

# Department of Electronics & Communication Engg.

Course Outcome Statement			
<b>Course:</b>	<b>Code: 18MAT31</b> <b>Course Name: TRANSFORM CALCULUS, FOURIER SERIES AND NUMERICAL TECHNIQUES</b>	<b>Faculty: Prof. Anusha E, Prof. Uma Devi R &amp; Prof. Bhavya Shivraj</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 301.1	Use Laplace transform and inverse Laplace transform in solving differential/ integral equation arising in network analysis, control systems and other fields of engineering.		
Course 301.2	Demonstrate Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory.		
Course 301.3	Make use of Fourier transform and Z-transform to illustrate discrete/continuous function arising in wave and heat propagation, signals and systems.		
Course 301.4	Solve first and second order ordinary differential equations arising in engineering problems using single step and multistep numerical methods.		
Course 301.5	Determine the externals of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.		
Course Outcome Statement			
<b>Course:</b>	<b>Code: 18EC32</b> <b>Course Name: Network Theory</b>	<b>Faculty: Prof. Bhaskar M. K. Prof. Somesh B. S. Prof. Priva K.</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 302.1	Determine currents and voltages using source transformation/ source shifting/ mesh/ nodal analysis and reduce given network using star-delta transformation/source transformation/ source shifting.		
Course 302.2	Solve network problems by applying Superposition/ Reciprocity/ Thevenin's/ Norton's/ Maximum Power Transfer/ Millman's Network Theorems and electrical laws to reduce circuit complexities and to arrive at feasible solutions.		
Course 302.3			
Course 302.4			
Course 302.5	Solve the given network using specified two port network parameters like Z or Y or T or h and understand the concept of resonance		
Course Outcome Statement			
<b>Course:</b>	<b>Code:18EC33</b> <b>Course Name: Electron devices</b>	<b>Faculty:K.Priya, C.Cynthia</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 303.1	Understand the principles of semiconductor Physics		
Course 303.2	Understand the principles and characteristics of different types of semiconductor devices		
Course 303.3	Understand the fabrication process of semiconductor devices		
Course 303.4	Utilize the mathematical models of semiconductor junctions and MOS transistors for circuits and systems.		
Course Outcome Statement			
<b>Course:</b>	<b>Code:18EC34</b> <b>Course Name: Digital System design</b>	<b>Faculty: Sampada H K / Rakhi S</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 304.1	To design, analyse and implement combinational		
Course 304.2	To design, analyse and implement sequential logic using Melay& Moore machines and state diagrams		
Course 304.3	Design applications of Combinational & Sequential Circuits		
Course Outcome Statement			
<b>Course:</b>	<b>Code:18EC35</b>	<b>Faculty:Poornima.B,Pushpa.Y, Sameera.P</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 305.1	Explain the basic organization of a computer system		
Course 305.2	Demonstrate different ways of communicating with I/O devices		

Course 305.3	Explain different ways of accessing an input / output device including interrupts.		
Course 305.4	Illustrate the organization of different types of semiconductor and other secondary storage memories		
Course 305.5	Illustrate organization of simple pipelined processor and other computing systems		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:18EC36</b> <b>Course Name: Power Electronics and Instrumentation</b>	<b>Faculty: Shalini Vashishtha, Kavitha S</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 306.1	Design and analyze of Thyristor circuits with different triggering conditions.		
Course 306.2	Construct and analyze the power electronics applications controlled rectifiers, converters , inverters and switch mode power supply		
Course 306.3	Define and explain errors in measurement , its types and Transducers		
Course 306.4	Explain the principle of operation of analog multi range ammeter, voltmeter and Digital instruments digital voltmeter, multi meter, Frequency meter		
Course 306.5	Describe the structure, operation and components of Programmable logic controller		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 18ECL37</b> <b>Course Name: Electronic Devices Lab</b>	<b>Faculty: Profs.S.Kavitha,K.Priya,Cynthia.C</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 307.1	Explain the characteristics of various electronics devices and measurement parameters		
Course 307.2	Design and test simple electronic circuits		
Course 307.3	Implement and simulate various electronic circuits and devices using EDA tool		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:18ECL38 / DSD Lab</b>	<b>Faculty: Prof. Sampada H K / Prof. Rakhi S / Prof. Sameera</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 308.1	Demonstrate the truth table of various expressions and combinational circuits using logicgates.		
Course 308.2	Design various combinational circuits such as adders, subtractors, comparators, multiplexers and demultiplexers.		
Course 308.3	Construct flips-flops, counters and shift registers.		
Course 308.4	Simulate Serial adder and Binary Multiplier.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 18MAT41</b> <b>Course Name: COMPLEX ANALYSIS, PROBABILITY AND STATISTICAL METHODS</b>	<b>Faculty: Prof. Uma Devi R, Prof. Anusha E &amp; Prof. Nagendra Naik</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 401.1	Use the concepts of analytic function and complex potentials to solve the problems arising in electromagnetic field theory.		
Course 401.2	Utilize conformal transformation and complex integral arising in aerofoil theory, fluid flow visualization and image processing.		
Course 401.3	Apply discrete and continuous probability distributions in analyzing the probability models arising in engineering field.		
Course 401.4	Make use of the correlation and regression analysis to fit a suitable mathematical model for the statistical data		
Course 401.5	Construct joint probability distributions and demonstrate the validity of testing the hypothesis		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:18EC42</b>	<b>Faculty:K.PRIYA, C.CYNTHIA</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 402.1	Understand the characteristics of BJTs and FETs.		
Course 402.2	Design and analyze BJT and FET amplifier circuits		
Course 402.3	Design sinusoidal and non-sinusoidal oscillators		

Course 402.4	Understand the functioning of linear ICs		
Course 402.5	Design of Linear IC based circuits		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:18EC43</b>	<b>Faculty:Poornima.B ,Jayanth U,Ramya C.N</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 403.1	Develop the mathematical model of mechanical and electrical systems.		
Course 403.2	Develop transfer function for a given control system using block diagram reduction techniques and signal flow graph method.		
Course 403.3	Determine the time domain specifications for first and second order systems.		
Course 403.4	Determine the stability of a system in the time domain using Routh-Hurwitz criterion and Root-locus technique.		
Course 403.5	Determine the stability of a system in the frequency domain using Nyquist and bode plots.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:18EC44</b> <b>Course Name: Engineering Statistics and Linear Algebra</b>	<b>Faculty:Sundari T, Ajay Shiva, Shalab Kumar Misra</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 404.1	Identify and associate Random Variables and Random Processes in Communication events.		
Course 404.2	Analyze and model the Random events in typical communication events to extract quantitative statistical parameters		
Course 404.3	Analyze and model typical signal sets in terms of a basis function set of Amplitude, phase and frequency		
Course 404.4	Demonstrate the concepts of Vector spaces as applied to communication		
Course 404.5	Demonstrate by way of simulation or emulation the ease of analysis employing basis functions, statistical representation and Eigenvalues		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 18EC45</b> <b>Course Name: SIGNALS AND SYSTEMS</b>	<b>Faculty: Prof. Bhaskar M. K.</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 405.1	Analyze the different types of signals and systems and Determine the linearity, causality, time-invariance and stability properties of continuous and discrete		
Course 405.2	Analyze the signals in time domain using convolution sum and Integral.		
Course 405.3	Analyze Linear Time Invariant (LTI) systems in time and transform domains.		
Course 405.4	Analyze Fourier Transform Properties and apply it to aperiodic signals		
Course 405.5	Analyze Z Transform Properties and apply it to LTI Systems		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 18EC46</b> <b>Course Name: Microcontroller</b>	<b>Faculty: Profs. S.KAVITHA,Prof.SOMESH.B.S</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 406.1	Explain the difference between Microprocessors & Microcontrollers, Architecture of 8051.		
Course 406.2	Write 8051 Assembly level programs using 8051 instruction set.		
Course 406.3	Write an assembly language programs for the given application using interrupt concept, Hardware Timers and counters and Serial port.		
Course 406.4	Interface external devices like simple switches, simple LEDs, ADC 0804, LCD and Stepper Motor to 8051 using 8051 I/O ports and control according to the requirement.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 18ECL47 ,Microcontroller Lab</b>	<b>Faculty: Prof.S.Kavitha, Vasudeva G</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 407.1	Write Assembly language programs in 8051 for solving simple problems that manipulate input data using different instructions and programming techniques of 8051.		
Course 407.2	Interface different input and output devices to 8051 and control them using Assembly language programs.		
Course 407.3	Interface the serial devices to 8051 and do the serial transfer using C programming.		

Course Outcome Statement			
Course:	Code: 18ECL48, AC Lab	Faculty: Prof. Priya / Prof. Cyntia	Academic Year: 2019 – 20
Statement			
Course 408.1	Design analog circuits using BJT/FETs and evaluate their performance characteristics.		
Course 408.2	Design analog circuits using OPAMPs for different applications		
Course 408.3	Simulate and analyze analog circuits that uses ICs for different electronic applications.		
Course Outcome Statement			
Course:	Code: 15ES51, Management and Entrepreneurship	Faculty: Prof. Devaki S	Academic Year: 2019 – 20
Statement			
Course 501.1	Understand the fundamental concepts of Management and Entrepreneurship		
Course 501.2	Select a best Entrepreneurship model for the required domain of establishment		
Course 501.3	Describe the functions of Managers, Entrepreneurs and their social responsibilities		
Course 501.4	Compare various types of Entrepreneurs		
Course 501.5	Analyze the Institutional support by various state and central government agencies		
Course Outcome Statement			
Course:	Code: 17EC52 & Digital Signal processing	Faculty: Ramesh N & Shalabh km	Academic Year: 2019 – 20
Statement			
Course 502.1	Comprehend Various transforms to mathematically analyze discrete-time signal for frequency domain interpretation		
Course 502.2	Applying FFT algorithms to evaluate DFT and linear filtering approach		
Course 502.3	Design FIR & IIR type digital filters		
Course 502.4	Analyzing sample rate conversion techniques		
Course Outcome Statement			
Course:	Code: 17EC53 Course Name : VHDL	Faculty: Prof. Vasudeva G / Dr. Ipsita B M	Academic Year: 2019 – 20
Statement			
Course 503.1	Demonstrate the concepts of digital system design with a focus on hardware description languages.		
Course 503.2	Interpret how a Hardware Description Language (HDL) is used to describe and implement hardware		
Course 503.3	Experiment with different types of combinatorial and sequential hardware systems and the use of finite state machines in the design of sequential systems		
Course 503.4	Examine the data-path components with a test bench written in Verilog		
Course Outcome Statement			
Course:	Code:17EC54	Faculty: Prof.Somesh, Prof.Shobha.P C, Dr.Arun Balodi	Academic Year: 2019 – 20
Statement			
Course 504.1	Explain concept of Dependent & Independent Source, measure of information, Entropy, Rate of Information and Order of a source		
Course 504.2	Represent the information using Shannon Encoding, Shannon Fano, Prefix and Huffman Encoding Algorithms		
Course 504.3	Model the continuous and discrete communication channels using input, output and joint probabilities		
Course 504.4	Design the encoding and decoding circuits for Linear Block codes, cyclic codes, convolution codes, BCH and Golay codes.		
Course Outcome Statement			
Course:	Code: 17EC551, Nano Electronics	Faculty: Prof. Priya	Academic Year: 2019 – 20
Statement			
Course 505.1	Know the principles behind Nanoscience engineering and Nanoelectronics.		

Course 505.2	Know the effect of particles size on mechanical, thermal, optical and electrical properties of nanomaterials.		
Course 505.3	Know the properties of carbon and carbon nanotubes and its applications.		
Course 505.4	Know the properties used for sensing and the use of smart dust sensors.		
Course 505.5	Apply the knowledge to prepare and characterize nanomaterials.		
Course 505.6	Analyse the process flow required to fabricate state-of-the-art transistor technology.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 17EC 553, Operating Systems</b>	<b>Faculty: Prof. Vinay</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 505.1	Understand the services provided by an operating system.		
Course 505.2	Understand how processes are synchronized and scheduled.		
Course 505.3	Understand different approaches of memory management and virtual memory management.		
Course 505.4	Understand the structure and organization of the file system		
Course 505.5	Understand interprocess communication and deadlock situations.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 17EC555, MSP430</b>	<b>Faculty: Prof. Bhaskar M K / Prof. Rajagopalan Nadathur</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 505.1	Understand the architectural features and instruction set of 16 bit microcontroller MSP430.		
Course 505.2	Develop programs using the various instructions of MSP430 for different applications.		
Course 505.3	Understand the functions of the various peripherals which are interfaced with MSP430 microcontroller.		
Course 505.4	Describe the power saving modes in MSP430.		
Course 505.5	Explain the low power applications using MSP430 microcontroller.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 17EC561, Automotive Electronics</b>	<b>Faculty: Prof. Rajagopalan Nadathur</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 506.1	Acquire an overview of automotive components, subsystems, and basics of of Electronic Engine Control in today's automotive industry.		
Course 506.2	Use available automotive sensors and actuators while interfacing with microcontrollers / microprocessors during automotive system design.		
Course 506.3	Understand the networking of various modules in automotive systems, communication protocols and diagnostics of the sub systems.		
Course 506.4	Design and implement the electronics that attribute the reliability, safety, and smartness to the automobiles, providing add-on comforts and get fair idea on future Automotive Electronic Systems.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 17EC562 , OOPs using C++</b>	<b>Faculty: CSE dept.</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 506.1	Define Encapsulation, Inheritance and Polymorphism.		
Course 506.2	Solve the problem with object oriented approach.		
Course 506.3	Analyze the problem statement and build object oriented system model.		
Course 506.4	Describe the characters and behavior of the objects that comprise a system.		
Course 506.5	Explain function overloading, operator overloading and virtual functions.		
Course 506.6	Discuss the advantages of object oriented programming over procedure oriented programming.		
<b>Course Outcome Statement:</b>			
<b>Course:</b>	<b>Code:17EC563 , 8051 Microcontroller</b>	<b>Faculty: Prof. Ajay Shiva</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		

Course 506.1	Explain the difference between Microprocessors & Microcontrollers, Architecture of 8051.		
Course 506.2	Write 8051 Assembly level programs using 8051 instruction set.		
Course 506.3	Write an assembly language programs for the given application using interrupt concept, Hardware Timers and counters and Serial port.		
Course 506.4	Interface external devices like simple switches, simple LEDs, ADC o804, LCD and Stepper Motor to 8051 using 8051 I/O ports and control according to the requirement.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 17EC57, DSP Lab</b>	<b>Faculty: Prof. Ramesh T.</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 507.1	Simulate discrete time signals and verification of sampling theorem		
Course 507.2	Compute the DFT for a discrete signal and verification of its properties using MAT LAB		
Course 507.3	Find solution to the difference equations and computation of convolution and correlation along with the verification of properties		
Course 507.4	Compute and display the filtering operations and compare with the theoretical values		
Course 507.5	Implement the DSP computations on DSP hardware and verify the result		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 17EC58, HDL Lab</b>	<b>Faculty: Prof. Vasudeva G</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 508.1	Write the Verilog/VHDL programs to simulate Combinational circuits in Dataflow, Behavioral and Gate level Abstractions.		
Course 508.2	Describe sequential circuits like flip flops and counters in Behavioral description and obtain simulation waveforms.		
Course 508.3	Synthesize Combinational and Sequential circuits on programmable ICs and test the hardware.		
Course 508.4	Interface the hardware to the programmable chips and obtain the required output.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:17EC61</b>	<b>Faculty: Dr.Ambar, Prof.Shobha.P C,Prof.Ramesh.N</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 601.1	Understanding of HILBERT Transform & representation of bandpass signal.		
Course 601.2	Representation of a signal in an AWGN channel		
Course 601.3	Performance Evaluation of different digital modulation techniques.		
Course 601.4	Design a signal for transmission over bandlimited channel to achieve zero ISI		
Course 601.5	Design a spread spectrum signal for digital communication		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 17EC62, Arm &amp; Embedded Systems</b>	<b>Faculty:Shalini Vashishtha, Jayanth U</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 602.1	Identify the difference between ARM and Thumb2 instructions and Know the architecture of ARM cortex M3 microcontroller		
Course 602.2	Write the assembly level program for Cortex M3 by using different programming concepts and its instruction set.		
Course 602.3	Identify the need for an embedded system and various components. Write embedded C programs to interface different hardware to control them in a IDE environment		
Course 602.4	Implement the various methodologies appropriately to design embedded system without the coupling and cohesion problems.		
Course 602.5	Identify an appropriate RTOS for an embedded system.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:17EC63, VLSI Design</b>	<b>Faculty:Rakhi.S/Spoorthi S.P</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 603.1	Demonstrate understanding of MOS transistor theory, CMOS fabrication flow		
Course 603.2	Draw the basic gates using the stick and layout diagrams with the knowledge of physical design aspects.		
Course 603.3	Scaling models, Scaling factors for device parameters and General consideration for Subsystem design processes.		

Course 603.4	Analyze CMOS subsystems and Demonstrate knowledge of FPGA based system design		
Course 603.5	Interpret Memory elements along with timing considerations and testing & testability issues in VLSI Design		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:17EC64</b>	<b>Faculty: Pushpa.Y/Sampada.H.K/Cynthia.C</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 604.1	Describe the layering architecture of computer networks and distinguish between the OSI reference model and TCP/IP protocol suite.		
Course 604.2	Identify the protocols and services of Data link layer.		
Course 604.3	Distinguish the basic network configurations and standards associated with each network.		
Course 604.4	Construct a network model and determine the routing of packets using different routing algorithms.		
Course 604.5	Identify the protocols and functions associated with the transport layer services.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:17EC654, DSS</b>	<b>Faculty:Prof. Annappa C./ Spoorthi S.P./ Ajay Shiva</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 6054.1	Explain the concepts of telecommunication networks.		
Course 6054.2	Explain the evolution of switching systems.		
Course 6054.3	Understand, Analyze and solve the mathematical telecommunication traffic. Understand, Analyze and solve the GOS of link system in networks.		
Course 6054.4	Understand, Analyze and solve GOS of time division switching networks. Explain the software architecture, call models.		
Course 6054.5	Explain Maintenance and generic model of digital switching systems.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:17EC663</b>	<b>Faculty:Prof. Amulya D Raj</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 6063.1	Ability to model and design combinational and sequential logic and numeric basics which helps us to design digital system		
Course 6063.2	Design the memory interface and model the same in Verilog.	Ability to identify the appropriate memory type and interface circuit for the given digital system	
Course 6063.3	Engineering Knowledge is required to fabricate the integrated circuits for digital systems.		
Course 6063.4	Knowledge of I/O devices, I/O controllers, Transmission buses and their protocols required to build an embedded systems		
Course 6063.5	Concept of design methodology , functional verification , physical design , optimization technique for design,time,power. Explain about Built in self test and fault modulation and simulation		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:Code:17ECL67, Embedded Controller lab</b>	<b>Faculty: Shalini V , Jayanth U, Dr Prasuna V</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 607.1	Understand the instruction set of 32 bit microcontroller ARM Cortex M3, and the software tool required for programming in Assembly and C language.		
Course 607.2	Develop assembly language programs using ARM Cortex M3 for different applications.		
Course 607.3	Interface external devices and I/O with ARM Cortex M3.		
Course 607.4	Develop C language programs and library functions for embedded system applications.		
<b>Course Outcome Statement</b>			
<b>Course :</b>	<b>Code:Code:17ECL68, CCN Lab</b>	<b>Faculty:Pushpa.Y/Swathi/Ramesh.N</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 608.1	Use the network simulator for learning and practice of networking algorithms.		
Course 608.2	Illustrate the operations of network protocols and algorithms using C programming.		
Course 608.3	Simulate the network with different configurations to measure the performance parameters.		
Course 608.4	Implement the data link and routing protocols using C programming.		

Course Outcome Statement			
<b>Course:</b>	<b>Code:15EC71, Digital Image Processing</b>	<b>Faculty:Dr.Ambar,Prof.Pushpa,Prof.Shobha.</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 701.1	To derive and apply the steady state transmission line equations to the design of distributed circuit		
Course 701.2	To analyse and design microwave circuits using microwave network parameters and Smith chart.		
Course 701.3	To demonstrate the working of various active & passive microwave devices & compute performance parameters		
Course 701.4	To analyse and compute antenna parameters for different applications		
Course Outcome Statement			
<b>Course:</b>	<b>Code:15EC72</b>	<b>Faculty:Sundari T, Jayanth U</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 702.1	Understand the fundamentals of Image Processing and sources of images.		
Course 702.2	Understand the Concept image enhancement in spatial and frequency domains		
Course 702.3	To basic properties noise and techniques of Image restoration with Spatial and frequency domain filtering		
Course 702.4	Understand the Concept of color image formation and processing		
Course 702.5	To understand the basic concepts of morphological image processing		
Course 702.6	To understand the basic concepts of image analysis with segmentation and representation of images		
Course Outcome Statement			
<b>Course:</b>	<b>Code:15EC73, Power electronics</b>	<b>Faculty: Prof. Vinay, Prof. Aannappa. C</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 703.1	1.The student will have the knowledge of fundamentals of power electronics components circuits analysis techniques and design skills		
Course 703.2	2.Will know the behavior of semiconductor devices operated as power switches.		
Course 703.3	3.Acquire basic understanding of various power converter modules used to build power electronics system.		
Course 703.4	4.Acquire the ability to select and design suitable power converter modules/system in order to meet requirements of industrial applications.		
Course Outcome Statement			
<b>Course:</b>	<b>Code: 15EC743, Real Time Systems</b>	<b>Faculty: Ramesh N, Swathi Somayaji</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 704.1	Comprehend the real time systems with examples and its types. Illustrate the range of operation in computer controlled system.		
Course 704.2	Describe the standard interfacing, communication methods,		
Course 704.3	Describe the features for safe reliable software, aspects of real time operating systems		
Course 704.4	Analyze real-time systems designs and approaches with different standard methodologies.		
Course Outcome Statement			
<b>Course:</b>	<b>Code: 15ECP752</b> <b>Course Name: IoT &amp; Wireless Sensor networks</b>	<b>Faculty: Dr. Prasuna V P</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 705.1	Describe the OSI Model for the IoT/M2M Systems.		
Course 705.2	Understand the architecture and design principles for IoT		
Course 705.3	Learn the programming for IoT Applications		
Course 705.4	Identify the communication protocols which best suits the WSNs.		
Course Outcome Statement			
<b>Course:</b>	<b>Code: 15EC752 &amp; IoT &amp; Wireless Sensor Networks</b>	<b>Faculty: Dr. Prasuna, Prof. Sufian Aslam</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		



Course 706.1	Describe the OSI Model for the IoT/M2M Systems		
Course 706.2	Understand the architecture and design principles for IoT		
Course 706.3	Learn the programming for IoT Applications		
Course 706.4	Identify the communication protocols which best suits the WSNs		
Course 706.5	Able to understand various design parameters for developing WSN Nodes		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:15ECL77</b>	<b>Faculty:Ambar.B/ Pushpa.Y/Shobha.P.C</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 707.1	Design and demonstrate the digital modulation techniques.		
Course 707.2	Demonstrate and measure the wave propagation in microstrip antennas		
Course 707.3	Measure characteristic parameters of microstrip devices		
Course 707.4	Model an optical communication system and study its characteristics		
Course 707.5	Simulate the digital communication concepts & compute various parameters along with its plots.		
<b>Course Outcome Statement</b>			
<b>Course</b>	<b>Code:17ECL78</b> <b>Course Name: :VLSI LAB</b>	<b>Faculty: Shalini V , Rakhi S, Prasuna V</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 708.1	Write test bench to simulate various digital circuits.		
Course 708.2	Interpret concepts of DC Analysis, AC Analysis and Transient Analysis in analog circuits		
Course 708.3	Design and simulate basic CMOS circuits like inverter, common source amplifier and differential amplifiers.		
Course 708.4	Use basic amplifiers and further design higher level circuits like operational amplifier and analog/digital converters to meet desired parameters.		
Course 708.5	Use transistors to design gates and further using gates realize shift		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:15EC81</b>	<b>Faculty:Dr. Prasuna, Swathi Somayaji</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 801.1	Understand the system Architecture and Functional standards		
Course 801.2	Analyze the role of Multicarrier modulation, OFDMA and SC-FDMA and Signal enhancement in Multiple Antenna Transmission and Reception		
Course 801.3	Demonstrate the Channel structure of LTE and Analyze the Downlink Transport Channels.		
Course 801.4	Examine the uplink shared channels and Physical Layer procedures for Scheduling and Resource allocation		
Course 801.5	Analyze data flow & radio resource management and mobility management in LTE		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:15EC82</b>	<b>Faculty:Pushpa.Y/Swathi.S/ Amulya.D</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		
Course 802.1	Classify Optical Fibres based on different modes of signal propagation with the help of Ray Theory Transmission.		
Course 802.2	Describe Transmission characteristics and losses of optical fibres.		
Course 802.3	Understand the structure working and concepts related to optical sources, photo detectors & receivers		
Course 802.4	Describe WDM concepts, operation principles, components and WDM standards & optical amplifiers		
Course 802.5	Describe optical networks & its related concepts		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 15EC832</b> <b>Course Name: SPEECH PROCESSING</b>	<b>Faculty: Ramesh N</b>	<b>Academic Year: 2019 – 20</b>
	<b>Statement</b>		

Course 803.1	Understanding the concept of Digital models for speech signals		
Course 803.2	Applying the time domain methods for speech processing		
Course 803.3	Synthesis of speech signals in frequency domain techniques		
Course 803.4	Explaining the Cepstrum and Homomorphic techniques for speech analysis, recognition and synthesis		
Course 803.5	Interpret the Linear Predictive Analysis of Speech Signals		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 15EC834 &amp; Machine Learning</b>	<b>Faculty: Prof. Sufian Aslam</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 804.1	Understand the core concepts of Machine Learning		
Course 804.2	Appreciate the underlying mathematical relationships within and across Machine Learning Algorithms		
Course 804.3	Explain paradigms of supervised and un-supervised learning		
Course 804.4	Recognize a real world problem and apply the learned techniques of Machine Learning to solve the problem		
Course 804.5	Get introduced to some of the programming level concepts to deploy existing machine learning algorithms for specific problems		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:15EC835 Course Name: Network &amp; Cyber Security</b>	<b>Faculty: Prof. Sampada H K</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 805.1	Explain network security protocols		
Course 805.2	Understand the basic concepts of cyber security		
Course 805.3	Discuss the cyber security problems		
Course 805.4	Explain Enterprise Security Framework		
Course 805.5	Apply concept of cyber security framework in computer system administration		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 15EC84</b>	<b>Faculty: Prof. Annappa.C / Prof. Ajay Shiva</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 806.1	Assist the student's development of employer-valued skills such as teamwork, communications and attention to detail.		
Course 806.2	Expose the student to the environment and expectations of performance on the part of accountants in professional accounting practice, private/public companies or government entities.		
Course 806.3	Enhance and/or expand the student's knowledge of a particular area(s) of accounting		
Course 806.4	Expose the student to professional role models or mentors who will provide the student with support in the early stages of the internship and provide an example of the behaviors expected in the intern's workplace.		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code: 15ECP85 / Project</b>	<b>Faculty: Prof. Sampada H K / Prof. Sameera P</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			
Course 807.1	Apply relevant knowledge and skills, which are acquired within the technical area to formulate a meaningful problem.		
Course 807.2	Develop the skills to understand the contributions and limitations of the existing literature		
Course 807.3	Implement, and critically analyze the scientific results obtained by hardware/software implementation of the work		
Course 807.4	Develop the skills to work as a team and coordinate to solve the scientific problems		
Course 807.5	Develop the presentation skills to explain the technical contents with proper time management		
Course 807.6	Document the work with requirements on structure, format, and language usage		
<b>Course Outcome Statement</b>			
<b>Course:</b>	<b>Code:15ECS86</b>	<b>Faculty:Dr. Prasuna. V , Cynitha. C</b>	<b>Academic Year: 2019 – 20</b>
<b>Statement</b>			

Course 808.1	Select a specific topic and conduct a literatures to review the technology developments in that area.
Course 808.2	Analyze the knowledge by specifying the contributions to that field.
Course 808.3	Analyze the technical area and compute for different applications and research
Course 808.4	Develop skills to present information with time management and connect with audience
Course 808.5	Organize and prepare effective technical reports

100 series 101...etc First semester subjects including Practicals, Projects etc.,  
200series 201...etc Second semester subjects including Practicals, Projects etc.,  
300 series 301...etc Third semester subjects including Practicals, Projects etc.,  
400 series 401...etc Fourth semester subjects including Practicals, Projects etc.,  
500 series 501...etc Fifth semester subjects including Practicals, Projects etc.,  
600 series 601...etc Sixth semester subjects including Practicals, Projects etc.,  
700 series 701...etc Seventh semester subjects including Practicals, Projects etc.,  
800 series 801...etc Eighth semester subjects including Practicals, Projects etc.,