course Name: Digital System Design (DSD) -III SEM**

**Course Code: EC202**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CO | Statement | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
| EC202.1 | **Apply the Basic Knowledge of number systems, Boolean algebra to solve simple problems** | **3** | **3** |  |  |  |  |  |  |  |  |  |  | **3** | **3** |  |
| EC202.2 | **Understand Boolean algebra, and apply it to minimize and realize Boolean functions** | **3** | **3** |  |  |  |  |  |  |  |  |  |  | **3** | **3** |  |
| EC202.3 | **Design Various combinational logic circuits** | **3** | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  | **3** | **3** |  |
| EC202.4 | **Design Simple Sequential logic circuits** | **3** | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  | **3** | **3** |  |
| EC202.5 | **Distinguish types of FSMs and design them by following Standard procedure** | **3** | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  | **3** | **3** |  |
| Digital System Design (DSD | | **3** | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  | **3** | **3** |  |

**Academic Year: 2019-20**

**Course Name: Electronic Devices and Circuits (EDC) -III SEM**

**Course Code: EC201**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **Statement** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| CO1 | Design rectifiers, wave shaping circuits and describe the behavior of special purpose diodes | 3 | 3 |  |  |  |  |  |  |  |  |  |  | 3 |  |  |
| CO2 | Apply various biasing techniques to BJT, JFET and MOSFET | 3 | 3 | 3 |  | 3 |  |  |  |  |  |  |  | 3 | 3 |  |
| CO3 | Analyze Single stage amplifiers using BJT | 3 | 3 | 3 |  | 3 |  |  |  |  |  |  |  | 3 | 3 |  |
| CO4 | Analyze the effect of cascading on amplifier Circuits | 3 | 3 | 3 |  | 3 |  |  |  |  |  |  |  | 3 | 3 |  |
| CO5 | Understand small signal low frequency models for JFET and MOSFET amplifiers. | 3 | 3 |  |  |  |  |  |  |  |  |  |  | 3 | 3 |  |
|  |  | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  |  | **3** | **3** |  |

**Academic Year: 2019-20**

**Course Name: Probability Theory and Stochastic Processes (PTSP**)**-III SEM**

**Course Code: EC201**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| **CO** | Course Outcomes **Course OutComes** | **3** | **3** | **3** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **3** | **3** | **0** |
| CO1 | Understand the concept of probability using an appropriate sample space. | **3** | **3** | **3** |  |  |  |  |  |  |  |  |  | **3** | **3** |  |
| CO2 | Understand the concept of a random variable and mathematical modeling of random variables. | **3** | **3** | **3** | **3** |  |  |  |  |  |  |  |  | **3** | **3** |  |
| CO3 | Compute statistical Averages on single and multiple random variables. | **3** | **3** | **3** | **3** |  |  |  |  |  |  |  |  | **3** | **3** |  |
| CO4 | Understand the concept of random processes in time domain and frequency domain. | **3** | **3** | **3** | **3** |  |  |  |  |  |  |  |  | **3** |  |  |
| CO5 | Determine the channel capacity of information signal source. | **3** | **3** |  | **3** |  |  |  |  |  |  |  |  |  | **3** |  |
|  |  | 3.00 | 3.00 | 3.00 | 3.00 |  |  |  |  |  |  |  |  | 3.00 | 3.00 |  |

**Academic Year: 2019-20**

**Course Name: SIGNALS AND SYSTEMS (SAS)-III SEM**

**Course Code: EC203**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **Statement** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| CO1 | Understand the analysis and classification of signals and systems, analyze frequency domain description of periodic signals | **3** | **3** |  |  | **3** |  |  |  |  |  |  |  | **3** |  |  |
| CO2 | Apply the concepts of Convolution to find the response of the system and find the degree of similarity of signals using Correlation | **3** | **3** |  |  | **3** |  |  |  |  |  |  |  | **3** |  |  |
| CO3 | Apply the concepts of Convolution to find the response of the system and find the degree of similarity of signals using Correlation | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  |  | **3** |  |  |
| CO4 | Understand S-domain representation of CT signals and systems using Laplace Transforms | **3** |  | **3** |  |  |  |  |  |  |  |  | **2** |  | **2** |  |
| CO5 | Analyze discrete time signals in Z-domain and perform trasnsform analysis using Z-Transforms**.** | **3** |  | **3** |  |  |  |  |  |  |  |  | **2** |  | **2** |  |
|  | **SIGNALS AND SYSTEMS (SAS)** | **3** | **3** | **3** |  | **3** |  |  |  |  |  |  | **2** | **3** | **2** |  |

**Academic Year: 2019-20**

**Course Name: ANALOG AND DIGITAL COMMUNICATION LAB (ADCM(P))-V SEM**

**Course Code: EC305**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CO | Statement | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
| EC305.1 | Analyze various analog modulation and demodulation schemes. | 3 | 3 | 3 |  | 3 |  |  |  |  |  |  |  | 3 | 3 |  |
| EC305.2 | Understand the spectral characteristics of various analog modulation schemes using spectrum analyzer. | 3 | 3 | 3 |  | 3 |  |  |  |  |  |  |  | 3 | 3 |  |
| EC305.3 | Understand various pulse modulation and demodulationschemes. | 3 | 3 | 3 |  | 3 |  |  |  |  |  |  |  | 3 | 3 |  |
| EC305.4 | Analyze various digital modulation and demodulationtechniques. | 3 | 3 | 3 |  | 3 |  |  |  |  |  |  | 0 | 3 | 3 |  |
| EC305.5 | Analyze various analog and digital modulation and demodulation schemes usingMATLAB simulation | 3 | 3 | 3 |  | 3 |  |  |  |  |  |  |  | 3 | 3 |  |
| ANALOG&DIGITAL COMMUNICATIONS LAB  (EC305-ADCM) | | 3 | 3 | 3 |  | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 |

**Academic Year: 2019-20**

**Course Name: REAL TIME OPERATING SYSTEMS (RTOS)-VII SEM**

**Course Code: EC412**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CO | Statement | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
| EC412.1 | **Student will be able to gain Knowledge on differentiation between OS and RTOS** | **3** | **3** | **2** |  |  |  |  |  |  |  |  | **3** |  |  |  |
| EC412.2 | **Student will be able to get key idea on UNIX** | **3** | **3** |  |  | **2** |  |  |  |  |  |  | **3** |  | **3** |  |
| EC412.3 | **Student will be able to acquire Knowledge on applications of RTOS** | **3** | **3** |  |  |  |  |  |  |  |  | **2** | **3** |  | **3** | **2** |
| REAL TIME OPERATING SYSTEMS (RTOS) | | **3** | **3** | **2** |  | **2** |  |  |  |  |  | **2** | **3** |  | **3** | **2** |

**Academic Year: 2019-20**

**Course Name: Analog Electronic Circuits (AEC)**

**Course Code :EC207 (Scheme-17)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **Statement** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| CO1 | |  | | --- | | Understand the transistor at high frequencies. . | | 3 |  |  |  |  |  |  |  |  |  |  |  | 3 |  |  |
| CO2 | Analyze Negative feedback amplifiers circuits | 3 | 3 | 3 |  | 3 |  |  |  |  |  |  |  | 3 | 3 |  |
| CO3 | |  | | --- | | Design Oscillators circuits | | 3 | 3 | 3 | 2 | 3 |  |  |  |  |  |  |  | 3 | 3 |  |
| CO4 | |  | | --- | | Analyze large signal amplifier circuits | | 3 | 3 | 3 | 2 | 3 |  |  |  |  |  |  |  | 3 | 3 |  |
| CO5 | |  | | --- | | Analyze Tuned amplifier circuits | | 3 | 3 | 3 |  | 3 |  |  |  |  |  |  |  | 3 | 3 |  |
|  |  | **3** | **3** | **3** | **2** | **3** |  |  |  |  |  |  |  | **3** | **3** |  |

**Academic Year: 2019-20**

**Course Name: COMPUTER ORGANISATION AND ARCHITECTURE (COA)**

**Course Code :EC210 (Scheme-17)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **Statement** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| CO1 | Understand the concepts of Basic Computer organization and its design | 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CO2 | Analyze the concepts of CPU and its Addressing modes | 3 | 3 |  |  |  |  |  |  |  |  |  |  |  | 3 |  |
| CO3 | Apply the concept of Computer Arithmetic | 3 | 3 |  |  |  |  |  |  |  |  |  |  |  | 3 |  |
| CO4 | Understand the concepts of I/O and Memory organization | 3 | 3 | 3 | 2 |  |  |  |  |  |  |  |  |  | 3 |  |
| CO5 | Analyze the importance of Pipeline and Vector Processing | 3 | 3 | 3 | 2 |  |  |  |  |  |  |  |  |  | 3 |  |
|  |  | **3** | **3** | **3** | **2** |  |  |  |  |  |  |  |  |  | **3** |  |

**Academic Year: 2019-20**

**Course Name: Complex Variables & Special Functions (CVSF)**

**Course Code :BS203 (Scheme-17)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **Statement** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| CO1 | |  | | --- | | Understand Continuty and analyticity of various complex valued functions | | 3 | 3 |  | 3 |  |  |  |  |  |  |  |  | 3 | 3 |  |
| CO2 | |  | | --- | | Find the Taylor's and Laurent's series expansion of complex functions and evaluate definite real integrals using Residue theorem | | 3 | 3 |  | 3 |  |  |  |  |  |  |  |  | 3 | 3 |  |
| CO3 | |  | | --- | | Explain various properties of Bessel's and Legendre functions | | 3 | 3 |  | 3 |  |  |  |  |  |  |  |  | 3 | 3 |  |
| CO4 | |  | | --- | | Compute interpolating polynomial for the given data. | |  | | 3 | 3 |  | 3 |  |  |  |  |  |  |  |  | 3 | 3 |  |
| CO5 | |  | | --- | |  |   Solve ordinary differential equations using numerical techniques. | 3 | 3 |  | 3 |  |  |  |  |  |  |  |  | 3 | 3 |  |
|  |  | **3** | **3** |  | **3** |  |  |  |  |  |  |  |  | **3** | **3** |  |

**Academic Year: 2019-20**

**Course Name: Electromagnetic Waves (EMW)-IV SEM**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **Statement** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| **EC208.1** | **CO1:**Understand the principles of vector algebra, vector calculus and their physical interpretations in electromagnetic fields | **3** | **3** |  |  |  |  |  |  |  |  |  |  | **3** |  |  |
| **EC208.2** | **CO2:** Analyze Gauss’s law and its applications | **3** | **3** |  |  |  |  |  |  |  |  |  |  | **3** |  |  |
| **EC208.3** | **CO3:** Apply concepts and principles of electrostatic fields to solve complex problems | **3** | **3** | **3** |  |  |  |  |  |  |  |  |  | **3** |  |  |
| **EC208.4** | **CO4:** Analyze Biot-savart’s law and Ampere’s law to determine magnetic field intensity | **3** |  | **3** | **3** | **3** |  |  |  |  |  |  | **2** |  | **3** |  |
| **EC208.5** | **CO5:**Analyze Maxwell’s equations for time varying electromagnetic fields and understand the formation and characteristics of electromagnetic wave | **3** |  | **3** | **3** | **3** |  |  |  |  |  |  | **2** |  | **3** |  |
| **Electromagnetic Waves(EMW) (EC208)** | | **3** | **3** | **3** | **3** | **3** |  |  |  |  |  |  | **2** | **3** | **3** |  |

**Course Code: EC208**

**Academic Year: 2019-20**

**Course Name: Electrical Technology -IV SEM**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CO | Statement | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|  | Upon Successful Completion of this course, Students shall be able to |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CO1 | Understand the constructional aspects and analyze the operation, working and performance characteristics of various dc machines. | 3 | 3 |  |  |  |  |  |  |  |  |  |  |  | 2 |  |
| CO2 | Understand and analyze the performance characteristics of various transformers | 3 | 3 |  |  |  |  |  |  |  |  |  |  |  | 2 |  |
| CO3 | Understand the constructional aspects and analyze the operation, working and performance characteristics of different types of induction motors. | 3 | 3 | 2 |  | 2 |  |  |  |  |  |  |  |  |  |  |
| CO4 | Understand constructional aspects and analyze the working, operation and the performance characteristics of different synchronous machines. Select a proper electrical machine for various applications. | 3 | 3 | 2 |  | 2 |  |  |  |  |  |  |  |  |  |  |
|  | | **3** | **3** | **2** |  | **2** |  |  |  |  |  |  |  |  | **2** |  |

**Course Code: EC211**

**Academic Year: 2019-20**

**Course Name: DIGITAL SIGNAL PROCESSING (DSP)-VI SEM**

**Course Code: EC309**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **Statement** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| CO1 | Understand Digital Signal processing and analyze the Signals and Systems using Fourier Analyzing Tools. | 3 | 3 |  |  |  |  |  |  | 3 |  |  |  | 3 |  |  |
| CO2 | Understand the significance of DFT and its faster computation using FFT Algorithms | 3 | 3 |  |  |  |  |  |  | 3 |  |  |  | 3 |  |  |
| CO3 | Design IIR digital filters with the given specifications and realize the Filter designs. | 3 | 3 | 3 | 3 |  |  |  |  | 3 |  |  | 3 | 3 | 3 |  |
| CO4 | Design FIR digital filters with the given specifications and realize the Filter designs. | 3 | 3 | 3 | 3 |  |  |  |  |  |  |  | 3 |  | 3 |  |
| CO5 | |  | | --- | | Understand the need for Multi-rate Signal Processing and Adaptive Signal processing. | | 3 |  | 3 | 3 |  |  |  |  |  |  |  | 3 |  | 3 |  |
|  | **DIGITAL SIGNAL PROCESSING (DSP)** | **3** | **3** | **3** | **3** |  |  |  |  | **3** |  |  | **3** | **3** | **3** |  |

**Academic Year: 2019-20**

**Course Name:** INTERNET OF THINGS (IoT) **-VI SEM**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **Statement** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| **CO1** | **Understand the basic knowledge of Internet of things and its design** | **3** | **3** | **3** | **2** | **2** | **2** |  |  |  |  |  | **2** | **3** | **3** |  |
| **CO2** | **Understand the purpose of sensors and Actuators in IoT.** | **3** | **3** | **3** | **2** | **2** | **2** |  |  |  |  |  | **2** | **3** | **3** |  |
| **CO3** | **Analyze Various IoT Protocols** | **3** | **3** | **3** | **2** | **2** | **2** |  |  |  |  |  | **2** | **3** | **3** |  |
| **CO4** | **Design IoT Projects Using Arduino** | **3** | **3** | **3** | **2** | **2** | **2** |  |  |  |  |  | **2** | **3** | **3** |  |
| **CO5** | **Understand Raspberry-Pi Processor and Raspbian Operating Systems.** | **3** | **3** | **3** | **2** | **2** | **2** |  |  |  |  |  | **2** | **3** | **3** |  |
|  | | **3** | **3** | **3** | **2** | **2** | **2** |  |  |  |  |  | **2** | **3** | **3** |  |

**Academic Year: 2019-20**

**Course Name Embedded Systems and Programming (ESP) VI SEM**

**Course Code: EC308**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **Statement** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| **CO1** | **Understand the characteristics, attributes and applications of Embedded Systems** | 3 | 3 |  |  |  |  |  |  | 3 | 3 |  | 3 | 3 |  |  |
| **CO2** | **Understand the core structure and microcontroller ports for Embedded applications** | 3 | 3 |  |  |  |  |  |  | 3 | 3 |  | 3 | 3 |  |  |
| **CO3** | **Analyze the functions and data types of Embedded C in interfacing ports of microcontrollers** | 3 | 3 | 3 | 3 | 3 |  |  |  | 3 | 3 | 3 | 3 | 3 | 3 |  |
| **CO4** | **Utilize the architecture and programming model of MSP 430 for peripheral interface** | 3 | 3 | 3 | 3 | 3 |  |  |  | 3 | 3 | 3 | 3 | 3 | 3 |  |
| **CO5** | **Understand the architecture and programming model of ARM processors.** | 3 | 3 | 3 | 3 | 3 |  |  |  | 3 | 3 | 3 | 3 | 3 | 3 |  |
|  | | **3** | **3** | **3** | **3** | **3** |  |  |  | **3** | **3** | **3** | **3** | **3** | **3** |  |

**Academic Year: 2019-20**

**Course Name :** LINEAR CONTROL SYSTEMS (LCS) -**VI SEM**

**Course Code: EE311**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **Statement** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| **CO1** | **Understand the mathematical model and behavior of open loop and closed control system.** | 3 |  | 3 |  | 3 |  |  |  |  |  |  |  | 3 |  |  |
| **CO2** | **Apply block diagram reduction techniques and Mason‘s gain formula for finding the transfer function of a given control system.** |  | 3 | 3 | 3 |  |  |  |  |  |  |  |  | 3 |  |  |
| **CO3** | **Understand standard test inputs, controllers, transient and steady state response for a 2nd order control system for unit step input.** | 3 | 3 |  |  | 3 |  |  |  |  |  |  |  | 3 |  |  |
| **CO4** | **Apply analytical and graphical techniques to determine the stability of control system in both time and frequency domains.** | 3 | 3 |  | 3 | 3 |  |  |  |  |  |  |  | 3 |  |  |
| **CO5** | **Understand concept of compensation, state model, controllability & observability of a systems.** | **3** | 3 |  |  | 3 |  |  |  |  |  |  |  | 3 |  |  |
|  | | **3** | 3 | 3 | 3 | 3 |  |  |  |  |  |  |  | 3 |  |  |

**Academic Year: 2019-20**

**Course Name :** **Mini Project Work 1 (**ECMP1 **)** -**VI SEM**

**Course Code: ECMP1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CO | Statement | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
| ECMP1.1 | Solve real world problems through following standard design and development procedures | 3 | 3 | 3 |  | 3 |  |  |  |  |  |  |  | 3 |  | 3 |
| ECMP1.2 | Identify technical ideas, strategies and methodologies | 3 | 3 | 3 | 3 | 3 |  | 2 |  | 3 | 3 | 2 | 3 | 3 | 3 | 3 |
| ECMP1.3 | Utilize modern tools , algorithms ,techniques that contribute to obtain the solution of the project problem | 3 | 3 | 3 | 3 | 3 |  | 2 |  | 3 | 3 | 2 | 3 | 3 | 3 | 3 |
| ECMP1.4 | Develop prototype ,perform tests to validate the prototype and analyse the cost and effectiveness | 3 | 3 | 3 | 3 |  |  |  |  | 3 | 3 |  | 3 | 3 | 3 | 3 |
| ECMP1.5 | Explain the acquired knowledge through preparation of report and oral presentations | 3 | 3 |  | 3 |  |  |  |  |  |  |  | 3 |  | 3 |  |
|  |  | **3** | **3** | **3** | **3** | **3** |  | **2** |  | **3** | **3** | **2** | **3** | **3** | **3** | **3** |

**Academic Year: 2019-20**

**Course Name :** **WIRELESS COMMUNICATION-WCN)-VIII SEM**

**Course Code: EC422**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CO | Statement | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
| EC422.1 | Analyze Mobile Radio propagation models | 3 | 3 | 3 | 3 | 2 |  |  |  |  |  |  |  | 3 |  | 3 |
| EC422.2 | Understand parameters of wireless multipath channels. | 3 | 3 |  |  |  |  |  |  |  |  |  |  | 3 |  |  |
| EC422.3 | Analyze equalization and diversity concepts in Wireless Communications. | 3 | 3 |  |  |  |  |  |  |  |  |  |  | 3 |  |  |
| EC422.4 | Understand major concepts involved in WLANs, WANs and switching techniques. | 3 | 3 |  |  |  |  | 1 |  |  |  |  | 1 | 3 | 1 |  |
| EC422.5 | Understand the architecture and specifications of Mobile IP, WAP, IEEE 802.11 . | 3 | 3 | 3 | 3 | 2 |  |  |  |  |  |  |  | 3 |  | 3 |
| WIRELESS COMMUNICATION  (EC422-WCN) | | 3 | 3 | 3 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 3 |