NEW PRINCE SHRI BHAVANI
COLLEGE OF ENGINEERING AND TECHNOLOGY
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Tambaram - Velachery Main Road, Santhosapuram, Chennai-600 073.

REGULATION 2021

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

SEMESTER I

Course Code :	HS3151	Course Year :	2021-2022	Semester:	I
Course Name :	**C101-Professional English I**				
Course Index	Course Outcomes				
C101.1	Write Essays, E-Mails, and Letters in efficient way.				
C101.2	Analyze the Events, Reports, Articles and Blogs through Comprehension.				
C101.3	Analyze the Process and Products through Technical Texts.				
C101.4	Write Recommendations and Transcoding from Non - Verbal to Verbal.				
C101.5	Analyze the Vocabulary of various forms..				

Course Code :	MA3151	Course Year :	2021-2022	Semester:	I
Course Name :	**C102-Matrices and Calculus**				
Course Index	Course Outcomes				
C102.1	Apply Cayley- Hamilton theorem and orthogonal transformation for different process of matrices.				
C102.2	Analyze the types of functions and differentiation rules for real life engineering problems.				
C102.3	Apply the concepts of partial derivatives and total derivatives in Taylor's series, Jacobians and maxima and minima of functions.				
C102.4	Apply the rule of integration in various functions.				
C102.5	Evaluate the double and triple integrals for finding area and volume of different plane surfaces.				

Course Code :	PH3151	Course Year :	2021-2022	Semester:	I
Course Name :	**C103-Engineering Physics**				
Course Index	Course Outcomes				
C103.1	Explain the basic concepts of mechanics.				
C103.2	Describe wave equations of electromagnetic waves with its applications.				
C103.3	Explain the concept of oscillations, LASERs and Fibre optics.				
C103.4	Comprehend the importance of quantum mechanics.				
C103.5	Apply quantum mechanical principle towards the formation of energy bands.				

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Course Code :	CY3151	Course Year :	2021-2022	Semester:	I
Course Name :	C104-Engineering Chemistry				
Course Index	Course Outcomes				
C104.1	Summarize the methods to produce soft water for industrial use and potable water at cheaper cost.				
C104.2	Apply basic concepts of nanoscience and nanotechnology in designing the synthesis of nanomaterials for engineering and technology applications,				
C104.3	Apply the knowledge of phase rule and composites for material selection requirements				
C104.4	Describe the various types of fuels and the manufacture of solid, liquid and gaseous fuel to meet environmental sustainability.				
C104.5	Explain the principles and generation of energy in nuclear reactor, wind energy and solar energy and batteries.				

Course Code :	GE3151	Course Year :	2021-2022	Semester:	I
Course Name :	C105-Problem Solving and Python Programming				
Course Index	Course Outcomes				
C105.1	Solve simple computational problems using Notations.				
C105.2	Write Python Programs using statements and Expressions.				
C105.3	Apply Control flow and Functional concepts in a user defined problems.				
C105.4	Apply Python Data Structures Compound Data. List, Tuples and Dictionaries for Compound Data.				
C105.5	Describe File handling and Exceptional Handling in Python for Solving Problems.				

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Course Code :	GE3152	Course Year :	2021-2022	Semester:	I
Course Name :	**C106-Heritage of Tamils**				
Course Index	Course Outcomes				
C106.1	Summarize about languages, literatures and scripts.				
C106.2	Explain middle stone, modern sculptures, panchalogaidols and musical instruments.				
C106.3	Explain about the folk gods, arts and heroic sports.				
C106.4	Summarize the political theories of tamils.				
C106.5	Summarize Indian national movement contribution of Tamils to Indian culture.				

Course Code :	GE3171	Course Year :	2021-2022	Semester:	I
Course Name :	**C107-Problem Solving and Python Programming Laboratory**				
Course Index	Course Outcomes				
C107.1	Write python programs for simple computational problems.				
C107.2	Write python programs with conditionals and loops.				
C107.3	Write a python programs step-wise by defining function and calling them.				
C107.4	Write a python programs using lists, tuples, and dictionaries for representing compound data.				
C107.5	Write a python program for read and write data from to files in python.				

Course Code :	BS3171	Course Year :	2021-2022	Semester:	I
Course Name :	**C108-Physics and Chemistry Laboratory**				
Course Index	Course Outcomes				
C108.1	Calculate the Young's modulus by non-uniform bending, simple harmonic oscillators by Torsion Pendulum.				
C108.2	Calculate the thickness of a thin wire by air wedge and velocity of sound, compressibilityof liquid using ultra sonic interferometer.				
C108.3	Calculate the wavelength, acceptance angle and numerical aperture using laser.				
C108.4	Estimate the amount of Hardness, chloride,alkalinity in water samples.				
C108.5	Estimate the amount of acid, iron content present in a given solution by using pH, conductivity and potentiometric titration.				

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Course Code :	GE3172	Course Year :	2021-2022	Semester:	I
Course Name :	**C109-English Laboratory**				
Course Index	Course Outcomes				
C109.1	Analyze general information as well as complex academic situations.				
C109.2	Describe their personal experiences,events,documentaries and interviews in both temporary and permanent situations.				
C109.3	Describe products and processes and explain their purposes clearly and accurately.				
C109.4	Apply speaking skills in formal and informal communicative contexts.				
C109.5	Analyze or use their opinions effectively in both formal and informal discussion.				

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

SEMESTER II

Course Code :	HS3251	Course Year :	2021-2022	Semester:	II
Course Name :	C110-Professional English II				
Course Index	Course Outcomes				
C110.1	Write essays and emails in different forms effectively.				
C110.2	Write letters and responses to complaints for the causal relations.				
C110.3	Analyze the news reports, excerpts and case studies.				
C110.4	Write the reports of events and transcoding.				
C110.5	Write job application with resume in the context of job search.				

Course Code :	MA3251	Course Year :	2021-2022	Semester:	II
Course Name :	C111-Statistics and Numerical Methods				
Course Index	Course Outcomes				
C111.1	Analyze the concepts of sampling, mean and variance using various tests.				
C111.2	Analyze the concepts of design of experiments using ANOVA.				
C111.3	Solve the algebraic and numerical equations using numerical techniques.				
C111.4	Evaluate the numerical differentiation and integration using different methods.				
C111.5	Solve the first order differential equations using various methods.				

Course Code :	PH3254	Course Year :	2021-2022	Semester:	II
Course Name :	C113-Physics for Electronics Engineering				
Course Index	Course Outcomes				
C113.1	Summarize the basics of crystallography and its importance.				
C113.2	Explain the electrical and magnetic properties of materials.				
C113.3	Apply the basics of semiconductor physics in device applications.				
C113.4	Comprehend the different properties of optical materials and the functioning of opto- electronic devices.				
C113.5	Describe the basics of quantum structures and their applications in nano devices				

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Course Code :	GE3252	Course Year :	2021-2022	Semester:	II
Course Name :	C116-Tamils and Technology				
Course Index	Course Outcomes				
C116.1	Summarize the ancient history and technology of Tamil.				
C116.2	Explain the lifestyle and architectural techniques of the sangam period.				
C116.3	Explain the business practices and currency exchange of ancient Tamil people.				
C116.4	Summarize the Agriculture and Irrigation Technology in sangam period.				
C116.5	Explain the computer applications in Tamil technological development.				

Course Code :	GE3251	Course Year :	2021-2022	Semester:	II
Course Name :	C118-Engineering Graphics				
Course Index	Course Outcomes				
C118.1	Draw the various curves used in engineering practices.				
C118.2	Draw the projections of straight lines which are inclined to both the planes.				
C118.3	Draw the projections of solids inclined to one plane and parallel to other plane.				
C118.4	Draw the projections of sectioned solids and draw the development of lateral surfaces of a solid.				
C118.5	Draw the isometric projections and perspective projections of simple solids.				

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Course Code :	BE3254	Course Year :	2021-2022	Semester:	II
Course Name :	C120-Basic Electrical and Instrumentation Engineering				
Course Index	Course Outcomes				
C120.1	Explain the Construction, types and working of transformers.				
C120.2	Explain the Construction, types and working of DC Machines.				
C120.3	Explain the Construction, types and working of AC Rotating Machines.				
C120.4	Describe the functional elements and working of measuring instruments.				
C120.5	Describe the basics of power systems and protection schemes.				

Course Code :	EC3251	Course Year :	2021-2022	Semester:	II
Course Name :	C121-Circuit Analysis				
Course Index	Course Outcomes				
C121.1	Analyze the Different methods of circuit analysis using Duality and Topology.				
C121.2	Solve the DC and AC by using Network Theorems.				
C121.3	Analyze the Resonance and coupled Circuit.				
C121.4	Analyze the Transient Resonance of the RLC circuit.				
C121.5	Summarize the Coupled Circuits and topology.				

Course Code :	GE3271	Course Year :	2021-2022	Semester:	II
Course Name :	C125-Engineering Practices Laboratory				
Course Index	Course Outcomes				
C125.1	Summarize the plumbing and carpentry of residential and industrial building.				
C125.2	Design of different joints using welding work.				
C125.3	Demonstrate of foundry operations & fitting models.				
C125.4	Design of residential house wiring , lamp wiring and energy meter calibration.				
C125.5	Study of electronic equipments ,Assembling and testing of PCB components				

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Course Code :	EC3271	Course Year :	2021-2022	Semester:	II
Course Name :	**C127-Circuits analysis Laboratory**				
Course Index	Course Outcomes				
C127.1	Evaluate output current and voltage for electric circuits using Thevenin's and Norton's Theorems.				
C127.2	Evaluate output current and voltage for electric circuits using fundamental electrical laws with experimental set up.				
C127.3	Evaluate output current voltage and power n for electric circuits using Reciprocity and Maximum transfer Theorems.				
C127.4	Analyze Frequency response of series & parallel resonance circuits using experimental methods.				
C127.5	Analyze the Transient of RL and RC circuits.				

Course Code :	GE3272	Course Year :	2021-2022	Semester:	II
Course Name :	**C124-Communication Laboratory / Foreign Language**				
Course Index	Course Outcomes				
C124.1	Apply various group discussion skills to take part in effective discussions in a professional context.				
C124.2	Analyze concepts and problems and make effective presentations and explaining them clearly				
C124.3	Write essays, emails, reports and letters in an efficient way.				
C124.4	Write the short articles and instructions.				
C124.5	Write a job application, cover letter and recommendations.				

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SEMESTER III

Course Code :	MA3355	Course Year :	2022-2023	Semester:	III
Course Name :	C201-Random Processes and Linear Algebra				
Course Index	Course Outcomes				
C201.1	Apply the concept of Probability and standard distributions in real life problems.				
C201.2	Analyze the concepts of two dimensional random variables				
C201.3	Apply the concept of random processes in engineering disciplines.				
C201.4	Analyze the concepts of vector spaces.				
C201.5	Analyze the orthogonal projection relates to least square approximations.				

Course Code :	CS3353	Course Year :	2022-2023	Semester:	III
Course Name :	C202-C Programming and Data Structures				
Course Index	Course Outcomes				
C202.1	Write programs using conditional statements and expressions.				
C202.2	Write programs using function and pointer.				
C202.3	Explain the implementation of linear data structure.				
C202.4	Apply the various algorithms of tree data stuctures for solving real world problems.				
C202.5	Apply sorting and searching algorithms for solving a given problem.				

Course Code :	EC3354	Course Year :	2022-2023	Semester:	III
Course Name :	C203-Signals and Systems				
Course Index	Course Outcomes				
C203.1	Explain the properties of signals and systems.				
C203.2	Analyze continuous time signals.				
C203.3	Analyze linear time invariant continuous time systems.				
C203.4	Analyze discrete time signals.				
C203.5	Analyze Linear Time Invariant discrete time systems.				

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Course Code :	EC3353	Course Year :	2022-2023	Semester:	III
Course Name :	**C204-Electronic Devices and Circuits**				
Course Index	Course Outcomes				
C204.1	Explain the construction ,working principle and applications of semiconductor device.				
C204.2	Comprehend the biasing techniques, small signal analysis and gain & frequency response of amplifier				
C204.3	Describe the working principles and charactersitc of multistage amplifier and differential amplifier.				
C204.4	Summarise the working principle and characteristics of multistage amplifier and differential amplifer.				
C204.5	Comprehend the working principle of power amplifiers and DC/DC convertors.				

Course Code :	EC3351	Course Year :	2022-2023	Semester:	III
Course Name :	**C205-Control Systems**				
Course Index	Course Outcomes				
C205.1	Apply the transfer function in modeling of Linear Time Invariant System.				
C205.2	Analyze the time response and stability analysis.				
C205.3	Analyze the open loop and closed loop frequency Response of system by using Bode and Polar Plot.				
C205.4	Analyze the Controllability and Observability for state space model time invariant and timevarying Systems.				
C205.5	Design a Lead, Lag and Lag-lead compensators using Root locus and Bode plot Techniques				

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Course Code :	EC3352	Course Year :	2022-2023	Semester:	III
Course Name :	**C206-Digital Systems Design**				
Course Index	Course Outcomes				
C206.1	Apply Boolean Algebra and Simplification procedures relevant to digital logic				
C206.2	Design Various Combinational digital circuits using logic gates.				
C206.3	Design Synchronous sequential circuits.				
C206.4	Design Asynchronous Sequential Circuits.				
C206.5	Design Programmable devices using Logic gates.				

Course Code :	EC3361	Course Year :	2022-2023	Semester:	III
Course Name :	**C207-Electronic Devices and Circuits Laboratory**				
Course Index	Course Outcomes				
C207.1	Analyse the Characteristic of diodes and rectifiers.				
C207.2	Design of zener diode regulator.				
C207.3	Design of CE and MOSFET drain current and transfer characteristics.				
C207.4	Design frequency respone of CE,CB and CC amplifier				
C207.5	Design of CMRR measurement of differential amplifiers.				

Course Code :	CS3362	Course Year :	2022-2023	Semester:	III
Course Name :	**C208-C Programming and Data Structures Laboratory**				
Course Index	Course Outcomes				
C208.1	Write Programs using conditional statements and expressions.				
C208.2	Write programs using function and pointer.				
C208.3	Apply stack, queue and list ADT's operations for solving a given problem.				
C208.4	Evaluate various kinds of searching and sorting techniques.				
C208.5	Apply appropriate hashing techniques for the given problem.				

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Course Code :	GE3361	Course Year :	2022-2023	Semester:	III
Course Name :	C209-Professional Development				
Course Index	Course Outcomes				
C209.1	Apply MS Word to create quality documents, by structuring and organizing content.				
C209.2	Apply MS Word to view document in different modes and to protect the documents.				
C209.3	Apply MS Excel to perform data operations and analytics, record, retrieve data as per requirements.				
C209.4	Apply MS Excel to visualize data for ease of understanding.				
C209.5	Apply MS PowerPoint for high quality academic presentations by including common tables, charts, graphs, interlinking other elements, and using media objects.				

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SEMESTER IV

Course Code :	EC3452	Course Year :	2022-2023	Semester: IV
Course Name :	C210-Electromagnetic Fields			
Course Index	Course Outcomes			
C210.1	Apply the fundamentals of vector mathematical concepts related to electromagnetic electrostatic fields.			
C210.2	Apply the concepts of electrostatics for boundary conditions and electric energy density.			
C210.3	Apply the concepts of magnetostatics for boundary conditions and magnetic energy density.			
C210.4	Describe the concepts of Faraday's law, Induced Emf and Maxwell's equation.			
C210.5	Explain the concept of EM waves and its propagation in lossy and loseless medium. .			

Course Code :	EC3401	Course Year :	2022-2023	Semester: IV
Course Name :	C211-Networks and Security			
Course Index	Course Outcomes			
C211.1	Describe the network models, data link layer and its functions.			
C211.2	Explain the routing protocols and addressing in network layer.			
C211.3	Summarize the protocol types and paradigms in transport and application layers.			
C211.4	Apply the mechanisms and algorithms of network security.			
C211.5	Describe the concepts of hardware security and block chain technology.			

Course Code :	EC3451	Course Year :	2022-2023	Semester: IV
Course Name :	C212-Linear Integrated Circuits			
Course Index	Course Outcomes			
C212.1	Explain the basic building blocks of linear integrated circuits			
C212.2	Design the linear and non-linear application of OP-AMP.			
C212.3	Design application using analog multiplier of and PLL.			
C212.4	Explain analog to digital converter and digital to analog converter.			
C212.5	Explain waveform generator and specific function IC's.			

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Course Code :	EC3492	Course Year :	2022-2023	Semester: IV
Course Name :	C213-Digital Signal Processing			
Course Index	Course Outcomes			
C213.1	Apply DFT for the analysis of digital signals and systems.			
C213.2	Design FIR filters			
C213.3	Design IIR filters.			
C213.4	Analyze the effects of finite precision representation in digital filters.			
C213.5	Design multirate and adaptive filters and implement the various filters in Digital signal processors.			

Course Code :	EC3491	Course Year :	2022-2023	Semester: IV
Course Name :	C214-Communication Systems			
Course Index	Course Outcomes			
C214.1	Explain the various amplitude modulation techniques.			
C214.2	Summarise the concept of random process , sampling & quantization for the design of communication systems.			
C214.3	Describe various digital techniques used in communication systems.			
C214.4	Comprehend the various digital modulation schemes.			
C214.5	Summarise the importance of demodulation schemes in communication systems.			

Course Code :	GE3451	Course Year :	2022-2023	Semester: IV
Course Name :	C215-Environmental Sciences and Sustainability			
Course Index	Course Outcomes			
C215.1	Describe about the Environment,Ecosystem and the importance of biodiversity.			
C215.2	Summarize Environmental pollution and importance of public participation in environmental protection.			
C215.3	Create awareness on the natural resources and its benefits.			
C215.4	Analyze the impact of engineering solution in environmental problem,social issues and need for sustainable development.			
C215.5	Analyze the concept of sustainability practices and identify green materials, energy cycles and the role of sustainable urbanization.			

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Course Code :	EC3461	Course Year :	2022-2023	Semester: IV
Course Name :	**C216-Communication Systems Laboratory**			
Course Index	Course Outcomes			
C216.1	Design AM,FM & Digital modulators for specific applications.			
C216.2	Design and evaluate the baseband signalling schemes through implementation of digital modulation schemes.			
C216.3	Design and evaluate the sampling frequancy for digital modulation.			
C216.4	Design and evaluate the various functional modules of the communication system.			
C216.5	Design systems with various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of communication systems.			

Course Code :	EC3462	Course Year :	2022-2023	Semester: IV
Course Name :	**C217-Linear Integrated Circuits Laboratory**			
Course Index	Course Outcomes			
C217.1	Analyse various types of feedback amplifiers.			
C217.2	Design oscillators , tuned amplifiers, wave-shaping circuits and multivibrators.			
C217.3	Design and simulate feedback amplifiers, oscillators, tuned amplifiers, waveshaping circuits and multivibrators, filters using SPICE Tool.			
C217.4	Design amplifiers, oscillators, D-A converters using operational amplifiers.			
C217.5	Design filters using op-amp and perform an experiment on frequency response.			

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SEMESTER V

Course Code :	EC3501	Course Year :	2023-2024	Semester: V
Course Name :	**C301-Wireless Communication**			
Course Index	Course Outcomes			
C301.1	Explain the concept and design of a cellular system,wireless channel and the system design specification.			
C301.2	Analyze the concept of mobile radio propagation and fading effects.			
C301.3	Analyze the concept of modulation techniques with BER,PER and BLER equalization and diversity.			
C301.4	Analyze the concept of multiple access techniques TDMA,FDMA and CDMA.			
C301.5	Comprehend the cellular networks on resource availability and traffic demands.			

Course Code :	EC3552	Course Year :	2023-2024	Semester: V
Course Name :	**C302-VLSI and Chip Design**			
Course Index	Course Outcomes			
C302.1	Comprehend about MOS Transistors and its characteristics.			
C302.2	Apply the concepts of combinational logic in CMOS circuit design.			
C302.3	Summarize the concepts of synchronous logic circuits and clocking strategies.			
C302.4	Understand memory architecture and building blocks of arithmetic circuits.			
C302.5	Comprehend the process involved in ASIC Design and testing.			

Course Code :	EC3551	Course Year :	2023-2024	Semester: V
Course Name :	**C303-Transmission lines and RF Systems**			
Course Index	Course Outcomes			
C303.1	Explain the characteristics of transmission lines and its losses.			
C303.2	Calculate the standing wave ratio and input impedance in high frequency transmission lines.			
C303.3	Analyze impedance matching by stubs using Smith Charts.			
C303.4	Comprehend the characteristics of TE and TM waves.			
C303.5	Design a RF transceiver system for wireless communication.			

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Course Code :	CEC370	Course Year :	2023-2024	Semester: V
Course Name :	C003-Low Power IC Design			
Course Index	Course Outcomes			
C003.1	Summarize the fundamentals of low power circuits.			
C003.2	Explain the concept of architectural approaches.			
C003.3	Analyze low-voltage, low-power adders.			
C003.4	Analyze low-voltage, low-power multipliers.			
C003.5	Analyze low-voltage, low-power memories.			

Course Code :	CEC355	Course Year :	2023-2024	Semester: V
Course Name :	C010-Software Defined Radio			
Course Index	Course Outcomes			
C010.1	Comprehend the evolving paradigm of Software defined radio and technologies for its implementation.			
C010.2	Analyze the radio frequency implementation issues.			
C010.3	Compare various digital synthesis procedures.			
C010.4	Summarize the Smart antenna implementation techniques for software defined radio.			
C010.5	Comprehend various hardware and software requirements for software defined radios.			

Course Code :	CEC366	Course Year :	2023-2024	Semester: V
Course Name :	C008-Image Processing			
Course Index	Course Outcomes			
C008.1	Explain the fundamentals of digital image processing .			
C008.2	Describe the imaging techniques of smoothing ,sharpening and enhencement .			
C008.3	Summarise the concept of filtering techniques.			
C008.4	Explain the basics of segmentation, compression, and recognition methods for colour models.			
C008.5	Comprehend image compression concepts.			

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Course Code :	C304	Course Year :	2023-2024	Semester: V
Course Name :	**EC3561-VLSI Laboratory**			
Course Index	Course Outcomes			
C304.1	Write HDL code for digital integrated circuits.			
C304.2	Evaluate presynthesis and post synthesis simulation of digital circuits.			
C304.3	Design analog and digital circuits using EDA tools.			
C304.4	Evaluate the power,area and timing for digital circuits.			
C304.5	Evaluate the performance of analog circuits.			

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SEMESTER VI

Course Code :	ET3491	Course Year :	2023-2024	Semester: VI
Course Name :	C305-Embedded Systems and IOT Design			
Course Index	Course Outcomes			
C305.1	Write the program to perform arithmetic & logical functions and interfacing timers,Timer/Counters and summarise the architecture and features of 8051.			
C305.2	Write the program to interface various peripherals with ARM and describe the design process of an embedded system.			
C305.3	Comprehend the concepts of real time operating systems in an embedded system.			
C305.4	Summarise the architecture and protocols of IOT.			
C305.5	Design an IOT based system for any application.			

Course Code :	CS3491	Course Year :	2023-2024	Semester: VI
Course Name :	C306-Artificial Intelligence and Machine Learning			
Course Index	Course Outcomes			
C306.1	Apply appropriate search algorithms for problem solving.			
C306.2	Apply reasoning under uncertainty.			
C306.3	Analyze supervised learning Models.			
C306.4	Analyze ensembling and unsupervised models.			
C306.5	Analyze deep learning neural network models.			

Course Code :	CCS355	Course Year :	2023-2024	Semester: VI
Course Name :	C056-Neural Networks and Deep Learning			
Course Index	Course Outcomes			
C056.1	Apply Convolution Neural Network for Image Processing.			
C056.2	Understand the basics of associate memory and Unsupervised learning networks.			
C056.3	Apply CNN and its variants for suitable applications.			
C056.4	Apply the key computations underlying deep learning to train deep neural network for various tasks.			
C056.5	Apply auto encoders and generative models for suitable applications.			

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Course Code :	CEC331	Course Year :	2023-2024	Semester: VI
Course Name :	C045-4G/5G Communication Networks			
Course Index	Course Outcomes			
C045.1	Understand the evolution of wireless networks.			
C045.2	Summarize the concepts of 5G Networks.			
C045.3	Comprehend the 5G architecture and protocols.			
C045.4	Understand the dynamic spectrum management.			
C045.5	Explain the security aspects in 5G networks.			

Course Code :	CEC337	Course Year :	2023-2024	Semester: VI
Course Name :	C011-DSP Architecture and Programming			
Course Index	Course Outcomes			
C011.1	Understand the architectural features of DSP Processors.			
C011.2	Comprehend the organization of TMS320C54xx DSP processors.			
C011.3	Comprehend the organization of TMS320C64xx DSP processors.			
C011.4	Design and implement DSP algorithms.			
C011.5	Understand the applications of DSP processors.			

Course Code :	CEC349	Course Year :	2023-2024	Semester: VI
Course Name :	C018-RF ID System Design & Testing			
Course Index	Course Outcomes			
C018.1	Describe RFID systems based on frequency, architecture and performance.			
C018.2	Explain the standards for RFID technology.			
C018.3	Explain the operation of various components of RFID systems.			
C018.4	Describe the privacy and security issues in RFID Systems.			
C018.5	Design the construction and applications of RFID enabled sensor.			

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Course Code :	GE3791	Course Year :	2024-2025	Semester: VII
Course Name :	**C401-Human Values and Ethics**			
Course Index	Course Outcomes			
C401.1	Explain the importance of democrate, secular, and scientific values of social life.			
C401.2	Describe the democratic and scientific values in both personal and Professional life..			
C401.3	Summarise the rational solution to social problems.			
C401.4	Explain the ethical behaviour to the society.			
C401.5	Summarise the practice of critical thinking and the pursuit of truth.			

Course Code :	GE3752	Course Year :	2024-2025	Semester: VII
Course Name :	**CM02-Total Quality Management**			
Course Index	Course Outcomes			
CM02.1	Summarize the concepts of total quality management.			
CM02.2	Summarize the concept of customer focus and satisfaction..			
CM02.3	Analyze Total Quality Management Organization.			
CM02.4	Describe the working principle of seven tools of Total Quality Management.			
CM02.5	Describe the cost of quality in Total Quality Management.			

Course Code :	CCS342	Course Year :	2024-2025	Semester: VII
Course Name :	**C065-Devops**			
Course Index	Course Outcomes			
C065.1	Explain the Devops terminology, definitions and concepts.			
C065.2	Summarize the different version control tools like GIT, Mercurial etc			
C065.3	Apply the concepts of continuous integration, continuous testing and continuous deployment.			
C065.4	Apply the configuration management using ansible.			
C065.5	Apply the benefits and drive the adoptions of cloud based devops tool to solve real world problems.			

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Course Code :	OMR353	Course Year :	2024-2025	Semester: VII
Course Name :	**C130-Sensors**			
Course Index	Course Outcomes			
C130.1	Understand various sensor effects, sensor characteristics, signal types, calibration methods and obtain transfer function and empirical relation of sensors.			
C130.2	Explain the characteristics of Displacement, Proximity and Ranging sensors.			
C130.3	Explain the principle of operation of Force, Magnetic and Heading sensors.			
C130.4	Explain the characteristics of optical, pressure, temperature chemical and smart sensors.			
C130.5	Explain about different signal conditioning circuits design and data acquisition system.			

Course Code :	OMR351	Course Year :	2024-2025	Semester: VII
Course Name :	**C080-Mechatronics**			
Course Index	Course Outcomes			
C080.1	Explain about the various sensors used to develop mechatronics systems.			
C080.2	Explain the architecture and timing diagram of microprocessor, and also interpret and develop programs.			
C080.3	Design appropriate interfacing circuits to connect I/O devices with microprocessor.			
C080.4	Explain PLC based controllers in mechatronics system.			
C080.5	Explain the Actuators used to design mechatronics systems.			