Branch	Semester	Course code	Course Name	Course Outcome
Common(All Branches)	I & II	300112(11)	Applied Chemistry	1. Students can understand the techniques to remove hardness of water and its industrial applications for boiler.
				2. Students would be able to understand the requirement of fuel & its importance along with their analysis for metallurgical processes.
				3. Students would be able to understand the corrosion mechanism & working of batteries.
				4. Students can understand the need and working characteristics of cement, lubricants & polymers in daily life.
				5. Students would be able to understand the properties & application of industrial chemicals, explosives & propellants.
Common(All Branches)	I & II	300212(11/20)	Environment and Ecology	1. Students can understand about the Environment and different types of ecology, nutrient cycles, EIA, Biome, Food web, Food chain
				2. Students would be able to understand types of air pollution, its effect with removal Techniques.
				3. Students would be able to understand types of water pollution, its effect and with treatment techniques.
				4. Students can understand soil Pollution, effects and its control, Solid Waste Management
				5. Students can understand the idea of biotechnological process for the treatment of pollution created by various industries

BEFY(Applied Physics)	I/II	300218(15)	Applied Physics (NEW)	Student will able to understand the: 1.Concept of special theory of relativity and the relative motion of bodies in Three dimensions
				2.Fundamental concept of Nuclear Physics and how nuclear reactions can be used to produce energy. The effect of electric and magnetic fields on charge particles and how it leads to the investigation of isotopes.
				3.Properties and location of Cardinal points and their application in eyepieces. Gain knowledge about sound level descriptors and how they are used in architectural acoustics.
				4.Different phenomenon of lights such as interference, Diffraction, Polarization and impression of using as a tool within a material.
				5. Thorough understanding of principle behind production of laser and its properties. Understand the concept of total internal reflection and how it leads to guide light within a fiber.

All Branch	Ist	300114(14)	Applied Mathematics-I	1. An ability to apply knowledge of mathematics.
				2. Students can apply the knowledge of matrix in different fields such as mechanics, theory of electrical circuit and computers.
				3. Students can use the concepts of integral calculus and solve the problem of maxima and minima with the help of partial differentioan .
				4. Students can formulate and solve simple problems.
	II	300214(14)	Applied Mathematics-II	1. Student can understand to identify, formulate and solve engineering problems by using mathematical tools.
				2. Students can apply the knowledge of vector in different fields such as mechanics, theory of electrical field and computer
				3.Student would be able to apply the knowledge of differential equations in the study of electrical, mechanical and other linear systems.
				4. Students can find the area of curved surface, volume of solids by using the concepts of multiple integrals.
Computer Science & Engineering	III	322351(14)	Mathematics-III	1. Students are expected to understand Fourier Series
				2. Students are expected to understand LAPLACE TRANSFORM
				3. Students are expected to understand PARTIAL DIFFERENTIAL EQUATION
				4. Students are expected to understand COMPLEX VARIABLES and STATISTICS
	IV	322451(14)	Computational Mathematics	1. Students will be able to give solution of algebraic, transcendental equations and simultaneous linear equations
				2. Students will be aware with Numerical Analysis.
				3. Students will be able to solve the Ordinary Differential Equations.
	IV	322452(14)	Discrete Structures	1. Able to apply mathematical logic and Boolean algebra in switching circuits & logic circuits.
				2. Familiar with set theory, relation and functions
				3. Familiar with algebraic structures, graph theory and combinatorics.
				4. Able to solve problems in various fields in computer science, specially networking.
	III	333351(14)	Mathematics-III	1. Students are expected to understand Fourier Series
				2. Students are expected to understand LAPLACE TRANSFORM
				3. Students are expected to understand PARTIAL DIFFERENTIAL EQUATION
				4. Students are expected to understand COMPLEX VARIABLES and STATISTICS
				1. Able to apply mathematical logic and Boolean algebra in switching circuits & logic circuits.

Information Technology	III	333352(14)	Discrete Structures	2. Familiar with set theory, relation and functions 3. Familiar with algebraic structures, graph theory and combinatorics. 4. Able to solve problems in various fields in computer science, specially networking.
	IV	333451(14)	Computational Mathematics	1. Students will be able to give solution of algebraic, transcendental equations and simultaneous linear equations 2. Students will be aware with Numerical Analysis. 3. Students will be able to solve the Ordinary Differential Equations.
Civil Engineering	III	320351(14)	Mathematics III	1. Students are expected to understand Fourier Series 2. Students are expected to understand LAPLACE TRANSFORM 3. Students are expected to understand PARTIAL DIFFERENTIAL EQUATION 4. Students are expected to understand COMPLEX VARIABLES and STATISTICS
	V	320555 (20)	Numerical Methods and Computer Programming	1. Understand the importance of numerical methods and programming language in civil engineering applications. 2. Have a clear idea about C++ programming language. 3. Develop skill for preparing C++ programs for simple as well as complex C++ programs. 4. Customize software's as per the requirements.
Mechanical Engineering	III	337351(14)	Mathematics-III	1. Define Fourier series including half range series, Harmonic analysis and variety of its applications. 2. Define (mathematically) Unit step, Unit impulse, Laplace transforms, its properties, Inverse and applications to solve ordinary differential equations. 3. Form and solve by direct integration method Linear equation of first order including Homogeneous and Non-homogeneous Linear equations and also method of separation of variables. 4. Solve difficult problems using theorems of complex analysis and apply Residue theorem to evaluate real integrals 5. Understand discrete and continuous probability distribution and be able to find mean and standard deviation and use the Uniform distribution.
Electrical Engineering	III	324351(14)	Mathematics III	1. Define Fourier series including half-range series , harmonic analysis and variety of applications 2. Define (mathematically) unit step unit impulse, Laplace transform its properties, inverse and applications to solve ordinary differential equations. 3. Solve difficult problems using theorems of complex analysis and apply residue theorem to evaluate real integrals. Form and solve by direct integration methods linear equations of first order including homogenous and non homogenous, linear equations and also method of separation of variables. 4. Know the definition of Z-transform; calculate Z-transform of some elementary signals, convolution product, formulation of corresponding convolution theorem and its applications to solve difference equations.
	V	324553(24)	Applied Numerical Analysis	1. Find acceptable approximate solutions when exact solutions are either impossible or time-consuming. 2. Approximate a function using an appropriate numerical method for a given set of data. 3. Develop problem solving skills 4. Devise alternate methods of solution better suited to the capabilities of computers.. 5. Describe difficulties that can arise because computers usually use finite precision, often non-decimal arithmetic.
Electrical & Electronics	III	325351(14)	Mathematics -III	1. Define Fourier series including half-range series , harmonic analysis and variety of applications 2. Define (mathematically) unit step unit impulse, Laplace transform its properties, inverse and applications to solve ordinary differential equations. 3. Solve difficult problems using theorems of complex analysis and apply residue theorem to evaluate real integrals. 4. Form and solve by direct integration methods linear equations of first order including homogenous and non homogenous, linear equations and also method of separation of variables. 5. Know the definition of Z-transform; calculate Z-transform of some elementary signals, convolution product, formulation of corresponding convolution theorem and its applications to solve difference equations.'
		325352(14)	Numerical Analysis	1. Students will be able to give solution of algebraic, transcendental equations and simultaneous linear equations 2. Students will be aware with Numerical Analysis. 3. Students will be able to solve the Ordinary Differential Equations.
				1. Define (mathematically) Unit step, Unit impulse, Laplace transforms, its properties, Inverse and applications to solve ordinary differential equations.

				2. Solve difficult problems using theorems of complex analysis and apply Residue theorem to evaluate real integrals
				3. Able to evaluate and interpret Karl Pearson's correlation coefficient and Spearman's correlation coefficient and also find equation of regression line and use them where appropriate
				4. Use special functions in communication system, non linear wave propagation, electromagnetic theory, signal processing etc.
				5. Know the importance of PDEs in modern communication technology and many numerical simulations
	III	328351(14)	Mathematics-III	6. Solve wave equation, telephone equation, telegraph equation, radio equation and vibrations of membranes.
				1. Student will learn the basic concepts of C programming language Implement conditional statements Declaring and defining functions, strings and structures
				2. The student should be able to find out the numerical solutions of algebraic, transcendental and simultaneous linear equations
Electronics & Communication Engineering	IV	328451(28)	Numerical Analysis Using C	3. Use the numerical differentiation and integration and solve engineering problems which are characterized in the form of ordinary differential equations.
				1. Define Fourier series including half range series, Harmonic analysis and variety of its applications
				2. To know the definition of Fourier Transform, its proper ties, concepts of rapidly decreasing function and apply convolution theorem.
				3. Define (mathematically) Unit step, Unit impulse, Laplace transforms, its properties, Inverse and applications to solve ordinary differential equations.
				4. Solve difficult problems using theorems of complex analysis and apply Residue theorem to evaluate real integrals
				5. Able to evaluate and interpret Karl Pearson's correlation coefficient and Spearman's correlation coefficient and also find equation of regression line and use them where appropriate.
	III	327351(14)	Mathematics - III	
				1. use special functions in communication system, non linear wave propagation, electromagnetic theory, signal processing etc
				2. know the importance of PDEs in modern communication technology and many numerical simulations.
				3. solve wave equation, telephone equation, telegraph equation, radio equation and vibrations of membranes.
				4. know the definition of Z- transform and can apply some of the most frequently occurring properties of Z- transform ,Use Z- transform in digital communication system, calculate Z- transform of some elementary signals and solve difference equation.
				5. to study of about a quantity that may take any of given range of values that can't be predicted exactly but can be described in terms of their probability.
Electronics & Instrumentation	IV	327451(14)	Mathematics – IV	
				1. Students will be able to analyze the logical structure of statements symbolically including the proper use of logical connectives, applications of Boolean algebra in circuits and karnaugh map.
				2. Students will be able to determine whether a relation is reflective, symmetric and transitive. They will be able to apply the different types of functions and Hash diagram.
	I	521151(14)	Mathematical Foundations of Computer Science	3. Students will be able to construct inductively defined sets and recursive function. Also they will construct the grammmars.
				4. Student will be able to understand the basics of Graph Theory and trees.
				5. Student will be able to understand the basics of Group Theory and coding.
				1. Students will be able to numerically solve many types of problems such as Roots of equations, system of linear simultaneous equations. Interpolation of values of dependent measurements .
Master of Computer Application	II	521254(14)	Computer Oriented Numerical Analysis	2. Students will be able to approximating the differential or integral of unknown function given a set of discrete measurement from the function
				3. Students will be able to select from alternative methods which most appropriate to solve problems for a specific task.
				4. Student will be able to understand the limitation of each numerical methods especially the conditions under which they fail to converge to a solution.
				1. Students will be able to use allocation model, solve problems involving assignment of jobs to machine ,blending,product mix, advertising media selection, least cost diet, distribution ,transportation.
				2. Students will be able to use the concept of inventory control to determine Economics Order Quantity(E.O.Q) , safety stack ,reorder level, maximum and minimum reorder level.
	III	521352(14)	ComputerOriented	

	III	325352(14)	Optimization	3. students will be able to use PERT & CPM in planning, scheduling and controlling construction of dams, bridge ,roads, development of production of aircrafts , ships and computer networking
				4. Students will be able to present computer oriented algorithm for the most of the method used to solve the well known mathematical model. Students will learn the simulation technique through this paper.

EEE	3rd	325351(14)	Mathematics -III	1. Define Fourier series including half-range series , harmonic analysis and variety of applications
				2. Define (mathematically) unit step unit impulse, Laplace transform its properties, inverse and applications to solve ordinary differential equations.
				3.Solve difficult problems using theorems of complex analysis and apply residue theorem to evaluate real integrals.
				4.Form and solve by direct integration methods linear equations of first order including homogenous and non homogenous, linear equations and also method of separation of variables.
				5. Know the definition of Z-transform; calculate Z-transform of some elementary signals, convolution product, formulationof corresponding convolution theorem and its applications to solve difference equations.'
		325452(24)	Numerical Analysis	1. Students will be able to give solution of algebraic, transcendental equations and
				2.Students will be able to solve simultaneous linear equations.
				3.Students will be able to give solution of Numerical Differentiation and Integration
				4.Students will be able to solve the Ordinary Differential Equations.
				5.Students will be able to analyse curve fitting method
		325353(25)	Basic Electronics	1.Student can learn characteristics of semiconductor devices. Student can predict and design rectifiers and filters as per circuit requirement.
				2.Learn to design transistor biasing circuit and calculating its stability.
				3.Student can apply the concept of feedback in amplifier circuit.
				4. Learn to design oscillator of desired frequency.
				5.Gain experience in the problem finding and trouble shooting in electronics circuits consisting of diodes and transistors.
		325354(25)	Electric Circuits	1.Students will learn about the different types of electrical sources and networks
				2.Students will have knowledge of converting a electrical circuit into graph and will be able to analyze the circuit graphically.
				3.Student will analyse circuits with ideal, independent, and controlled voltage and current sources
				4. Students will learn about series and parallel resonance conditions in series and parallel circuits and its impact on network voltage and current magnitudes.
				5.Students will have knowledge of balanced and unbalanced poly phase circuits, and also able to analyze the behavior of non-sinusoidal waveforms
		325355(24)	Electrical Power Generation	1.Apply both mathematics and chemistry to understand and solve problems in this course.
				2.Design type analyses and solve engineering problems.
				3.Identify the environment for power plant and the issues regarding to that.
				4.Have a basic understanding of conversion of coal, oil, gas, nuclear, hydro, solar, geothermal, etc. energy to electrical energy.
				5.To apply a multi-disciplinary approach to conceive, plan, design, and implement solutions to electrical engineering problems in the field of energy and sustainability.
				6.Successfully apply advanced concepts of electrical power engineering to the analysis, design and development of electric systems, components, equipments or applications to meet desired needs of society professionally and ethically.
				7.Use advanced techniques, skills, and modern scientific and engineering software tools for professional practice
		325356(24)	Electrical Machines-I	1.Understand the fundamentals and working of transformers
				2.Draw the equivalent circuit diagrams of various transformers
				3.Analyze the load profile, voltage regulations and efficiency under various operating conditions
				3.Understand the working principle and construction of direct current machines
				5.Understand the needs and requirements of various types of D.C. machine operations like starting, speed control, tests etc.
				1.Students will be able to analyze circuits using Kirchhoff's laws and design and conduct experiments using various elements, as well as to analyze and interpret data.

		325451(25)	Network Analysis & Synthesis	2.To develop the ability of understanding the application of network theorems in reducing complicated networks to simpler ones.
				3.Students should have the ability to demonstrate the application of Fourier transform and Laplace transform in networks.
				4.Explain and analyze the different types of network functions and derive interrelationship between various parameters.
				5.To understand the different parameters of one port and two port networks.
				6.Analyze the stability of network function and interpret time domain behavior of networks from pole zero plots of network function.
				7.To develop the ability to identify and synthesize the impedance functions using various techniques of synthesis and ability to design the low pass and high pass filters.
		325452(24)	Electromagnetic Theory	1.Compute electric field intensity for various charge distribution and electric flux for various charge distribution.
				2.Compute potential for different charge distributions.
				3.Compute magnetic field intensity and magnetic flux density using Ampere's circuital Law and Stoke's theorem.
				4.Compute force and torque for various current carrying elements.
				5.Enlist Maxwell's equations for time varying fields and solve them for specific regular geometries response.
EEE	4th	325453(24	Electrical Measurements & Measuring Instruments	1.Illustrate the methods of range extension in A.C. & D.C. meters.
				2.Compare calibrated meter readings with standard meters (digital meters).
				3.Interpret the various methods to measure unknown résistance, inductance & capacitance.
				4.Determine the physical & electrical quantities.
		325454(24)	Electrical Power Systems	1.Student will be to calculate the resistance, inductance and capacitance of transmission line.
				2.Student will be able to calculate the voltage regulation of line and analyze the voltage profile of the transmission line.
				3.Student will gain an understanding of VAR control using component to improve p.f,location of capacitor, operation of load tap changing can be examine.
				4.Student will be able to calculate the sag, tension and mechanical stress of a transmission line.
				5.Student will be able to learn different types of conductor and cable with its performance.
		325455(25)	Analog Electronics	1.Students can apply knowledge of mathematics, science and engineering.
				2.Students can understand the working of electronics devices.
				3. Students can design electronics projects based on amplifier.
				4.Students can do research on this field.
		325456(25)	Digital Electronics and Logic Design	1.Student will be to understand different codes & conversion.
				2.Student will be able to understand Boolean expressions and their minimization using K-map and tabulation methods.
				3.Student will be able to design the combinational & sequential logic circuits.
				4.Student will be able to know the working of gates using digital logic families.
		325551(25)	Microprocessor & Peripherals	1. Understand various instructions and their application in programming.
				2.Understand the basic architecture, pin diagram of Microprocessor 8085.
				3. Understand memory organization and mapping
				4.Analyze interrupt architecture, types of interrupts, instruction related to interrupt operation.
				5.Understand architecture, working and interfacing of different interfacing devices with 8085 microprocessor.
		325552(25)	Integrated Circuits & Applications	1.have a thorough understanding of operational amplifiers with linear integrated circuits.
				2.to design circuits using operational amplifiers for various applications.
				3.Familiarize the conversion of data from Analog to Digital and Digital to Analog.
				4.Understand the working of multivibrators using special application IC 555 and general purpose opamp.
				5.Illustrate the function of application specific ICs such as Voltage regulators, PLL
		325553(25)	Linear Control Systems	1.Ability to acquire and apply fundamental principles of science and technology.
				2.Analyze continuous systems mathematically through the use of Laplace functions and state equations form.
				3.Represent any physical system in both transfer functions and state equations form.
				4.Apply classical design methods to improve the performance of continuous controlled system.

EEE	5th	325554(25)	Signal & Systems	1.Students will be able to understand the terminology of signals and basic engineering systems.
				2.Students will understand the role of signals and systems in engineering design.
				3.Students will have the understanding of the use of signals and basic system building blocks and their roles in large/complex system design.
				4.Students will understand signal representation techniques and signal characteristics. 5. Students will understand the difference and the applications of analog versus discrete signals and the conversion between them.
				5.Students will understand the process of sampling and the effects of under-sampling.
				6.Students will understand the Fourier, Laplace and z-transforms.
		325555(25)	Electrical Machine II	1.Understand the construction, working principles of synchronous and three-phase induction machines
				2.Draw the equivalent circuit diagrams under various load conditions
				3.Analyze the load profile, voltage regulations and efficiency in various operating conditions
				4.Understand the needs and requirements of various types of machine operations like starting, speed control, tests etc
		325556(25)	Communication system	1.Student will get the knowledge of generation & reception of amplitude modulated signals.
				2.Student will get the knowledge of generation & reception of angle modulated signals.
				3.Student will get the knowledge pulse modulation system.
				4.Student will know about various digital modulation techniques.
				5.Students will understand the concept of information theory and coding.
EEE	6th	325651(25)	Electrical Power System -II	1.Students will gain the knowledge of one line diagram, impedance diagram and per unit quantities.
				2.Students will gain the knowledge of calculation of symmetrical components.
				3.Students will gain the knowledge of calculation of symmetrical & unsymmetrical faults.
				4.Students will gain the knowledge of power system stability under steady state & transient state condition.
				5.Students will gain the knowledge of criteria for economical distribution of power between generating units and between generating plants.
				6.Students will able to plan the future expansion of power systems as well as determine the best operation of existing systems.
		325652(25)	Modern Instrumentation Techniques	1.Student can understand the use of CT and PT as a protective and measuring device.
				2.Student would be able to select proper Transducer for measurement of various Electrical quantities.
				3.Student would be able to find error and calibrate the instruments.
				4.Student can write programs for different processes using PLC
		325653(25)	Advanced Microprocessors and Peripherals	1.Student will get the basic knowledge of microprocessor architecture
				2.Student will have working knowledge of the instruction set, modes,pin diagram of 8086 microprocessors and to write and debug assembly programs
				3.Student will have basic knowledge of the memory and I/O interfaces, address decoding, as well as interfacing memory & peripheral devices with 8086 microprocessor .
				4.Student will have the basic knowledge of 32 bit microprocessors, co-processors and multiprocessor architecture.
				5.To develop the ability of understanding the upward compatibility and differences among the different microprocessors.
				6.Student wii get the basic knowledgeof Cisc & Risc architecture.
		325654(25)	Power Electronics Devices and Circuits	1.To gain knowledge of various application of semiconductor switches by understanding their static and dynamic characteristics.
				2.To understand the performance characteristics of controlled AC-DC converters for R, RL & RLE loads.
				3.To gain knowledge on basic DC-DC converters and their operation under continuous /discontinuous mode of conduction for RLE loads.
				4.To identify and formulate the requirements for four quadrant operation of DC motor.
				5.To differentiate and understand the significance of various commutation circuits and their consequence on device stress.
		325655(25)	Digital Signal Processing	1.Design digital IIR filters by designing prototypical analog filters and then applying analog to digital conversion techniques such as the bilinear transformation.
				2.Design digital FIR filters using the window method.
				3.Use a computer to design digital filters via the frequency sampling approach.

			Processing	4.Implement digital filters in a variety of forms: direct form I and II, parallel, and cascade, and then analyze their sensitivity to finite precision effects such as input quantization,
				5.Analyze signals using the discrete Fourier transform (DFT).
				6.Understand circular convolution, its relationship to linear convolution.
		325673(25)	Testing & Commissioning of Electrical Equipments	1.Distinguish between power system specifications,plant specification & pro.specification.
				2.Evaluate the significance of temperature rise test &the method to conduct temperature rise test on power transformer.
				3.Analyze the methods of measuring the insulation resistance for power transformer and test set up for impulse test of power transformer.
				4.Analyze the purpose & procedure of power frequency voltage withstand on synchronous machines
				5.Decide the various ratings to be specificed for a fuse & circuit breaker.
EEE	7th	324733(24)	Electrical Drives	1.Electric drive systems for different mode of operations.
				2.Speed control of DC and AC machines using Power Electronics.
				3.Design of ratings on the basis of heating and cooling
				4.Operation of tractions.
		325732(25)	Soft Computing and its applications	1.To expose the students to the concepts of feed forward neural networks.
				2.To provide adequate knowledge about feedback neural networks.
				3.To teach about the concept of fuzziness involved in various systems.
				4.To provide adequate knowledge about fuzzy set theory.
				5.To provide comprehensive knowledge of fuzzy logic control and adaptive fuzzy logic and to design the fuzzy control using genetic algorithm.
		324741(24)	Power Apparatus System	1.Understand the practical application of different types of apparatus used in power stations.
				2.Opt for C.S.E.B., NHPC, NTPC, and other industry as a career are likely to come across substations and shall be able to deliver more efficiently with their prior knowledge & by co-relating the concepts of substation, bus-bar scheme, earthing, protection introduced to them during engineering.
				3.Gain the knowledge of different substation, mechanism of lightning, reliability of transmission line. This shall also impart them the understanding & importance of conducting these tests in real-life situations.
				4.Gain the knowledge of above topics, students would develop analytical ability to understand the system dynamics and become capable of applying analytical approach to engineering challenges ahead.
				5.Understand the concept of reliability of transmission system.
		325734(25)	Microcontrollers and applications	1.Student will get the basic knowledge of different 8-bit microcontrollers and their pin diagram.
				2.Student will get the concept of assembly language programming Internal structure of 8051,Power reseting,and addressing modes that meets requested specifications.
				3.Student will get basic knowledge of timer, counter and interrupt Programming as well as types of interrupts.
				4.Student will get the basic knowledge of Serial programming, Programming standards such as RS232, RS422,1488, 1489,GPIB,Max-232.
				5.Student will get the the basic knowledge of interfacing of different peripheral devices with 8051 microcontroller, memory interfacing, Concept of Embedded-Systems and 8096 micrrocontroller.
		325712 (25)	Power System Protection & SwitchGear	1.Acquire the knowledge of basic operating function of protection system and the operating characteristics of relays.
				2.Student will get the idea of practical applications of Relays for protection of generators, transformers and bus.
				3.Develop the ability to identify the over current relays and distance relays used for protection of feeders and transmission lines.
				4.Acquire the basic knowledge of static relays and their characteristics.
				5.To understand the basics of different types of circuit breakers used for different elements
		325833(25)	Computer Aided Power System	1.Student can learn basic computer aids for analysis of power systems.
				2.Student should be able to use software packages for design and analysis of electrical power networks and investigate typical case study problems.
				3.Students should be able to develop computer based tools for specific applications in power system analysis, design and operation.
				4.Gain experience in the problem finding and trouble shooting in power systems in generation, transmission and distribution systems.
		325831(25)	High Voltage Engineering	1.Describe the various breakdown theories for gaseous, liquid and solid dielectric.
				2.Describe the generating methods for high DC, AC, and impulse.
				3.Describe the measuring methods for high DC, AC and impulse.
				4.Compute the breakdown strength of gas filled insulation systems with sphere gap
				1.Student will gain knowledge of different types of FACTS controllers.

EEE	8th	324872 (24)	FACTS	2.Student will gain concepts of controls of source conversion through power electronics methods under different loading conditions.
				3.Student will understand the principle and operation of voltage source converters and current source converters.
				4.Student will understand the concept of active and reactive power flow in AC system.
				5.Student will gain knowledge of STATCOM.
				6.Student will gain knowledge of different types of semiconductor devices.
				7.Student will analyze static compensators.
		325832(25)	Management concepts & Techniques	1.Students can successfully design and execute project.
				2.Student can understand the management aspects.
				3.Students will be capable of understanding the correlation between physical , market and human resources.
		300817(25)	Non-Conventional Energy Sources	1.To know the energy demand of world, nation and available resources to fulfill the demand
				2.To know about the conventional energy resources and their effective utilization
				3.To acquire the knowledge of modern energy conversion technologies
				4.To be able to understand and perform the various characterization techniques of fuels
				5.To be able to identify available nonconventional (renewable) energy resources and techniques to utilize them effectively.
IT	3rd	333351(14)	Mathematics-III	1. After completion of this course the students will be able to apply Fourier series, Laplace transformation.
				2. Theory of complex variable, Partial differential equations and Random variable to Computer Science problems and solve them.
				3. Hands on these Mathematical topics will make them equipped to prepare for higher studies through competitive examinations.
IT	3rd	333352(14)	Discrete Structures	1. Able to apply mathematical logic and Boolean algebra in switching circuits & logic circuits.
				2. Familiar with set theory, relation and functions.
				3. Familiar with algebraic structures, graph theory and combinatorics.
				4. Able to solve problems in various fields in computer science, specially networking.
IT	3rd	333353(33)	Basic Electronics & Network Theory	1. Students will be able to acknowledge about the fundamental of semiconductor devices, communication hardware devices and basics of computer hardware.
				2. They will learn about the different electronics circuits which play very important role in our day to day life.
				3. Recognize basic electronics components and devices used for different electronic functions.
				4. Be able to design analog and digital electronic circuits at block level.
IT	3rd	333354(33)	Concepts of IT & Web Technology	1. Able to identify thrust areas of computer usage, how computers work, and gain basic knowledge of technological trends, social issues, and career opportunities relative to computers in society.
				2. Acquaint with proper up-keep of computer processor, its peripherals, and storage media.
				3. Able to use the knowledge of the Windows operating system and Windows explorer as well as how to perform essential functions using a graphical user interfaces.
				4. Able to implement the knowledge of DTP using special features of word processors, electronic spreadsheets & software and create professional-looking documents through record keeping, data manipulation, number-crunching and charting activities in lab exercises and assignments.
IT	3rd	333355(33)	Problem Solving &Logic Building using C	1. Use and differentiate between basic concepts of computer hardware and software.
				2. Use data representation for the fundamental data types in C and perform conversions between binary hexadecimal- decimal date representations.
				3. Read, understand and trace the execution of programs written in C language
				4. Analyze problems and design algorithms in pseudo code.
				5. Write C program for a given algorithm using modular approach
IT	4th	333451(14)	Computational Mathematics	After completion of this course students will be able to find Numerical solution of various equations, which may be arising due to mathematical modelling based on engineering problems.

IT	4th	333452(33)	Telecom Switching & Computer Networks	1. Students will be able to acknowledge about the working of telephone exchange and cable technology.
				2. They will learn about concepts of networks and its basic components.
				3. They will be in condition to identify different types of computer networks and protocols used.
				4. They will be able to explain different types of networks are in use and how to communicate securely using them.
IT	4th	333453(22)	Data Structures and Algorithm Analysis	1. Understand the performance issues involved in computing algorithm time-complexities.
				2. Understand and implement basic data structures such as arrays, lists, trees, stacks, queues, binary search trees etc.
				3. Get the knowledge of the data structures and algorithms on which file structures and data bases are based.
				4. Obtain hands-on experience of algorithmic design and implementation through practical sessions of the subject.
				5. Implement various searching and sorting algorithms
				6. Understand and apply fundamental algorithmic problems including Tree traversals, Graph traversals, and shortest paths.
IT	4th	333454(28)	Analog Electronics Circuits	1. Possess knowledge about the fundamental communication devices like amplifiers and oscillator and their importance in communications.
				2. Understand design considerations of these devices according to specific applications.
				3. Understand the amplitude and frequency responses of common amplification circuits.
				4. Develop the ability to analyze and design analog electronic circuits using discrete components.
IT	4th	333455(33)	Object Oriented Concepts & Programming using C++	1. Knowledge and Understanding- At the end of a course the student will understand the concepts of:
				a) Variables, data Types (including strings and arrays) and Expressions
				b) Flow of Control
				c) Functional and procedural abstraction and its importance in good program design
				d) Pointers and memory allocation (static and dynamic)
				e) Iteration and Recursion
				2. Skills - At the end of the course, a student will be able to:
				a) Analyse a simple programming problem specification
				b) Design a high-level (programming language independent) solution to the problem using functional abstraction and general imperative programming language constructs.
				c) Write, compile, execute and debug a C++ program which maps the high-level design onto concrete C++ programming constructs
IT	4th	333456(33)	Computer Organization and Architecture	1. To master the binary and hexadecimal number systems and computer arithmetic,
				2. To identify machines based on Von Neumann architecture and shall also be familiar with the functional units of the processor such as the register file and arithmetic-logical unit.
				3. To identify systems based on single-cycle (MIPS), multi-cycle (MIPS), parallel, pipelined superscalar, and RISC/CISC architectures.
				4. To analyze the cost-performance issues and design trade-offs in designing and constructing a computer processor including memory chips.
IT	5th	322551(22)	Microprocessor& Interfaces	1. The student will be able to analyse, specify, design, write and test assembly language programs of moderate complexity.
				2. The student will be able to select an appropriate 'architecture' or program design to apply to a particular situation; e.g. an interrupt-driven I/O handler for a responsive real-time machine.
				3. Following on from this, thestudent will be able to design and buildthe necessary programs.
IT	5th	333552(33)	Principlesof Communication system	1. Describe various modulation techniques in Analog and digital communication Techniques
				2. Describe work in go flight propagation in Optical fibre and explain Satellite Communication System
				3. Have an understanding of design considerations for multiple access/use spectrum and multiplexing

IT	5th	333553(33)	Database Management System	1. Will be able to describe the basic concepts of RDMBS and relational datamodel.
				2. Be familiar with the relationa database theory,and be able to write relational algebra expressions for queries.
				3. Understand DML, DDL and will be able to construct queries using SQL by knowing the importance of data & its requirements in any applications.
				4. Be familiar with the basic issues of transaction,its processing and concurrencyc ontrol.
				5. Able to translate DB designs from relational notation to ER notation & con Perform normalization once redundancies have been eliminated.
				6. Be familiar with basic db storage structures, access techniques: file / page organizations, indexing methods including B-tree, hashi ng.
IT	5th	333554(33)	Operating System	1. Describe the general architecture ofcomputers and operating system
				2. Understand and analyse theory and implementation of: processes, resource control (concurrency etc.), physical and virtual memory, scheduling, I/O and les.
IT	5th	333555(33)	Programming in Java	1. Can develop solutions for arange of problems using object-orientedprogramming.
				2. Be able to implement, compile, test and run Java programs comprising more than one class, to address a particular software problem.
				3. Demonstratethe abilitytousesimpledatastructures like arrays inaJavaprogram
IT	5th	333556(33)	Theory of Computation	1. Be able to construct finite state machines and the equivalent regular expressions.
				2. Be able to prove the equivalence of languages described by finitestate machines and regular expressions.
				3. Be able to construct pushdow nautomata and the equivalent context free grammars.
				4. Be able to prove the equivalence of languages described by pushdown automata and contextfree grammars.
				5. Be able to construct Turing machines and Post machines.
IT	6th	333651(33)	Web Application Development	1. Explain the understanding of working of web Applications.
				2. Explain Architectural Framework fore-commerce.
				3. Develop Web applications that can behosted on web servers.
IT	6th	333652(33)	InformationTheory& Coding	1. Students will be able to acknowledge about the different probability of erroneous condition in communication and how to controlit.
				2. They wil llearnto optimize the channel bandwid than d different conditions to improve efficiency o fthe communication system.
				3. Understand basic concepts of complexity of cryptographic security methods and their practical applications.
				4. Apply and control specific coding methods and be able to calculate the rate and error probabilities achieved.
IT	6th	333653(33)	SoftwareEngineering & ProjectManagement	1. Account for traditional and modern software development models and their relevance and suitability of different types of development projects, including agile software development.
				2. Analyze and discuss the different stages and processes in a development course, and discuss challenges related to the differentstages.
				3. Haveexperience withthe projectasaworkformintheoryandpractice
				4. Explain techniques for project management, estimatingand risk assessment
IT	6th	333654(33)	UNIX&Shell Programming	Students will be able to Work confidently inUnix/Linux environment.
IT	6th	333655(33)	ComputerGraphics & Animation	1. An ability to apply knowledge of mathematics, science, and engineering to both software and hardware design problems.
				2. Demonstrating the ability to program animation and interactive projects at a professional level from ground level to finishing stages.
				3. Students should demonstrate proficiency and competency in advanced 3Dmodeling and animation software (specifically modelling, rigging, lighting, texturing and animation.).
				4. Students should be competent in the use of software packages with the ability to translate their artistic skills in to any new software they encounter.
				5. Empowering graduates to make the best moving images work inconsonance with good combination of sound, colour, perspective, and story telling into an established graphical context.
IT	6th	333674(22)	Inter-NetworkingwithTCP/IP	1. Describe the architecture, design and behaviours of the internet and of the TCP/IP suite of protocols.
				2. Describe the concepts and techniques that have been used to design and implement the TCP/IP Internet technology

				3. Describe the issues that are driving the development to new protocols to broaden and enhance the operation of the Internet.
IT	7th	333731(22)	DataMining & Warehousing	1. Design a data warehouse for an organization
				2. Develop skills to write queries using DMQL
				3. Extract knowledge using datamining techniques
				4. Adapt to new datamining tools.
				5. Explore recent trends in datamining such as web mining, spatial-temporal mining.
IT	7th	333732(33)	Management Information System& IT	1. Describe the basic concepts and technologies used in the field of management information systems;
				2. Identify the different types of management information systems
				3. Explain the ethical, social, and security issues of information systems
				4. Describe the role of information systems in organizations, the strategic management processes, and the implications for the management
				5. Describe about the importance of managing organizational change associated with information systems implementation
				6. Describe the practical approach of developing and implementing information systems.
IT	7th	333733(22)	Cryptography& NetworkSecurity	1. Conventional encryption algorithms for confidentiality and their design principles
				2. Public key encryption algorithms and their design principles
				3. Use of message authentication codes, hash functions, digital signature and public key certificates
				4. Network security tools and applications
				5. System-level security issues like threat of and counter measures for intruders and viruses, and the use of firewalls and trusted systems.
IT	7th	333734(22)	ArtificialIntelligence &ExpertSystems	1. Demonstrate fundamental understanding of artificial intelligence (AI) and expert systems.
				2. Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation and learning.
				3. Demonstrate awareness and a fundamental understanding of various applications of AI techniques in intelligent agents, expert systems, artificial neural networks and other machine learning models.
				4. Demonstrate proficiency in applying scientific method to models of machine learning
IT	7th	322746(22)	CloudComputing	1. Students will be able to perform cloud oriented analysis.
				2. Students will be able to model cloud candidate derived from existing business documentation.
				3. Students will be able to design the composition of a cloud services.
				4. Students will be able to design application services for technology abstraction.
IT	8th	333831(33)	EnterpriseResource Planning(ERP)	1. Describe the basic concepts and technologies used in ERP
				2. Describe ERP package selection process
				3. Describe the process of developing and implementing ERP systems;
				4. Identify and describe typical functional modules in ERP system;
				5. Explain the different applications of ERP systems.
IT	8th	333832(33)	MobileComputing andApplication	1. Understand the basic physical-layer architecture of a mobile communication system
				2. Understand various multiple-access techniques for mobile communications, and their advantages and disadvantages.
				3. Students will be able to acknowledge about the working and development of mobile and wireless devices in detail, services provided by them and recent application development trends in this field
IT	8th	333833(22)	Cyber Security	1. Be able to acknowledge about the cybercrime, cybercriminal, and intellectual property rights.
				2. Encouraging Open Standards.
				3. Protection and resilience of Critical Information Infrastructure.
				4. To enable effective prevention, investigation and prosecution of cybercrime and enhancement of law enforcement capabilities through appropriate legislative intervention.
IT	8th	322849(22)	Software Testing	1. Will be able to design and conduct a software test process for a software testing project.
				2. Will be able to identify various software testing problems, and solve these problems by designing and selecting software test models, criteria, strategies and methods.
				3. Will be able to use software testing method s and modern software testing tools for the testing projects
IT	8th	300815(22)	Internet & Web Technology	1. Understand, analyse and apply the role of languages like HTML, DHTML, CSS, XML, Javascript and web applications

				2. Analyse a web page and identify its elements and attributes. 3. Create XML documents and XML Schema
CIVIL ENGG	3rd	320351(14)	Mathematics - III	1. Students are expected to understand Fourier Series 2. Students are expected to understand LAPLACE TRANSFORM 3. Students are expected to understand PARTIAL DIFFERENTIAL EQUATION 4. Students are expected to understand COMPLEX VARIABLES and STATISTICS
CIVIL ENGG	3rd	320352(20)	Fluid Mechanics – I	1. Students are expected to understand different types of fluids. 2. Students are expected to compare fluids flow condition. 3. Students are expected to understand & evaluate flow in pipes & losses . 4. Students are expected to compare flow of fluids
CIVIL ENGG	3rd	320353(20)	Surveying – I	1. Determine elevations by applying different techniques. 2. Deal with the minor instruments and will be familiar with their functioning. 3. Do transverse computations, detect and rectify errors. 4. Set out various curves with the field problems.
CIVIL ENGG	3rd	320354(20)	Mechanics of Solids	1. The basic concepts of Mechanics of Solids are clear to students. 2. By knowing the stresses and strains developed in a structure, the student is able to find out at which point structure is strong and at which point it requires strengthening. 3. The bending moments and shear force at any cross section of the beam can be easily found out with the help of BMD and SFD, which enables the student now to study and design the beam. 4. Knowing the analysis of dams and retaining walls, the stresses at different points of dam and retaining can be known and these structures can be designed 5. The student is now ready to learn designing of different structures. The base of study of structural analysis and designing is formed, which are the subjects of higher semesters.
CIVIL ENGG	3rd	320355(20)	Building Materials	1. Students are expected to understand materials of construction. 2. Students are expected to know about Special concrete. 3. Students are expected to read about timber, plywood, paints and glass materials
CIVIL ENGG	3rd	320356(20)	Engineeirng Geology	1. Show the knowledge about engineering geology. 2. Show knowledge of the most important rocks and minerals and be able to identify them. 3. Analyze the Earthquakes and its various types. 4. Understand the characteristics of various Geological Hazards. 5. Do the Geological investigations; understand the geological conditions and geological maps.
CIVIL ENGG	4th	320451(20)	Structural Analysis-I	1. Students are expected to understand various methods to analyse structures for slopes and deflections. 2. Students are expected to understand various types' determinate and indeterminate structures. 3. Students are expected to understand rolling effects of loads and Influence diagrams. 4. Students are expected to understand concept of bridges of suspension and arch types.
CIVIL ENGG	4th	320452(20)	Fluid Mechanics – II	1. Students are expected to find turbulence flow in pipe . 2. Students are expected to analyse flow of fluids in pipe network. 3. Students are expected to understand & evaluate flow in open channel. 4. Students are expected to understand & analyse transmission of pressure waves. . 5. Students are expected to learn hydraulic properties of Turbine & Pumps.
CIVIL ENGG	4th	320453(20)	Surveying – II	1. Deal with the various aspects of Trilateration and Triangulation 2. Do the relevant computations, errors and observations. 3. Gain and apply the knowledge of Tacheometery, various systems, instruments etc. 4. Apply the concepts of Photographic and aerial surveying. 5. Efficiently deal with the Hydrographic surveying.
CIVIL ENGG	4th	320454(20)	Civil Engineering Drawing	1. Students are expected to understand various methods of general principles ofplanning . 2. Students are expected to understand drawing plan of single, double story residential buildings 3. Students are expected to understand drawing of elevation of single & double story buildings
CIVIL ENGG	4th	320455(20)	Building Construction	1. Students are expected to understand various parts of building. 2. Students are expected to understand various types of bonds. 3. Students are expected to read construction drawing of form work. 4. Students are expected to understand importance of safety in construction.
				1. Students are expected to understand highway planning &design .

CIVIL ENGG	4th	320456(20)	Transportation Engineering-I	2. Students are expected to understand traffic Engineering.
				3. Students are expected to understand & evaluate highway construction material.
				4. Students are expected to develop exposure in pavement design.
				5. Students are expected to learn airport planning.
CIVIL ENGG	5th	320551(20)	Structural Analysis-II	1. Capable of analyzing different kinds of structures such as determinate, indeterminate, rigid jointed or pin-jointed plane frames.
				2. Capable of understanding about the suitable method for a given structure
				3. Capable of drawing influence line diagram for determinate and indeterminate beams and to find out maximum values of stress function.
				4. Ready to proceed for designing of analysed structure.
CIVIL ENGG	5th	320552(20)	Structural Engineering Design-I	1.Understand the importance of reinforced concrete structure.
				2.Understand the different method of analysis and design of reinforced concrete structures.
				3.Understand the procedure of analysis and design of beams by working stress and limit state method.
				4.Understand the procedure of analysis and design of other elements such as slabs, columns, footings and staircases.
CIVIL ENGG	5th	320553(20)	Geotech Engineering-I	1.Know about soil and development of soil mechanics and soil formation and characteristic of soil.
				2. Field identification, soil classification system.
				3. Study the lab experiments and simulations of experiment result with the theoretical characteristic of soil.
				4.Study of different theory Newmart Charts, Westergaard and Boussinesq equation.
				5. Able to find at experiment, shear strength of soil and different method of soil exploration.
CIVIL ENGG	5th	320554(20)	Transportation Engineering-II	1. A person with broad vision and knowledge of different means of Transportation Engineering.
				2. The students will be able to make safe design for railway track with high speed.
				3. The students will be able to know, what are the selection of site and collection of data for Bridge Design.
				4. The students will be able to understand methods of construction of Tunnel and Harbour.
CIVIL ENGG	5th	320555(20)	Numerical Methods & Computer Programming	1. Understand the importance of numerical methods and programming language in civil engineering applications.
				2. Have a clear idea about C++ programming language.
				3. Develop skill for preparing C++ programs for simple as well as complex C++ programs.
				4. Customize software's as per the requirements.
CIVIL ENGG	5th	320556(20)	Engineering Hydrology	1. Students are able to understand the concepts of hydrologic cycle and are able to explain the practical application of hydrology
				2. Students should be able to analyze the rainfall data.
				3. Students can explain the effects of infiltration on runoff.
				4. Students should be able to develop the unit hydrograph.
				5. Students can estimate the ground water flow.
CIVIL ENGG	6th	320651(20)	Structural Engineering Design-II	1. To develop ability to select adequate shape and grade of structural steel.
				2. To understand the basis of economical and safe design of steel structures.
				3. To develop ability of choosing proper fastener for a particular joint.
				4. To develop the ability to design structural steel elements by Limit State Method.
CIVIL ENGG	6th	320652(20)	Geotech Engineering-II	1. To know how to achieve stability of soil against gravitational force and seepage of water infinite slope concept of
				2. Design of earth structure and their stability against soil pressure.
				3. Design of shallow foundation and their failure how to measure bearing capacity of soil, effect of settlement of
				4. Design of deep foundation selection of type of deep foundation design criterion for pile foundation.
				5. To learn about the effects of expansive soils and contaminated soils on foundation.
CIVIL ENGG	6th	320653(20)	Environmental	1. Provide deep understanding about planning, designing, construction and monitoring of a water treatment plant as per a city's water demand.
				2. Students possess the ability to design an analysis the complexities of water distribution system.

CIVIL ENGG	6th	320653(20)	Engineering-I	3. Ability to give meaningful result to the water supply project they get in hand.
				4. Have a appreciation for the scope, complexity and requirement to treat the subject as the need of the hour and has a positive attitude to earth environment and its protection.
CIVIL ENGG	6th	320654(20)	Concrete Technology	1. Ability to measure quality of concrete making materials.
				2. Ability to design concrete mixes according to IS, ACI, BS Code methods.
				3. Capable of understanding field requirements of various types of concrete.
				4. Understanding the process of selection of materials and testing, uses of admixtures, professional practices in ready mix concrete.
CIVIL ENGG	6th	320655(20)	Construction Planning	1. To understand objective of construction planning.
				2. Ability to develop construction schedule.
				3. To understand the application of safety and quality control in construction.
CIVIL ENGG	6th	320761(20)	Mordern Construction Materials	To know the importance and areas of application of modern construction materials.
CIVIL ENGG	7th	320731(20)	Structural Engineering Design-III	1. Capable of designing Plate Girders.
				2. Capable of designing members subjected to combined forces.
				3. Capable of designing Column bases & Gantry Girders.
				4. Capable of designing eccentric and Moment connections.
				5. Capable of designing Roof trusses.
CIVIL ENGG	7th	320732(20)	Water Resource Engineering-I	
				1. Students are able to understand the different types of irrigation.
				2. Students should be able to design the canal.
				3. Students can explain the effects of water logging.
				4. Students should be able to understand the behavior of river.
				5. Students can plan the reservoir for different demands.
CIVIL ENGG	7th	320733(20)	Environmental Engineering-II	1. A student must be capable of designing a sewer system for a city taking into consideration the variations in flow.
				2. The student should be capable of managing controlling the sewage treatment plant with complete knowledge of the design values and this functioning.
				3. The student must be able to decide upon the quantum of treatment to be given to the wastewater from different sources before they are discharged to open water courses.
				4. The student must be able to analyze coming from various processes in an industry and decide upon the techniques of treatment to be given.
				5. The student will be socially responsible and aware of the social, environmental and health implications of solid waste and its management.
CIVIL ENGG	7th	320734(20)	Quantity Survey And Cost Evaluation	1. Students are expected to identify various items of building and able to determine approximate estimate of buildings.
				2. Students are expected to determine quantities estimate of civil engineering works from given details.
				3. Students are expected to know about determination of quantities of materials and rate analysis of any items in residential building works.
				4. Students are expected to know contract and its types.
				5. Students are expected to know concept of valuation.
CIVIL ENGG	7th	320750(20)	Traffic Engineering	1. This subject will provide the knowledge of traffic, its problem and remedial measures in mixed traffic in developing country.
				2. It will provide the knowledge of traffic characteristic in details.
				3. It will help in reducing the accidents.
				4. It will help in geometric design of road, road lightening.
				5. It will help in controlling the different pollution occurring in road.
CIVIL ENGG	8th	320831(20)	Structural Engineering Design-IV	1. Capable of designing combined footings.
				2. Capable of designing retaining walls
				3. Capable of designing simple water tanks.
				4. Capable of designing of solid slab bridges
				5. Capable of analyzing prestressed concrete beams.
			Water Resource	1. Students should be able to design the dams.
				2. Students should be able to design the spillways.

CIVIL ENGG	8th	320832(20)	Water Resource Engineering-II	3. Students should be able to design the weir and barrage.
				4. Students should be able to design canal falls.
				5. Students should be able to design different types of cross drainage works.
CIVIL ENGG	8th	320843(20)	Professional Elective-III (Environmental Pollution and Management)	1. To be able to plan and handle issues related to environmental pollution and its management and sustainable development.
CIVIL ENGG	8th	320844(20)	Professional Elective-III (Air Pollution and Control Measures)	1. To be able to plan and handle issues related to air pollution and its control.
CIVIL ENGG	8th	320833(20)	Structural Analysis-IIII	1. To be able to analyze multi story frames by approximate methods.
				2. To be able to analyze beams and frames by flexibility method.
				3. To be able to analyze beams and frames by stiffness method.
				4. To be able to analyze, beams and frames by finite element method.
				5. To be able to analyze beams and frames by plastic method of analysis.
BEFY	I/II	300111(46)	LANGUAGE (PROFESSIONAL COMMUNICATION SKILLS	1)Students will be able to interact with academic content, demonstrate ability to think critically, utilizing information and digital literacy skills to demonstrate behaviour and attitudes appropriate to a university environment.
				2)Students will be able to draft cover letters, Resume, Quotation, Tender, Notice, reports and understand its importance professionally.
				3)Students will be able to discuss and respond to content of the text orally and produce academic vocabulary appropriately orally and in writing.
				4)Students will be able to develop techniques for effective speaking and will be able to participate effectively in meetings, seminars, conferences and presentation through verbal and non- verbal clues.
				5)Students will be able to understand the importance of listening and would become effective proper decision maker and will be able to influence and persuade effectively.
E&I	III	327351(14)	Mathematics - III	1. Define Fourier series including half range series, Harmonic analysis and variety of its applications.
				2. To know the definition of Fourier Transform, its proper ties, concepts of rapidly decreasing function and apply convolution theorem.
				3. Define (mathematically) Unit step, Unit impulse, Laplace transforms, its properties, Inverse and applications to solve ordinary differential equations.
				4. Solve difficult problems using theorems of complex analysis and apply Residue theorem to evaluate real integrals
				5. Able to evaluate and interpret Karl Pearson's correlation coefficient and Spearman's correlation coefficient and also find equation of regression line and use them where appropriate.
E&I	III	327352(27)	Basic Electronics	1. Student should be able to understand the operating principles of major electronic devices, circuit models and connection to the physical operation of device
				2. Student should able to apply this knowledge to the analysis and design of basic circuits.
E&I	III	327353(27)	Measurement & Instruments	1. Students should be able to know about the basics of instrumentation.
				2. Students should be able to gain knowledge about measurement and calibration.
				3. Students should be able to know about the basic types of bridges.
				4. Students should be able to gain knowledge about basic potentiometer circuits.
E&I	III	327354(27)	Network Analysis and Synthesis	1. The undergraduates should have ability to apply the concepts of the electrical circuit.
				2. They should be able to solve networks using topology principles, network theorems and transient analysis.
E&I	III	327355(27)	Programming with C	1. Students should be able to learn a programming language.
				2. Students should be able to write programs in C to solve problems.
E&I	III	327356(28)	Digital Logic Design	1. Students will be able to gain knowledge about various codes, employ Boolean algebra and circuit minimization techniques.
				2. Students gain knowledge to interpret the operation of logic circuit such as adders, subtractors, multiplexers, flip-flops, shift registers and counters.
				3. Students will be able to design asynchronous, synchronous sequential circuits and finite state machines.
				4. Gain knowledge about various logic families and select a suitable one for a specific application.

E&I	IV	327451(14)	Mathematics – IV	1. use special functions in communication system, non linear wave propagation, electromagnetic theory, signal processing etc.
				2. know the importance of PDEs in modern communication technology and many numerical simulations.
				3. solve wave equation, telephone equation, telegraph equation, radio equation and vibrations of membranes.
				4. know the definition of Z- transform and can apply some of the most frequently occurring properties of Z- transform,Use Z- transform in digital communication system, calculate Z- transform of some elementary signals and solve difference equation.
				5. to study of about a quantity that may take any of given range of values that can't be predicted exactly but can be described in terms of their probability.
E&I	IV	327452(27)	Applied Electronics	1. Studentswill gain the knowledge of basic transistor amplifier at low frequency & high frequency.
				2. Studentswill develop an ability to determine and describe the low frequency & high frequency transistor amplifier through h-parameter model & π model
				3. Studentswill the required knowledge of transistor amplifier, multistage amplifier and feedback amplifier.
				4. Studentswill be equipped with the knowledge of power amplifier & push pull amplifier.
E&I	IV	327453(24)	Electrical Machines	1. understand the fundamentals and working of transformers
				2. draw the equivalent circuit diagrams of various transformers
				3. understand the working principle and construction of DC and AC machines
				4. understand the needs and requirements of various types of d.c. machine operations like starting, speed control,tests etc.
E&I	IV	327454(27)	Sensors & Transducers	1. Students should have the knowledge of basic connection to kit such as power, input signal, and voltage measurement.
				2. Students should have the knowledge of LVDT and displacement measurement.
				3. Students should have the knowledge to design the characteristics of strain gauge and measurement of force.
				4. Students should have the knowledge to design characteristics of NTC, Thermistor.
				5. Students should have the knowledge to draw the characteristics of photovoltaic cell and photoconductive cell.
				6. Students should have knowledge to draw characteristics of sound sensing switches (IC -555).
E&I	IV	327455(28)	Microprocessor & Interfaces	1. Gain knowledge about architecture of general purpose microprocessor.
				2. Students will be able to describe physical and logical configuration of memory.
				3. Demonstrate the ability to program the 8085 microprocessor.
				4. Interface the 8085 microprocessor to the outside world.
E&I	IV	327456(28)	Signals and Systems	1. The student will be able to understand the classification of signals and systems.
				2. Gain knowledge about the frequency domain analysis of continuous time and discrete time signals.
				3. Use the Z-transform techniques to solve the system equations.
E&I	V	327551(27)	Signal Conditioning Circuits	1. Realize circuits; design for signal analysis using OPAMP IC's.
				2. Gain knowledge of applications of OPAMPs.
				3. Design of OPAMP based application circuits.
				4. Gain knowledge of special OPAMP circuits.
				5. Gain knowledge of internal functional blocks and the applications of special IC's like timers, regulator circuits.
E&I	V	327552(27)	Industrial Instrumentation	1. Students should have the knowledge of acceleration, vibration and jerk measurement.
				2. Students should have the knowledge of level measurement.
				3. Students should have the knowledge of flow measurement.
				4. Students should have the knowledge of thickness & sound measurement.
				5. Students should have knowledge of fluid properties measurement.
E&I	V	327553(27)	Communication Engineering	1. To know about the basic blocks and elements of a general communication system.
				2. To gain knowledge about various amplitude modulation & demodulation techniques, their classification & their respective advantages, disadvantages & applications.
				3. To understand the concept of frequency modulation & demodulation techniques.
				4. To understand the concept of digital modulation & demodulation techniques, their classification & their respective advantages, disadvantages & applications.
				5. To know about the elements & operating principle of satellite &mobile communication system.

E&I	V	327554(27)	Thermodynamics & Fluid Mechanics	1. Gain knowledge of basics of thermodynamics and entropy. 2. Understand properties of fluids and fluid statics and dynamics. 3. Gain knowledge of basic and advanced knowledge of application of flow measurement.
E&I	V	327555(27)	Control System Engineering	1. Gain knowledge about the Block Diagram Algebra and Modeling of System. 2. Analyze Time Response Analysis of Control Systems. 3. Gain knowledge about the Root Locus & Bode Plots. 4. Gain knowledge about the polar & Nyquist Plots. 5. Familiar about the Basic Compensators and State Space Analysis.
E&I	V	327556(28)	Advanced Microprocessors & Interfacing	1. Gain knowledge about architecture of advance microprocessors. 2. Demonstrate the ability to program the 8086 microprocessor. 3. Interface the 8086 microprocessor to the outside world. 4. Understand multiprocessor systems and learn about co-processors.
E&I	VI	327651(27)	Process Dynamics & Control	1. Understandprocess variables, degrees of freedom, and Self regulation, first & second order Process System. 2. Know the importance of on-off, proportional, integral and derivative modes, composite control modes - PI, PD and PID control modes. 3. Understand different tuning methods like continuous cycling method, Ziegler - Nichol's tuning.
E&I	VI	327652(27)	Programmable Logic Controller	1. Understand basic structure of PLC, overview of PLC systems- Input/ Output modules. 2. Know the MCR functions and various applications of different jump functions and Analog PLC operation. 3. Understand, Communication in DCS, DCS system integration with PLC and computers, Data loggers, Data acquisition systems (DAS), computer control hierarchy levels and Direct Digital control (DDC).
E&I	VI	327653(27)	Bio Medical Instrumentation	1. Understand Basics of Medical Terminology and their application in different Medical Instruments. 2. Know the Operational activity of Human Body & its behavioral analysis. 3. Understand of various disease identification & their measurement system used in medical diagnosis & Treatment. 4. Identify the problems encountered in measurement of biomedical signal.
E&I	VI	327654(27)	Digital Signal Processing	1. Understand Basics knowledge and their application in different Digital Filters . 2. Know the Applications of Digital Signal Processors. 3. Understand of various Finite Impulse Response Filters. 4. Identify the Discrete Fourier Transform and Fast Fourier Transform.
E&I	VI	327655(28)	Microcontroller & Embedded System	1. To understand Microcontroller 8051 its architecture and its instruction set. 2. Gain knowledge about Counter/timer and interrupts in 8051 Microcontroller and Programming concepts. 3. Students will be able to do serial communication programming and gain knowledge of serial communication. 4. Students will be able to understand interfacing Microcontroller 8051 with devices.
E&I	VI	327672(27)	Microelectronic Devices & VLSI Technology	1. Understanding NMOS / PMOS Transistor, Threshold Voltage Equation, Body Effect, MOS Device Design Equation, Sub Threshold Region, Channel Length Modulation. 2. Know the Static CMOS Design, NAND Gate, NOR Gate, Ratioed Logic Pass transistor Logic, Transmission Gate. 3. Understand Static Latch and Register, S-R Latch Circuit, D-Latch and Triggered Flip Flop, FPGA and CPLD Architecture.
E&I	VII	327731(27)	Virtual Instrumentation	1. Completion of Course student will understand the programming analysis of virtual Instrumentation. 2. Student will be able to apply this knowledge to various industrial process for graphical user interface programming and controlling of process. 3. Be able to apply this knowledge to design various projects in different fields by the use of toolkits.
E&I	VII	327732(27)	Analytical Instrumentation	1. Students' gain knowledge about basic Analytical Instrumentation. 2. Students' gain knowledge about applications of Analytical Instrumentation. 3. Students' gain knowledge about basic types of gas analyzers.
E&I	VII	327733(27)	Advanced Instrumentation	1. Graduates will have knowledge of principle and working of speed measuring instrument. 2. Graduates will know the concept of non destructive instrument which is used in modern industry. 3. Graduates will have knowledge about EMC and nuclear instruments. 4. Graduates will have knowledge about radiation measurement from various electrical and electronic equipment. 5. Graduate will have knowledge about high frequency measurement.

				6. Graduate will have knowledge about analog to digital convertor and digital instruments.
E&I	VII	327734(27)	Power Electronic Devices & Drives	1. Knowledge about structure and principle of basic components involved in power electronic system.
				2. Knowledge about different drives used in power electronic systems.
				3. Knowledge about the basic types of power diodes.
				4. Knowledge about the various applications of power electronic devices.
				5. Knowledge about the need of power electronic devices and controllers.
				6. Knowledge about thyristor and its operation.
				7. Knowledge about various turn on and commutation methods for thyristors.
				8. Knowledge about power BJT, MOSFET and IGBT.
E&I	VII	327745(27)	Instrumentation System Reliability	1. Graduates will have to knowledge about various techniques for calculation of reliability.
				2. Graduates will understand the basic concept of various distributions such as Weibull, Gaussian etc.
				3. Graduates will develop skills for solving the system complexity using various method.
				4. Graduates will have knowledge of maintainability & availability of a system for achieving their effective outcome.
				5. Graduates will learn the basic techniques of design of reliability.
E&I	VIII	327831(27)	Optical Instrumentation	1. To gain knowledge about the Optical Fibers and their Characteristics.
				2. To gain knowledge about the Optical Sources & Detectors.
				3. To gain knowledge about the Industrial Applications of Optical Fibers.
				4. To gain knowledge about the LASER and its different types.
				5. To gain knowledge about the Industrial Applications of Lasers.
				6. To gain knowledge about the Holography and Medical Applications of Lasers.
E&I	VIII	327832(27)	Digital Measurement Techniques	1. Students will gain knowledge about digital measurement of time, phase and frequency.
				2. Student will have knowledge about Digital to Analog converters.
				3. Students will gain the knowledge about digitally programmable circuits.
E&I	VIII	327833(27)	Industrial Electronics	1. To provide knowledge about controlled rectifiers, their generalized circuits and operation.
				2. To provide knowledge about AC Voltage Controllers & Cycloconverters, their generalized circuits and operation.
				3. To provide knowledge about inverters, their generalized circuits and operation.
				4. To provide knowledge about operation of SMPS, UPS, AC & DC switches.
				5. To provide knowledge about operation of Industrial timers, industrial heating, dielectric heating .
E&I	VIII	327844(27)	Power Plant Instrumentation	1. Graduate will have knowledge of power generation process.
				2. Graduate will have knowledge of different type of controller.
				3. Graduate will understand the different analyzers.
				4. Graduate will understand the different functions process.

EE		324351(14)	Mathematics III	1. Define Fourier series including half-range series , harmonic analysis and variety of applications
				2. Define (mathematically) unit step unit impulse, Laplace transform its properties, inverse and applications to solve ordinary differential equations.
				3. Solve difficult problems using theorems of complex analysis and apply residue theorem to evaluate real integrals.
				4. Form and solve by direct integration methods linear equations of first order including homogenous and non homogenous, linear equations and also method of separation of variables.
				5. Know the definition of Z-transform; calculate Z-transform of some elementary signals, convolution product, formulation of corresponding convolution theorem and its applications to solve difference equations.'
		324352(24)	Electrical Machines	1. Understand the fundamentals and working of transformers
				2. Draw the equivalent circuit diagrams of various transformers
				3. Analyse the load profile, voltage regulations and efficiency under various operating conditions
				4. Understand the working principle and construction of direct current machines
				5. Understand the needs and requirements of various types of d.c. machine operations like starting, speed control, tests etc.
		324353(25)	Basic Electronics	1. Student can predict and design rectifiers and filters as per circuit requirement.
				2. Learn to design transistor biasing circuit and calculating its stability.
				3. Student can apply the concept of feedback in amplifier circuit.
				4. Learn to design oscillator of desired frequency.

				5. Gain experience in the problem finding and trouble shooting in electronics circuits consisting of diodes and transistors.
EE	IIIrd SEM	324354(25)	Electric Circuits	1. Students will learn about the different types of electrical sources and networks
				2. Students will have knowledge of converting a electrical circuit into graph and will be able to analyze the circuit graphically.
				3. Student will analyse circuits with ideal, independent, and controlled voltage and current sources
				4. Student will be able to find out current through or voltage across any branch of a given Electrical network using theorems.
				5. Students will learn about series and parallel resonance conditions in series and parallel circuits and its impact on network voltage and current magnitudes.
				6. Students will have knowledge of balanced and unbalanced poly phase circuits.
				7. Students will be able to analyze the behavior of non-sinusoidal waveforms
		324355(24)	Electrical Engg. Material	1. Understand the properties of conductors.
				2. Understand the properties of semiconductor.
				3. Understand the properties of insulator
				4. Students will have knowledge of Magnetic material.
				5. Students will be able to know the Optical Properties of Solids
		324356(24)	Electrical Power generation	1. Students must apply both mathematics and chemistry to understand and solve problems in this course.
				2. Students perform design type analyses and solve engineering problems.
				3. There are many aspects of contemporary issues addressed in this course, especially with regard to power plant environmental and sitting issues.
				4. Students will able to generate economic dispatch between generating units.
				5. Students will have a basic understanding of conversion of coal, oil, gas, nuclear, hydro, solar, geothermal, etc. energy to electrical energy.
				6. An ability to apply a multi-disciplinary approach to conceive, plan, design, and implementsolutions to electrical engineering problems in the field of energy and sustainability.
				7. Successfully apply advanced concepts of electrical power engineering to the analysis, design and development of electric systems, components, equipments or applications to meet desired needs of society professionally and ethically.
				8. Use advanced techniques, skills, and modern scientific and engineering software tools for professional practice
		324451(25)	Analog Electronics	1. An ability to apply knowledge of mathematics, science and engineering.
				2. An ability to design and conduct experiments, as well as to analyze and interpret data.
				3. To develop a clear understanding of transistor as an amplifier.
				4. To understand the working of amplifiers at low frequencies and study about the hybrid model.
				5. To know about the different amplifier configurations and the Millers theorem.
				6. To gain knowledge about transistors at high frequencies.
				7. An ability to work professionally in electronic systems areas including the design and analysis of such systems.
				8. To learn about the different configurations of power amplifiers and their applications.
				9. To understand the inadequacy of single stage amplifiers and learn about multistage amplifiers.
				10. To grasp the concept of feedback and learn about feedback in amplifiers, oscillators and their applications
		324452(24)	Electro Magnetic Theory	1. Compute electric field intensity for various charge distribution
				2. Compute Electric flux for various charge distribution
				3. Compute potential for different charge distributions.
				4. Compute solution of Laplace and Poisson's equations
				5. Compute magnetic field intensity and magnetic flux density using Ampere's circuital LawandStoke's theorem.
				6. Compute force and torque for various current carrying elements.
				7. Enlist Maxwell's equations for time varying fields and solve them for specific regular geometries
				1. Students will be able to analyze circuits using Kirchhoff's laws and design and conduct experiments using various elements, as well as to analyze and interpret data
				2. To develop the ability of understanding the application of network theorems in reducing complicated networks to simpler ones.

EE	IVth SEM	324453(25)	Network Analysis & Synthesis	3. Students should have the ability to demonstrate the application of Fourier transform and Laplace transform in networks.
				4. Explain and analyze the different types of network functions.
				5. To understand the different parameters of one port and two port networks.
				6. Derive interrelationship between various parameters.
				7. Analyze the stability of network function and interpret time domain behavior of networks from pole zero plots of network function.
				8. To develop the ability to identify and synthesize the impedance functions using various techniques of synthesis.
				9. An ability to design the low pass and high pass filters.
		324454(25)	Digital Electronics & Logic Design	1. Be able to design, build, test, troubleshoot, and evaluate digital circuits.
				2. Be able to utilize computer software such as Electronic Work Bench (Multisim).
				3. Be able to evaluate and revise designs as actual performance is reviewed.
				4. Be able to prepare a written report that effectively communicates the objective, the design procedure, the experimental results, and the conclusion for any project design.
		324455(24)	Electrical Power Systems	1. Student will be to calculate the resistance, inductance and capacitance of transmission line
				2. Student will be able to learn how to model the element in power system and able to carry out studies of load flow, transient stability,harmonics and other relevant studies.
				3. Student will be able to calculate the voltage regulation of line and analyze the voltage profile of the transmission line.
				4. Student will gain an understanding of VAR control using component to improve p.f,location of capacitor, operation of load tap changing can be examine.
				5. Student will be able to calculate the sag, tension and mechanical stress of a transmission line.
				6. Student will be able to learn different types of conductor and cable with its performance.
				7. Student will able to understand the effect of surges in line
		324456(24)	Electrical Measurements & Measuring Instruments	1. The students should be able to Measure low, medium & high Resistances using suitable bridges.
				2. The students should be able to determine the value of inductor and capacitor with the help of A.C. Bridge & they can draw phasor diagram of bridges.
				3. The students should be able to test and calibrate ammeter, voltmeter, and Wattmeter and energy meter.
				4. The students should be able to select proper instrument for measurement various Electrical elements.
EE	Vth Sem	324551(24)	Electrical Machines-II	1. Understand the energy, force and torque of single and multi-excited systems.
				2. Understand the construction, working principles of synchronous and three-phase induction machines
				3. Draw the equivalent circuit diagrams under various load conditions
				4. Analyze the load profile, voltage regulations and efficiency in various operating conditions
				5. Understand the needs and requirements of various types of machine operations like starting, speed control, tests etc.
		324552(24)	Microprocessor & Interfacing	1. Understand the basic architecture of Microprocessor 8085.
				2 .Understand various instructions and their application in programming.
				3. Understand memory organization and mapping
		324553(24)	Applied Numerical Analysis	1. Find acceptable approximate solutions when exact solutions are either impossible or time-consuming.
				2. Approximate a function using an appropriate numerical method for a given set of data.
				3. Develop problem solving skills.
				4. Devise alternate methods of solution better suited to the capabilities of computers..
				5. Describe difficulties that can arise because computers usually use finite precision, often non-decimal arithmetic.
		324554(24)	Integrated Circuits	1. On completion of this course, the students will have a thorough understanding of operational amplifiers with linear integrated circuits. Also students will be able to design circuits using operational amplifiers for various applications.

		324555(24)	Control System Engg.	1.By the end of this module, students will be able to use appropriate analytical tools to model and control a given physical system. Students can decide in advance if a given dynamical system is stable and also develop a controller according to the desired specifications
		324556(24)	Communication Theory	1. Acquire the generalize knowledge of communication system in the present scenario.
				2. Develop problem solving skills in complex communication networking.
EE	VIth Sem	324651(24)	Power System Analysis	1. Student should be able to make a one line representation of Power System.
				2. Student should be able to evaluate fault currents for different faults at different locations in Power System.
				3. Students should be able to identify cases of stable and unstable Power Systems.
		324652(24)	Electrical Machines -III	1. Transform three phase variables to two axis variables.
				2. Analyze the performance of single phase induction motor with the help of its equivalent circuit.
				3. Understand the construction and principles of operation of different types of special motors.
		324653(24)	Power Electronics	1. An ability to understand basic operation of various power semiconductor devices and passive components.
				2. An ability to understand the basic principle of switching circuits.
				3. An ability to analyze and design an AC/DC rectifier circuit.
				4. An ability to analyze and design DC/DC converter circuits.
				5. An ability to analyze DC/AC inverter circuit.
		324654(24)	Instrumentation Techniques	1. Student can understand the use of CT and PT as a protective and measuring device.
				2. Student would be able to select proper Transducer for measurement of various Electrical quantities
				3. Student would be able to find error and calibrate the instruments.
				4. Student can write programs for different processes using PLC.
		324655(24)	Principles of Digital Signal Processing	1. Analyze a given signal or system using tools such as Fourier transform and z-transform
				2. Analyze the various characteristics to know the property of a signal or a system
				3. Process signals to make them more useful.
				4. Design a signal processor (digital filter) for a given problem.
		324671(24)	Fibre Optics	1. Analyze a given optical fibre with different characteristics.
				2. Analyze the various characteristics to know the property of a signal or a system
				3. Know the components materials used for preparation of optical fibre.
				4. Design a economical Optical fibre for communication system.
EE	VIIth Sem	324731(24)	Switchgear & Protection	1. Design the relevant protection systems for the main elements of a power system.
				2. Analyze overcurrent, differential, and ratio protection devices and their application in a coordinated protection scheme.
				3. Understand the stability problems and clearing of faults to mitigate these problems.
		324732(24)	Modern Control System	1. Decide in advance if a given dynamical system is controllable and observable.
				2. Design state feedback controllers to change the evolution of a dynamical system of interest.
				3. Optimize the control system design to minimize the control energy spent or achieve control in minimum time.
				4. Complex dynamics of nonlinear systems
		324733(24)	Electrical Drives	1. Electric drive systems for different mode of operations.
				2. Operation of tractions.
				3. Speed control of DC and AC machines using Power Electronics.
				4. Design of ratings on the basis of heating and cooling.
		324734(24)	Energy Auditing and Management	Understanding basics of demand side management and mechanisms (technical, legal or financial) that influence energy consumption. Recognizing opportunities for increasing rational use of energy. Learning the basics of energy auditing with application on different sectors.

		324741(24)	Power Apparatus System	1. Describe Transmission system components. (Tower, accessories, conductor, sag etc). 2. Explain insulation coordination and surge protection. 3. Write about various grounding systems. 4. Correlate basic concept of reliability with Reliability of transmission and Distribution System.
EE	VIIIth Sem	324831(24)	High Voltage Engg.	1. Describe the various breakdown theories for gaseous, liquid and solid dielectric. 2. Describe the generating methods for high DC, AC, and impulse. 3. Describe the measuring methods for high DC, AC and impulse. 4. Understand the fundamentals of High Voltage Test Techniques
		324832(24)	Management Concepts & Techniques	1. Students can successfully design and execute project. 2. Students will be capable of understanding the correlation between physical ,market and human resources
		324833(24)	Installation Maintenance & Testing of Electrical Equipments.	1. How to install an electrical system? 2. Maintenance procedure of various static and rotating equipments and machines. 3.Testing of Electrical Equipments. 4. How to work when the line is live?
		324842(24)	Flexible A C transmission System	1. Make transformer connections for 12 pulse, 24 pulse and 48 pulse operation of voltage source converter. 2. Apply static var compensators in power systems for performance improvement. 3. Apply different methods of series compensation in power systems for performance improvement
		300817(25)	Non Conventional Energy Sources	I. To know the energy demand of world, nation and available resources to fulfill the demand II. To know about the conventional energy resources and their effective utilization III. To acquire the knowledge of modern energy conversion technologies IV. To be able to understand and perform the various characterization techniques of fuels V. To be able to identify available nonconventional (renewable) energy resources and techniques to utilize them effectively.

		322351(14)	Mathematics – III	1.After completion of this course the students will be able to apply Fourier series, Laplace transformation, Theory of complex variable, Partial differential equations and Random variable to Computer Science problems and solve them. 2. Hands on these Mathematical topics will make them equipped to prepare for higher studies through competitive examinations.
		322352(28)	Basic Electronics	1. Gain the knowledge of basics of semiconductor devices and their applications 2. Apply concepts of Junction theory in designing and solving basic circuits 3. Develop basic knowledge of PN junction diode, BJT and FET 4. Implement transistor based circuits that are used in IC technology
		322353(22)	Computational Science	1.After undergoing the course, Students will be able to understand fundamental design concepts, flowchart 2.Demonstrate a broad understanding of the role of computer science and computational methods 3.Demonstrate understanding of the theoretical basis of computer science 4.Demonstrate knowledge of computational problem solving strategies 5.Design and implement substantial pieces of software 6.Demonstrate understanding of the importance of theoretical scientific
		322354(22)	Problem Solving & Logic Building using C	1. Write C program for a given algorithm using modular approach. 2. Use data representation for the fundamental data types in C 3. Analyze problems and design algorithms in pseudo code. 4. Read, understand and trace the execution of programs written in C language 5. Design programs involving decision structures, loops, array and functions. 6. Use different data structures and create/update basic data files.
				1. To design web sites utilizing multiple tools and techniques

CSE	3rd sem	322355(22)	Computer Concepts & Web Technology	2. To demonstrate the ability to create dynamic pages that are easy to navigate and easy to update
				3. To utilize entry -level system analysis and design principles to solve business problems.
				4. To demonstrate the ability to apply testing, debugging, and troubleshooting skills
				5. To exhibit the ability to design and implement an internet database
				6. To create effective, reusable Perl scripts.
				7. Run programs in the Java Virtual Machine. Write Java applets.
		322356(28)	Digital Electronics & Logic Design	1. Acknowledge about the fundamentals of digital circuit design.
				2. Understand the operation of Latch circuits & Flip flops.
				3. Take interest to designing & develop ICs in VLSI industries.
				4. Learn operation of different Semiconductor Memories.
				5. Learn operation of finite state machines.
				6. Understand the operation of combinational circuits.
		322361(28)	Basic Electronics Lab	1. Gain the knowledge of basics of semiconductor devices and their applications
				2. Apply concepts of Junction theory in designing and solving basic circuits
				3. Develop basic knowledge of PN junction diode, BJT and FET
				4. Implement transistor based circuits that are used in IC technology
		322362(22)	Problem Solving & Logic Building using C Lab	1. Understand the basic terminology used in computer programming
				2. Write, compile and debug programs in C language.
				3. Design programs involving decision structures, loops and functions.
				4. Understand how to write and use functions, how the stack is used to implement function calls, and parameter passing options.
				5. Create programs that measure or simulate performance and use them to analyze
				6. Program with pointers and arrays, perform pointer arithmetic, and use the
		322363(28)	Digital Electronic and Logic Design Lab	1. Students will be able to build and test a variety of circuits through the use of simulation software.
				2. Students will be able to apply concepts of mathematical symbols to communicate concepts using different number systems.
				3. Students will be able to Create a simple logic design from basic gates
				4. Students will be able to Create Boolean Expressions, logic circuit diagrams or truth tables from information provided in the solution of design problems.
				5. Students will be able to design and simulate memory element like flip-flops and registers.
				6. Student will be able to design and simulate counters.
		322364(22)	Web Technology Lab(HTML / DHTML/CSS/XML)	1.To design web sites utilizing multiple tools and techniques
				2.To demonstrate the ability to create XML for storing and transferring data.
				3.To create the web page that uses the AJAX concept.
				4.To demonstrate the ability to apply testing, debugging, and troubleshooting skills
				5.To exhibit the ability to design database
				6.To create Perl scripts and embed it with Unix and HTML
				7.Implement client server programs.
		322365(46)	Value Education	1. The students will get an idea of the importance of education with why, what &
				2. To impart students with an understanding of fundamental humanitarian viewpoint
				3. To provide the knowledge about whole existence and its impact on values.
				4. To bring the awareness about life long exercise so that they can fulfill their responsibility towards themselves, the family, the society, the planet.
		322451(14)	Computational Mathematics	1. Be aware of the use of numerical methods in modern scientific computing,
				2. Be familiar with calculation and interpretation of errors in numerical methods,
				3. Be familiar with numerical solution of ordinary differential equations
				4. Be familiar with numerical integration and differentiation
				5. Be familiar with numerical interpolation and approximation of functions,
				6. Be familiar with finite precision computation
		[illegible]	[illegible]	1. Able to apply mathematical logic and Boolean algebra in switching circuits & logic
				2. Familiar with set theory, relation and functions.
				3. Familiar with algebraic structures, graph theory and combinatorics.

		322452(14)	Discrete Structures	4. Able to solve problems in various fields in computer science, specially networking
				5. To introduce a number of discrete mathematical structures found to be serving as
				6. Course focuses on how discrete structures actually helped computer engineers to
		322453(22)	Data Structures	1. Have a comprehensive knowledge of the data structures and algorithms on which file structures and data bases are based.
				2. Understand the importance of data and be able to identify the data requirements for an application.
				3. Have in depth understanding and practical experience of algorithmic design and implementation.
				4. Have practical experience of developing applications that utilize databases.
				5. Understand the issues involved in algorithm complexity and performance
		322454(22)	Computer Systems Architecture	1. To be able to describe the basic hardware components of a computer system.
				2. To be familiar with the binary and hexadecimal number systems including computer arithmetic.
				3. To be familiar with the functional units of the processor such as the register file and arithmetic-logical unit.
				4. Be familiar with the basics of systems topics: parallel, pipelined, superscalar, and RISC/CISC architectures.
				5. To be familiar with the representation of data, addressing modes, an instruction sets.
				6. To be able to understand different algorithms for integer and floating point numbers.
		322455(22)	Object Oriented Concepts & Programming using C++	1. Student will understand the concepts of variables, data Types (including strings and arrays) and Expressions
				2. Understand algorithmic thinking and apply it to programming.
				3. Write clear, elementary C++ programs and understand problem-solving techniques
				4. Read, understand and trace the execution of programs written in C++ language.
				5. Code C++ control structures (if, if/else, switch, while, do/while, for) and use built-in
				6. Understand and manipulate arrays and pass arrays to functions, pointers.
CSE	4th Sem	322456(22)	Operating System	1. To learn what is operating system and how it makes computers work.
				2. To know how operating system manages complexity through appropriate abstraction of CPU, memory, files, semaphores etc.
				3. To get knowledge about different components of operating system like Process Management, Concurrency mechanisms.
				4. To get knowledge about Deadlock handling, Memory Management techniques
				5. To get knowledge about Virtual Memory, File System
				6. To learn what is Secondary Storage Management, Security & protection etc.
		322461(22)	Data Structures Lab	1. Have a comprehensive knowledge of the data structures and algorithms on which file structures and data bases are based.
				2. Understand the importance of data and be able to identify the data requirements
				3. Have in depth understanding and practical experience of algorithmic design and implementation.
				4. Have practical experience of developing applications that utilize databases.
				5. Understand the issues involved in algorithm complexity and performance
		322462(22)	Computer Hardware Maintenance Lab	1. The student will be able to: (Knowledge based) explain how a PC works, and understand the relationship between hardware and software.
				2. Classify and explain the function of different computer hardware components
				3. Understand purpose and functions of an operating system (OS);
				4. Understand the purpose and functions of the computer peripherals;
				5. Understand diagnostic procedures and troubleshooting techniques to personal computers.
				6. Portable devices, operating systems and computer peripherals. (Skills) install,
				7. Install, configure, optimize and upgrade the portable computers; install, configure,
				1. Design, implement, test, debug, and document programs in C++.

		322463(22)	Object Oriented Concepts Programming using C++ Lab	2. Create a program that measures or simulates performance and use it to analyze behavior.
				3. Map an object-oriented program design into the more primitive data structures and program organization of C.
				4. Use classes, constructors, destructors, inheritance, and operator overloading and the Standard Template Library in C++
				5. Object modeling in C++.
				6. Real life problem formulation in terms of objects and classes.
		322464(22)	GUI programming (VB/Gambus/ Other tools)	1. Understand the fundamentals of visual programming
				2. Be familiar with the essential techniques to build windowsapplications using visual
				3. Use practical problems to illustrate applicationbuilding techniques.
				4. Take advantages of the many new capabilities of building applications in graphical environment.
				5. Design user-friendly interfaces and write maintainable code.
				6. Design Visual Basic.NET programs that meet commercial programming standards
		322465(46)	Health , Hygiene and Yoga	1 . understand the importance of health.
				2. got knowledge insight into the hygiene aspect & quality of life.
				3. understand the concepts of various medical therapy.
				4. practice the various yogasans.
				5. got knowledge about common diseases and its cure through yagasans and
				6. developed concentration through various methods.
CSE	5th Sem	322551(22)	Microprocessor and Interfaces	1. The student will be able to analyze, specify, design, write and test assembly
				2. The student will be able to select an appropriate 'architecture' or program design to apply to a particular situation; e.g. an interrupt-driven I/O handler for a responsive real-time machine. Following on from this, the student will be able to design and build the necessary programs.
				3. Assembly language programming.
				4. Identify a problem where microprocessor interfacings kills can be applied.
				5. Students will understand different commands on MPI and its usage
				6. Working in low level language
		322552(22)	Analysis and Design of Algorithms	1. Prove the correctness and analyze the running time of the basic algorithms for those classic problems in various domains.
				2. Analyze the complexities of various problems in different domains.
				3. Apply the algorithms and design techniques to solve problems.
				4. They will be Familiar with mathematical preliminaries required to analyze and design computer.
				5. They will be able to proof correctness of algorithms using inductive proofs and
				6. They Will be Able to use tools and techniques for analysing computer algorithms.
		322553(22)	Programming in Java	1. Be able to construct finite state machines and the equivalent regular expressions .
				2. Be able to prove the equivalence of languages described by finite state machines and regular expressions
				3. Be able to construct pushdown automata and the equivalent context free grammars.
				4. Be able to prove the equivalence of languages described by pushdown automata and context free grammars.
				5. Be able to construct finite automata
				6. Be able to construct Turing machines and Post machines.
		322554(22)	Theory of Computation	1. Be able to construct finite state machines and the equivalent regular expressions .
				2. Be able to prove the equivalence of languages described by finite state machines
				3. Be able to construct pushdown automata and the equivalent context free
				4. Be able to prove the equivalence of languages described by pushdown automata and context free grammars.
				5. Be able to construct finite automata
				6. Be able to construct Turing machines and Post machines.
		322555(22)	Unix & Shell Programming	. Students will be able to Work confidently in Unix/Linux environment
				2. Students will able to write Bourne, Korn, C shell scripts
				3. Students will understand different commands on Unix and its usage
				4. Students will able to work on sed, awk and grep command line utilities
				5. Students will understand different kernel algorithms and its usage
				6. Students will understand different flavors' of UNIX and their importance
				1. Will be able to describe the basic concepts of RDMBS and relational data model
				2. Be familiar with the relational database theory & be able to write relational algebra

		322555(22)	Database Management System	3. Understand DML, DDL and will be able to construct queries using SQL by knowing
				4. Be familiar with the basic issues of transaction, its processing and concurrency control
				5. Be familiar with basic database storage structures and access techniques: file and page organizations, indexing methods including B-tree, and hashing.
				6. Will be able to design and implement the database system of any organization
		322561(22)	Microprocessor and Interfaces Lab	1. The student will be able to analyze, specify, design, write and test assembly language programs of moderate complexity
				2. Knowledge about Basis programming language, Computer system Architecture, Digital logic design.
				3. Assembly language programming.
				4. Identify a problem where microprocessor interfacings kills can be applied.
				5. Students will understand different commands on MPI and its usage
				6. Working in low level language
		322562(22)	Programming in Java Lab	1. Can develop solutions for a range of problems using object-oriented programming.
				2. Be able to implement, compile, test and run Java programs comprising more than
				3. Demonstrate the ability to use simple data structures like arrays in a Java program
				4. They will be Familiar with implementation of a variety of basic control structures including selection and repetition.
				5. They will be familiar with classes and objects in a tiered architecture (user interface, controller, and application logic layers); primitive and reference data types including composition. They Will be Able to create packages and interfaces using java program and to implement Exception Handling in java and also to use graphical user interface and Event Handling in java.
		322564(22)	DBMS Lab	1. Performing database operations (create, update, modify, retrieve, etc.,) using front-end tools like D2K/Gambas/PhP/Servlet/JSP
				2. Creating , Modify database Tables and manipulate data in the Tables
				3. Performing database operations in a procedural manner using pl/sql
				4. Design and implement a small database project using RDBMS to understand the concept of a database
				5. Design and Develop applications like banking, reservation system, etc.
				6. Design and implement a small database project using RDBMS to understand the
CSE	6th Sem	322651(22)	Computer Networks	1. will enhanced base of knowledge in current and reflective practice necessary to support a career in Computer Networking at advanced professional level.
				2. Understanding concept of local area networks, their topologies, protocols and
				3. Understanding the different protocols, software, and network architectures
		322652(22)	Compiler Design	1. to understanding the fundamental principles in compiler design ·
				2. To provide the skills needed for building compilers for various situations that one may encounter in a career in Computer Science
		322653(22)	Enterprise Resource Planning	1. will have the knowledge the basics of ERP and business modules of ERP ·
				2. To understand the key implementation issues of ERP ·
				3. To be aware of some popular products in the area of ERP ·
				4. To appreciate the current and future trends in ERP
		322654(22)	Software Engineering & Project	1. will be able to understand about the different software processes & their uses. ·
				2. To introduce ethical and professional issues and to explain why they are
		322655(22)	Computer Graphics	1. will be able to transformational geometry -- utilizing transforms to positioning
				2. Rendering of complex models -- accurately drawing illustrations of complex objects with arbitrary camera and light source. Curves and surfaces -- methods for rendering and shading curved objects
		322661(22)	Computer Networks Laboratory	1. will be Able to identify and apply basic theorems and formulae for the information-theoretic basis of communication.,
				2. Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies
		322662(22)	Software Engineering & Project Management Laboratory with Minor Project	will be able to develop some basic level of software architecture/design,Applying standard coding practices, Identification and implementation of the software metrics.

		322663(22)	Computer Graphics Laboratory	1. Know and be able to describe the general software architecture of programs that use 3D computer graphics,
				2. Know and be able to discuss hardware system architecture for computer graphics
		322664(22)	Advanced Java Programming Laboratory	1. They will be familiar with classes and objects in a tiered architecture (user interface, controller, and application logic layers);
				2. primitive and reference data types including composition.
		300665 (76)	Managerial Skills	1. The course is introduced to develop managerial skills tremendously and enrich the abilities to enable one to meet the challenges associated with different job levels.
				2. Managerial skills are essential for overall professional development of an individual apart from gaining technical knowledge in the subject.
CSE	7th Sem	322731(33)	Mobile Computing and Application	1. to get knowledge of the fundamental design principles & issues in cellular &
				2. Will be able to understand the basic features of cellular-mobile communication systems and digital radio system.
				3. Will be able the know technology for working of mobile devices, their advantages and disadvantages and emerging problems.
		322732(22)	Parallel processor and computing	1. Will be able to develop structural intuition of how the hardware and the software work, starting from simple systems to complex shared resource architectures. and get a broad understanding of parallel computer architecture and different models for parallel computing
				2. Will be able understand concepts related to memory consistency models, cache coherence, interconnection networks, and latency tolerating techniques.
				3. get knowledge about current practical implementations of parallel architectures.
				4. will be able to learn how to design parallel programs and how to evaluate their execution
		322733(22)	Network Programming	1. will be able to develop the necessary skills for developing robust & high performance scalable network applications.
				2. get the knowledge of raw sockets and socket programming. and understand simple network management protocols and basics of TCP &UDP sockets.
		322734(22)	Cryptography and Network Security	1. will understand the principles and practices of cryptography and network security
				2. will understand the practical applications that have been implemented and are in use to provide network security
		322746(22)	Cloud computing	1. will get knowledge of Personal computing networked computing and expected to revolutionize the business is done.
				2. 2. This course covers the theoretical and practical aspects of cloud computing. At the end of the course, student will be able to appreciate the cloud computing paradigm, recognize its various forms and able to implement some cloud computing features.
		322761(22)	Soft Computing Lab	1. To introduce students tools and techniques of Soft Computing;
				2. To develop skills thorough understanding of the theoretical and practical aspects of Soft Computing.
				3. Introduce students to fuzzy systems, fuzzy logic and its applications
				4. To familiarize with neural networks and learning methods for neural networks;
				5. To introduce basics of genetic algorithms and their applications in optimization and planning;
		322762(22)	Network Programming Lab	1. After successful completion of the course, students will be Familiar with
				2. They will be Familiar with Design/performance issues in local area networks and wide area networks
				3. They will be Familiar with basics of Socket and Socket programming.
				4. They will be Familiar with contemporary issues in networking technologies
		322763(33)	Android Lab	1. will be able to Understand the working of Android applications
				2. To learn how to create GUI and handle events in Android applications.
				3. Understanding development of applications with data storage, APIs and Databases
		322764(22)	Minor Project	1. Will be able to understand assumptions, theses, and arguments that exist in the
		322831(22)	Artificial Intelligence & Expert Systems	1. will be able to undrstand AI towards problem solving, inference, perception, knowledge representation and learning.
				2. Investigate applications of AI techniques in intelligent agents, expert systems, artificial neural Networks and other machine learning models.
				3. Experiment with a machine learning model for simulation and analysis.
				4. Explore the current scope, potential, limitations, and implications of intelligent systems.

				5. To have a basic proficiency in a traditional AI language including an ability to write simple to intermediate programs and an ability to understand code written in that language.
CSE	8th Sem	322832(22)	Data mining and warehousing	1. Will be able to understand the overall architecture of a data warehouse. And the different data mining models and techniques will be discussed in this course.and evaluate different models used for olap and data pre-processing;
				2. design and implement systems for data mining and evaluate the performance of different data mining algorithms;
				3. propose data mining solutions for different applications.
				4. differentiate online transaction processing and online analytical processing
		322833(22)	Cyber Security	1. Will be able to understand principles of web security
				2. will be able tounderstand key terms and concepts in cyber law, intellectual
				3. Discuss Issues for creating Security Policy for a Large Organization.
		300813(33)	Biometrics	1. Will be able to study the state-of-the-art in biometrics technology can explore
				2. Will learn and implement various biometrics technologies using advanced algorithm.
		322847(22)	Internet and Multimedia Technology	1. Will be able to understand the technical details of common multimedia data
				2. will be able to understand the technical details of JPEG and MPEG families of standards.
				3. will be able to understand the principles and technical details of several wired and wireless networking protocols.
				4. will be able to understand and describe technical aspects of popular multimedia web applications including VoD and VoIP.
		322861(22)	Artificial Intelligence & Experts Systems Lab	1. Get knowledge of machine learning model for simulation and analysis.
				2. And Explore the current scope, potential, limitations, and implications of intelligent systems.
				3. will be able to understand the basic proficiency in a traditional AI language including an ability to write simple to intermediate programs and an ability to understand code written in that language.
		322862(22)	Network Security Lab	1. Will able to understand the fundamentals of Cryptography through practical implementation and implement standard algorithms used to provide confidentiality, integrity and authenticity.
				2. will be able to understand the various key distribution and management schemes.
				3. will be able to understand how to use cutting edge simulation tools
				4. will be able to design security applications in the field of Information technology.
		322863(22)	Software Technology Lab	1. Will be able to design and implement static and dynamic website
				2. will be able to learn how to create a simple& advanced web page using html
				3. get knowledge of JavaScript procedures and usage of regular expressions in JavaScript.
		322864(22)	Major Project	To be able to analyse problem to develop software.
				2. To be able to design and develop solution for given problem.
				3. To be able to investigate complex problem.
				4. To learn team work.
				5. To be able to manage projects and finance problem.
				6. To be able to understand life-long learning in the broadest context of technological

		328351(14)	Mathematics – III	1.Define (mathematically) Unit step, Unit impulse, Laplace transforms, its properties,
				2. Solve difficult problems using theorems of complex analysis and apply Residue theorem to evaluate real integrals
				3. Able to evaluate and interpret Karl Pearson's correlation coefficient and Spearman's correlation coefficient and also find equation of regression line and use them where appropriate.
				4. Use special functions in communication system, non linear wave propagation, electromagnetic theory, signal processing etc.
				5. Know the importance of PDEs in modern communication technology and many numerical simulations.
				6. Solve wave equation, telephone equation, telegraph equation, radio equation and vibrations of membranes.
		328352(28)	Probability and Random Variables	1. Students should be able to define probability and interpret probability by modeling sample spaces.
				2. To identify and formulate fundamental probability distribution and density functions, as well as functions of random variables.
				3. Students are able to understand and analyze temporal and spectral characteristics of random processes.
				4. Get the overview how various types of noise can be represented mathematically

ETC	III	328353(28)	Electronic Devices and Circuits	1. The student is able to gain complete knowledge of transport phenomena in semiconductor.
				2. Students are able to design practical circuit using diodes.
				3. Students understand the concepts of DC analysis of BJT.
				4. Students get complete knowledge on JFET and MOSFET
		328354(28)	Network Analysis & Synthesis	1. Students are able to apply laplace transform in analyzing the circuits.
				2. To evaluate properties & apply network theorems on various networks.
				3. To evaluate two-port parameters of a given network.
				4. Synthesize given network using foster and cauer forms.
		328355(28)	Industrial Instrumentation	1. Students will be acquainted with basics of measurement system and functioning of CRO.
				2. Students are able to acquire knowledge and overview of Transducers.
				3. Students are familiar with industrial applications of Transducers.
		328356(28)	Digital Logic Design	1. Students will be able to gain knowledge about various codes, employ Boolean algebra and circuit minimization techniques.
				2. Students gain knowledge to interpret the operation of logic circuit such as adders, subtractors, registers and counters. multiplexers, flip-flops, shift
				3. Students will be able to design asynchronous, synchronous sequential circuits and finite state machines.
				4. Gain knowledge about various logic families and select a suitable one for a specific application.
ETC	IV	328451(28)	Numerical Analysis Using C	1. Student will learn the basic concepts of C programming language Implement conditional statements Declaring and defining functions, strings and structures.
				2. The student should be able to find out the numerical solutions of algebraic, transcendental and simultaneous linear equations.
				3. Use the numerical differentiation and integration and solve engineering problems which are characterized in the form of ordinary differential equations.
		328452(28)	Analog Communication	1. The student will be able to draw spectral plots and visualize signals in frequency domain.
				2. Understand the amplitude modulation process and effect of noise in AM systems.
				3. Understand the angle modulation process and effect of noise in FM/PM systems.
				4. Get the overview of transmitters and receivers for both AM and FM systems.
		328453(28)	Analog Electronics	1. Student is able to understand ac analysis of BJT amplifier at Low and High frequencies.
				2. Student gets knowledge of multistage amplifier and power amplifier.
				3. The concepts of feedback used in amplifier is understood.
				4. Student is able to understand the concepts of Oscillator.
		328454(28)	Microprocessor and Interfaces	1. Gain knowledge about architecture of general purpose microprocessor.
				2. Students will be able to describe physical and logical configuration of memory.
				3. Demonstrate the ability to program the 8085 microprocessor.
				4. Interface the 8085 microprocessor to the outside world.
		328455(28)	Signals and Systems	1. The student will be able to understand the classification of signals and systems.
				2. Gain knowledge about the frequency domain analysis of continuous time and discrete time signals.
				3. Use the Z-transform techniques to solve the system equations.
		328456(28)	Electromagnetic Fields & Transmission Lines	1. Students will be able to learn and apply concepts of orthogonal co-ordinate system and vector calculus to solve electric and magnetic field problems.
				2. Know concepts about electric and magnetic fields; electromagnetic wave existence and its propagation in different medium.
				3. Gain knowledge about signal transmission, parameters associated with transmission line; measure of various losses and techniques to reduce those losses.
		328551(28)	Linear Integrated Circuits &Applications	1. Gain knowledge about Differential amplifier and operational amplifier.
				2. Designing circuits for op-amp applications.
				3. Gain knowledge about A/D and D/A converters.
				4. Get knowledge about various types of voltage regulator.
				5. Understand PLL circuits and multiplier circuits
		328552(28)	Data Structures and Programming with C++	1. Understand algorithmic thinking and apply it to programming.
				2. Understand problem-solving techniques.
				3. Understand object-oriented concepts and how they are supported by C++.
				4. Gain some practical experience of C++
				1. To study uniform plane wave propagation in different media and wave polarization
				2. To study guided wave propagation in metallic wave guides

ETC	V	328553(28)	Antennas and Wave Propagation	3. To study radio wave propagation
				4. To study the concept of radiation and analyze radiation characteristics of a current element and dipole
				5. To study antenna fundamentals and antenna arrays: uniform and tapered and their design
				6. To study some practical antennas like Rhombic, Loop, Yagi and microstrip antenna.
		328554(28)	Digital Communication	1. Design digital communication systems, given constraints on data rate, bandwidth, power, fidelity, and complexity.
				2. Analyze the performance of a digital communication when additive noise is present in terms of the signal-tonoise ratio and bit error rate.
		328555(28)	Advanced Microprocessor and Interfacing	1. Gain knowledge about architecture of advance microprocessors.
				2. Demonstrate the ability to program the 8086 microprocessor.
				3. Interface the 8086 microprocessor to the outside world.
				4. Understand multiprocessor systems and learn about co-processors
		328556(28)	Automatic Control System	1. Student is able to do the mathematical modeling of control system.
				2. Student is able to analyse the performance of control system.
				3. Student is able to improve the performance of control system
ETC	VI	328651(28)	Digital Signal Processing	1. Synthesize discrete time signals from analog signals.
				2. Use time domain and frequency domain analysis tools.
				3. Apply forward and reverse transformations.
				4. Visualize various applications of DSP and explore further possibilities.
				5. Design IIR and FIR filters.
				6. Excel in H/W and S/W environment of Digital Signal Processing
		328652(28)	Electronic Circuit Design	1. To understand electronics waveshaping circuits.
				2. The student will be able to understand timer IC and Its Applications and Design concepts
				3. Student will be able to understand Designing concepts of Active filters.
		328653(28)	Microcontroller & Embedded	1. To understand Microcontroller 8051 its architecture and its instruction set.
				2. Gain knowledge about Counter/timer and interrupts in 8051 Microcontroller and Programming concepts.
				3. Students will be able to do serial communication programming and gain knowledge of serial communication.
				4. Students will be able to understand interfacing Microcontroller 8051 with devices.
		328654(28)	VLSI Design	1. Students are expected to understand CMOS fabrication details.
				2. Students are expected to understand schematic, layout of combinational circuits.
				3. Students are expected to understand schematic, layout of sequential circuits.
				4. Students are expected to understand VHDL programming concepts.
		328655(28)	Information Theory & Coding	1. Students will be able to understand the concept of various Source Coding Techniques and Channel Coding Techniques.
				2. Students will be able to analysis various error control coding techniques.
				3. Students will be able to understand BCH Code and RS Code.
				4. Students will get the knowledge of convolutional Code.
		328672(28)	Operating System	1. The student will be able to learn the various functionalities of OS.
				2. The student will be able to use the various algorithms and techniques to perform the various jobs performed by operating systems
				3. The student will be able to get the overview of how operating system is designed.
				4. The student will be able to demonstrate how various resources are managed by operating system
		328731(28)	MicrowaveCommunicationand Engineering	1. Understandthe reasonwhyTEMwave are impossible ina Waveguide.
				2. Understandthe workingof Microwave Tubes.
				3. Understandthedifferentmodes ofoperationofGunn Diodes.
				4. Understandmicrowave components suchas Tee Junction and Directional Couplers.
				5. Understanddesigning andtransformation ofMicrowave Filters.
		328732(28)	Computer Networks	1. Students will be able tounderstandthe workingofinternetbased onOSImodelandTCP/IPprotocolsuite.
				2. Students will be able toanalyze practicalrequirements ofLAN onthe basis ofvarious topologies,signalling techniques and various interfaces.
				3 Students will have deepunderstandingofvarious protocols usedatData LinkLayerandwill be able toanalyze the advantages and disadvantages ofvarious available protocols forflowanderrorcontrol.
				4. Students will be able toanalyze various Ethernetstandards ,otherstandards andwill be able tochoose anappropriate standard accordingtorequirement ofLAN.
				5. Students will be able toidentifyvarious internetworkingdevices andformation ofHeaders ofIPandTCP.

				6. Students willgetidea about various Applicationlayerfunctions and some protocols along with switching techniques and ATM
ETC	VII	328733(28)	Wireless Communications	1. Students will have idea about th egrowth in mobile communications tha tgives rise to technological improvements.
				2. Students will be able to visualize the use of frequency reuse to increase the systems capacity and also other designing aspects.
				3. Students will be able tounder stand the architecture of the GSM and mechanism to support mobility of the GSM terminals.
				4. Students will see how modulation techniques are used to transport the message signal viaa radio channel with best possible equality with minimum radio spectrum.
				5. Studentswill be ableto understand various transmission problems andtheircounter measures.
		328734(28)	Management Concepts & Techniques	1. Define the concept of management and discuss why organizations are needed,whymanagers are necessary,and why management is a challenge.
				2. Identify the essential characteristics of decision making and indicate the range and types of decisions a manager is asked to make.
				3. Analyze the leadership function, recognizing leadership as the relationship between a supervisor and subordinatesinan organizational environment.
				4. Recognize the symptoms of organizational conflict, describe its sources, and discuss the manager's role in conflict management.
				5. Recognize the link between planning and controlling ,and the various means by which managers measure and compare performance to objectives.
				6. To understand and differentiate between the various types of organizational structures and patterns.
		328744(28)	Radar and Navigational Aids	1. Tobecomefamiliarwithfundamentals ofRadar.
				2. Togainindepthknowledge aboutthe differenttypes ofRadarandtheiroperation.
				3. NeedforsignaldetectioninRadarandvarious Radarsignal detectiontechniques.
				4. TobecomefamiliarwithRadioNavigationtechniques
ETC	VIII	328831(28)	Advanced Communication Systems	1. Understand the basic concepts of Satellite.
				2. Able to calculate the complete C/N ratio of satellite link design.
				3. Able to understand multiple access techniques related to satellite.
				4. Able to understand the concepts of optical fiber communication.
				5. Student gains knowledge how optical signal is transmitted and received
				6. Student gets an insight into SONET/SDH networks.
		328832(28)	Consumer Electronics	1. Students will be able to understand the concepts of television.
				2. Students gain a deep insight into concepts of color television.
				3. Students will be able to know about various microphones and also optical recording technique.
				4. Students learn the design aspect of PA system.
				5. Students will be able to get complete knowledge of working of microwave oven, washing machine and in car computers
		328833(28)	Power Electronics	1. Students will be able to understand the controlled and uncontrolled rectifications.
				2. Students will be able to understand phase control operation of different power electronics devices.
				3. Students will be able to understand mechanism of invertors and choppers.
				4. Students will be able to understand mechanism of cyclo converters and AC voltage controllers.
		328847(28)	Artificial Intelligence & Expert Systems	1. Student will have ability to understand and define different AI problem and apply suitable problem solving technique.
				2. Student will have ability to define the heuristics and apply them for solving complex problem with heuristic based search techniques.understanding of different
				3. Student will develop an understanding of game playing techniques
				4. Student will have understanding of different knowledge structure and inference mechanism with ability to apply them in intelligent solutions of complex problem .
				5. Students will develop skills needed for processing of natural language at syntactic and semantic level.
				6. Student will understand the existence of uncertainty in problem solving and how mathematical /statistical models are used to overcome these problems.
				7. Students will understand planning system and different types of planning required for problem solving process
				8. Student will be able to understand working of Expert system.
				9. Student will have fundamental concept of Artificial Neural Networks and Fuzzy Logic.

Mechanical	3rd	337351(14)	Mathematics-III	1.define Fourier series including half range series, Harmonic analysis and variety of its applications.
				2.define (mathematically) Unit step, Unit impulse, Laplace transforms, its properties, Inverse and applications to solve ordinary differential equations.
				3.form and solve by direct integration method Linear equation of first order including Homogeneous and Non-homogeneous Linear
				equations and also method of separation of variables.
				4.solve difficult problems using theorems of complex analysis and apply Residue theorem to evaluate real integrals.
				5.understand discrete and continuous probability distribution and be able to find mean and standard deviation and use the Uniform distribution
		337352(37)	Machine Drawing	1.After going through this course, the student shall be able to understand the drawings of mechanical components and their assemblies
				2.along with their utility for design and development of mechanical system.
				3.Work effectively with engineering and science teams as well as with multidisciplinary designs.
				4.Skillfully use modern engineering tools and techniques such as CAD- CAM softwares for mechanical engineering design, analysis and application
		337353(37)	Material Science &Metallurgy	1.Acquire knowledge and hands-on competence in applying the concepts of material science in the design and development of mechanical system
				2.Demonstrate creativeness in designing new systems components and processes in the field of engineering .
				3.Identify, analysis, and solve mechanical engineering problems useful to the society.
		337354(37)	Mechanics of Solids – I	1.Apply knowledge of mechanics of deformable body for understanding, formulating
				2.Acquire knowledge and hands-on competence in applying the concepts mechanics
				3.Demonstrate creativeness in designing new systems components and processes in
				4.Identify, analysis, and solve mechanical engineering problems useful to the society.
				5.Work effectively with engineering and science teams as well as with multidisciplinary designs.
		337355(37)	Engineering Thermodynamics	1.Apply knowledge of classical thermodynamics for formulating and solving engineering problems.
				2.Acquire knowledge and hands-on competence in applying the concepts of thermal sciences in the design and development of mechanical systems.
				3.Demonstrate creativeness in designing new systems components and processes in the field of engineering in general and mechanical engineering in particular.
				4.Identify, analysis, and solve mechanical engineering problems useful to the society.
				5.Work effectively with engineering and science teams as well as with multidisciplinary designs.
				6.Skillfully use modern engineering tools and techniques for mechanical engineering design, analysis and application.
				7.To continue the study of the applied thermodynamics.
		337356(37)	Mechanical Measurement &Metrology	1.Acquire knowledge and hands-on competence in applying the concepts of measurement and metrology in the design and development of mechanical systems
				2.Demonstrate creativeness in designing new systems components and processes in the field of engineering.
				3.Work effectively with engineering and science teams as well as with multidisciplinary designs.
				4.Skillfully use modern engineering tools and techniques for mechanical engineering design, analysis and application.
		337451(37)	Fluid Mechanics	1.Apply knowledge of Fluid Mechanics formulating and solving engineering problems.
				2.Acquire knowledge of fluid mechanics for the design and development of mechanical systems.
				3.Demonstrate creativeness in designing new systems components and processes in the field of engineering in general and mechanical engineering in particular.
				4.Identify, analysis, and solve mechanical engineering problems useful to the society.
				5.Work effectively with engineering and science teams as well as with multidisciplinary designs.
				6.Skillfully use modern engineering tools and techniques for mechanical engineering design, analysis and application.
				7.Develop fundamentals to continue the study of the advance subject fluid machinery, Heat and mass transfer etc.

Mechanical	4th	337452(37)	Mechanics of Solids – II	1.Apply knowledge of mechanics of deformable body for understanding, formulating and solving engineering problems.
				2.Acquire knowledge and hands-on competence in applying the concepts mechanics of solid in the design and development of mechanical systems.
				3.Demonstrate creativeness in designing new systems components and processes in the field of engineering in general and mechanical engineering in particular.
				4.Identify, analysis, and solve mechanical engineering problems useful to the society.
				5.Work effectively with engineering and science teams as well as with multidisciplinary designs.
		337453(37)	Applied Thermodynamics	1.Apply knowledge of classical thermodynamics for formulating and solving engineering problems.
				2.Acquire knowledge and hands-on competence in applying the concepts of thermal sciences in the design and development of mechanical systems.
				3.Demonstrate creativeness in designing new systems components and processes in the field of engineering in general and mechanical engineering in particular.
				4.Identify, analysis, and solve mechanical engineering problems useful to the society.
				5.Work effectively with engineering and science teams as well as with multidisciplinary designs.
				6.Skillfully use modern engineering tools and techniques for mechanical engineering design, analysis and application.
		337454(37)	Kinematics of Machines	1.Apply knowledge of Kinematics of machine for understanding, formulating and solving engineering problems.
				2.Acquire knowledge and hands-on competence in applying the concepts kinematics of machine in the design and development of mechanical systems.
				3.Demonstrate creativeness in designing new systems components and processes in the field of engineering
				4.Identify, analysis, and solve mechanical engineering problems useful to the society.
				5.Work effectively with engineering and science teams as well as with multidisciplinary designs.
		337455(37)	Numerical Analysis & ComputerProgramming (C & C++)	1.Apply knowledge of numerical analysis for understanding, formulating and solving engineering problems.
				2.Acquire knowledge and hands-on competence in applying the concepts of Numerical Analysis and Computer Programming in the analyssis of mechanical system
				3.Identify, analysis, and solve mechanical engineering problems useful to the society.
				4.Work effectively with engineering and science teams as well as with multidisciplinary analysis.
		337456(37)	Manufacturing Science – I	1.Acquire knowledge and hands-on competence in applying the concepts of manufacturing science in the design and development of mechanical systems
				2.Demonstrate creativeness in designing new systems components and processes in the field of engineering in general and mechanical engineering in particular
				3.Work effectively with engineering and science teams as well as with multidisciplinary designs.
				4.Skillfully use modern engineering tools and techniques for mechanical engineering design, analysis and application.
		337551(37)	Machine Design I	1.Apply knowledge of machine design for understanding, formulating and solving engineering problems.
				2.Acquire design
				3.Demonstrate creativeness in designing new systems components and processes in the field of engineering in general and mechanical engineering in particular.
				4.Identify, analyze, and solve mechanical engineering problems useful to the society.
				5.Work effectively with engineering and science teams as well as with multidisciplinary designs.
		337552(37)	Turbo Machinery	1.Apply knowledge of turbo machinery for understanding, formulating and solving engineering problems.
				2.Acquire knowledge and hands-on competence in the design and development of mechanical systems.
				3.Identify, analysis, and solve mechanical engineering problems useful to the society.
				4.Work effectively with engineering and science teams as well as with multidisciplinary designs.
				1.Apply knowledge of Dynamics of machine for understanding, formulating and solving engineering problems.

		337553 (37)	Dynamics of Machines	2.Acquire knowledge and hands-on competence in applying the concepts Dynamics of machine in the design anddevelopment of mechanical systems.
				3.Demonstrate creativeness in designing new systems components and processes in the field of engineering
				4.Identify, analyze and solve mechanical engineering problems useful to the society.
				5.Work effectively with engineering and science teams as well as with multidisciplinary designs.
Mechanical	5th	337554 (37)	Fluid Machinery	1.Apply knowledge of fluid mechanics and fluid machinery for understanding, formulating and solving engineering problems.
				2.Acquire knowledge and hands-on competence in applying the concepts of fluid mechanics and fluid machinery in the design and
				development of mechanical systems.
				3.Identify, analysis, and solve mechanical engineering problems useful to the society.
				4.Work effectively with engineering and science teams as well as with multidisciplinary designs.
				5.Skillfully use modern engineering tools and techniques for mechanical engineering design, analysis and application.
		337555 (37)	Manufacturing Science - II	1.Acquire knowledge and hands on competence in applying concept of manufacturing science in design and development of mechanical and
				other engineering systems.
				2.Skillfully use modem engineering tools and techniques for mechanical engineering design, analysis and application.
				3.Demonstrate creativeness in designing new system components and processes in the field of engineering in general and mechanical
				engineering in particular.
				4.Work effectively with engineering and science teams as well as with multidisciplinary design.
		337556 (37)	Operation Research	1.Identify and develop operational research models from the verbal description of the real system.
				2.Understand the mathematical tools that are needed to solve optimization problems.
				3.Use mathematical software to solve the proposed models.
				4.Develop recommendations in language understandable to the decision-making processes in Management Engineering.
				5. A student will problems, sequencing problems, dynamic programming & game theory.
		337651(37)	Machine Design II	1.Apply knowledge of machine design for understanding, formulating and solving engineering problems.
				2.Acquire knowledge and hands-on competence in applying the concepts in the design and development of mechanical systems
				3.Demonstrate creativeness in designing new systems components and processes in the field of engineering in general & mechanical engineering in particular
				4.Identify, analysis, and solve mechanical engineering problems useful to the society.
				5.Work effectively with engineering and science teams as well as with multidisciplinary designs.
		337652(37)	Energy Systems	1.Demonstrate a basic understanding of jet and rocket engine design, function and performance.
				2.Acquire knowledge and hands-on competence in the design and development of mechanical systems.
				3.Compare different non-conventional energy resources and choose the most appropriate based on local conditions
				4.Perform simple techno-economical assessments of non-conventional energy resources
				5.Perform and compare basic environmental assessments of non-conventional energy resources and conventional fossil fuel systems
				6.Design renewable/hybrid energy systems that meet specific energy demands, are economically feasible and have a minimal impact on the environment
		337653(37)	Internal Combustion Engine	1.Demonstrate a basic understanding of engine design, function and performance.
				2.Acquire knowledge and hands-on competence in the design and development of mechanical systems.
				3.Work effectively with engineering and science teams as well as with multidisciplinary designs.
				4.Demonstrate an understanding of the relationships between the design of the internal combustion engine and environmental issues
Mechanical	6th			1.Apply knowledge of heat transfer for understanding, formulating and solving engineering problems.

		337654(37)	Heat & Mass Transfer	2.Acquire knowledge and hands-on competence in applying the concepts of heat and mass transfer in the design and development of mechanical systems
				3.Demonstrate creativeness in designing new systems components and processes in the field of engineering in general and mechanicalengineering in particular
				4.Identify, analysis, and solve mechanical engineering problems useful to the society.
				5.Work effectively with engineering and science teams as well as with multidisciplinary designs.
		337655(37)	Production Management	1.Acquire knowledge recognize and perform the job of a competent production manager.
				2.Identify, analyze and solve production engineering related problemsin planning, decision-making, and expense control.
				3.Understand the performance to establish setting goals & predicting expenses and planning budgets.
				4.Work effectively with engineering and science teams as well as with multidisciplinary designs.
				5.Skillfully use modern engineering tools and techniques in various production areas.
				6.Additionally, this course will help the student to be a committed to quality, timeliness, and continuous improvement.
				7.Pursue higher studies.
		337675 (37)	Power Plant Engineering	1.Demonstrate a basic understanding of various types of power plants.
				2.Acquire knowledge and hands-on competence in the design and development of mechanical systems associated with power plants
				3.Compare different energy resources and choose the most appropriate based on local conditions
				4.Perform simple techno-economical assessments of energy resources
				5.Design power plant that meet specific energy demands, that are economically feasible and have a minimal impact on the environment
Mechanical	7th	337731(37)	Automobile Engineeing	1.Graduates will gain a strong foundation in core automobile engineering, both in theoretical
				2.Acquire knowledge and hands-on competence in the design and development of automobile.
				3.Graduates will demonstrate the ability to identify and solve automobile engineering
		337732(37)	Refrigeration And Air Conditioning	1.Apply knowledge of Refrigeration and Air-Conditioning for understanding, formulating and
				2.Identify, analyse, and solve mechanical engineering problems useful to the society.
				3.Acquire knowledge and hands-on competence in applying the concepts in analysis and design
				4.Demonstrate creativeness in designing new systems, components and processes in the field of engineering in general & mechanical engineering particulas
				5.Work effectively with engineering and science teams as well as with multidisciplinary
		337733(37)	Computer Aided Design and Manufacturing	1.Understand the various CAD/CAM and CNC processes.
				2.Generate and verify the tool path and NC programs for milling and drilling manufacturing processes.
				3.Recognize various types of Curves, surface and Solid and their application as used in geometric modeling.
				4.Appreciate the concept of parametric modeling which is the mainstay of most of the 3D modeling system.
				5.Write and prove sample part programs for CNC machining centres in planar milling operations using the word address
				6.Understand the needs of master production schedule and methods to develop it.
				7.Plan and execute the production activity control, which actually deals with operations in the shop floor.
				8.Skillfully use modern engineering tools and techniques for mechanical engineering design, analysis and application.
		337734(37)	Machine Tool Technology	1.Graduates will gain a strong foundation in machine tool engineering
				2.Acquire knowledge and hands-on competence in design and development of machine tool.
				3.Develop an ability to identify, analyze and solve technical problems related to machine tools.
		337741(37)	Quality Control & Total Quality	1.Explain the importance of quality & role of statistical quality control
				2.Apply methods and techniques of statistical quality control, to studies and interpret the results in business.
				3.Demonstrate motivation and responsibility to advocate for quality in business

			Management	4.Develop an understanding on quality management philosophies and frameworks
				5.Develop in-depth knowledge on various tools and techniques of quality management
Mechanical	8th	337831(37)	Robotics	1.Apply knowledge of robotics for understanding, formulating and solving engineering problems.
				2.Acquire knowledge and hands-on competence in applying the concepts in the design and development robots
				3.Demonstrate creativeness in designing and development of robotics.
				4.Identify, analyze and design of robots useful to the society.
				5.Work effectively with multidisciplinary robots.
		337832(37)	Finite element methods	1.Apply knowledge of finite element method for understanding, formulating and solving engineering problems.
				2.Acquire knowledge and hands-on competence in applying the concepts finite element method in the analysis of structural and thermal systems
				3.Demonstrate creativeness in designing new systems components and processes in the field of engineering
				4.Identify, analysis, and solve mechanical engineering problems useful to the society.
				5.Work effectively with engineering and science teams as well as with multidisciplinary problems.
		337833(37)	Industrial Engineering & Management	1.Ability to apply mathematics and science in Industrial engineering.
				2.Ability to design and conduct experiments, as well as to analyze and interpret data
				3.Ability to identify, formulate, and solve engineering problems
				4.Ability to use the techniques, skills, and modern engineering tools necessary for industrial engineering practice
				5.Ability to design, develop, implement and improve integrated systems that include people, materials, information, equipment and people
		337846(37)	Environmental Pollution & Control	1.Understand contemporary pollution issues.
				2.Have insight into specific examples of environmental pollution.
				3.Understand the causes and effects of key types of environmental pollution.
				4.Appreciate different pollution control strategies.
				5.Awareness of Environmental Laws & Acts
		300805(37)	Value Engineering	1.Understand the basics of Value Engineering (VE) to ensure that a standardized method is used for VE
				2.applications to projects
				3.Learn to perform function analysis for projects
				4.Understand the appropriate time to apply VE for projects
MBA	SEM I	576111(76)	Management Concept and Processes	1. Students will be able to describe skills needed to successfully manage an organization.
				2. Students will be able to apply concepts of strategic and tactical organizational planning.
				3. Students will be able to implement employee motivational approaches and conflict management skills.
				4. Students will be able to describe common performance appraisal processes.
				5. Students will be able to understand group and team management, management development, and employee training.
				6. Students will be able to describe principles of management in a global environment.
				7. Students will be able to describe concepts of controlling and control systems.
				8. Students will be able to manage organisations in dynamic environment.
				9. Students will be able to help organisations to develop and maintain in competitive advantage
				10. Students will be able to business decisions are made using different tools and techniques to remain competitive.
MBA	SEM I	576113(76)	Behavioral Science	1. Examine the behavior of individual human beings and relate it with their behavior in an organizational setting.
				2. Identify the challenges and opportunities managers have in applying OB concepts.
				3. Explore the determinants of organizational effectiveness.
				4. Demonstrate the importance of various concepts related to personality, attitudes, values, creativity and emotions.
				5. Compare generational differences and identify the dominant one's in today's workforce.
				6. Analyze and apply the process of learning, sensation, perception, motivation and leadership.
				7. Examine, compare and apply the dynamics of a group and a team.
				8. Observe the transactions amongst individuals and relate them with conflict, cooperation and competition to negotiate issues smoothly.

MBA	SEM I	576117(76)	BUSINESS LAW	1. To apply contract act to business activities.
				2. To apply the laws relating sale, purchase hire agreement
				3. To implement laws related to Patent law and Consumer Protection Act.
				4. To form and register Partnership firm
				5. To form and incorporate Company under Company act 1956.
				6. To apply rules of Information technology.
MBA	SEM I	576121(76	CAM LAB & VIVA	1. Students will be able to understand basic working of computer
				2. Student will gain knowledge about various operating system
				3. Students will be able to use various application software
				4. Student will develop creativity
				5. Students will develop problem solving skill through use of information technology
				6. Students will be able to understand the concept of networking in computers
				7. Students will be able to understand the uses and working of internet in business
				8. Students will get insight of various ecommerce activity
MBA	SEM I	576118(76)	Business Ethics and CSR	1. Understand the concept of Philanthropy & Corporate social Responsibility
				2. Understand the issues discussed under the title "corporate governance"
				3. Understand how CSR directly affects current and future regulatory practices
				4. Understand Consumerism and Knowledge about Consumer Protection Act
				5. Identify the moral questions that business activity specifically creates
				6. Evaluate common beliefs about ethics—especially common beliefs about the role of ethics in business
				7. Reflect on the nature of business, realize alternatives models for conducting business
				8. Evaluate the ethics of particular business decisions and general practices in business
				9. Appreciate the role of ethics in business and social life
MBA	SEM I	576114(76)	Managerial Economics	1. Student will have a good understanding of economic
				2. concepts and tools that have direct managerial applications. "
				3. The student will be able to forecast future demand and supply situation for their product
				4. The student will be able to develop competitive strategies related to cost and price.
				5. The student will have better understanding of market structure and will be able to deign pricing policies related to specific market and industry.
MBA	SEM I	576116(76)	ACCOUNTING FOR MANAGERS	1. To identify the financial transaction of Book Keeping & Accounting of a business in the scientific format
				2. To draw & to interpret the financial transactions
				3. To develop the strategies based on the interpretation.
				4. To make decisions based on financial information
				5. To establish control over the business.
MBA	SEM I	576112(76)	QUANTITATIVE TECHNIQUES IN MANAGEMENT	1. The students will be able to understand the meaning and use of statistics in business functions;
				2. The students will be able to understand and apply descriptive statistical measures to business situations and present and/or interpret data through tables and charts;
				3. The students will be able to understand and apply probability and sampling distributions to model different types of business processes;
				4. The students will be able understand and apply statistical inference techniques (including statistical hypothesis testing) and apply the concept of Correlation, Simple Linear Regression in business situations and use computer spreadsheet software to perform statistical analysis; and
				5. The students will be able to understand Index Number and Time Series analysis.
	SEM I	576122(76)	Business Case Analysis Lab & Viva	1. Students will be able to Integrate into any project or team environment with an understanding of their role & responsibilities.
				2. Students will be able to Breakdown complex business scenarios or problems into process & data module.
				3. Students will be able to Bear the strains of thinking actively, of offering your analysis, of proposing action plans, and of explaining and defending your assessments.
				4. Students will be able to Understand the complexity of real life organization and management.

				5. Students will be able to Become independent and critical thinkers & produce good arguments for more than one course of action
	SEM I	576115(76)	Managerial Communication (New)	1. Students will be able to understand the principles of communication.
				2. Students will be able to correspond effectively verbally as well as in written form
				3. Students will be able to write and reply to business enquiries and requests
				4. Students will be able to write a resume and application letter and prepare for job interviews.
				5. Students will be able to prepare content of presentations, use visual aids
				6. Students will be able to deliver presentations.
				7. Students will be able to curtail stage fear and handle audience.
				8. Students will be able to apply persuasive techniques to group discussions, meeting, and conferences.
MBA	SEM II	576213(76)	Marketing Management	1. Explain and discuss the general concepts about marketing management
				2. Discuss consumer and buyer behaviour models as they influence
				3. Explain the concepts of segmentation, targeting and positioning as part of a comprehensive Marketing plan.
				4. Develop a set of skills important to successful performance in marketing management positions, including critical thinking, working in a group environment, oral and written presentation skills.
				5. Explain the prospect of the global market and application of digitalization to reach there.
MBA	SEM II	576222(76)	Research Analysis Lab	1. Demonstrate the use of various software's used in business.
				2. Enter and organize the data collected in the spreadsheet of the various software.
				3. Analyze the collected data using different tools efficiently and effectively.
				4. Examine and comprehend the findings /results.
MBA	SEM II	576212(76)	RESEARCH METHODOLOGY	1. The students will be able to understand a range of social research methods, techniques and skills for particular research questions in management and business settings;
				2. The students will be able to develop insight into research in new areas;
				3. The students will be able to frame research problem, conduct literature review and formulate hypothesis;
				4. The students will be able to develop survey design, data analysis and a range of quantitative and qualitative research methods;
				5. The students will be able to handle ethical problems and issues related to management research in particular;
				6. The students will be able to develop project planning; and
				7. The students will be able to use statistical tools like Univariate Analysis, Bi-Variate Analysis, Multivariate Analysis, Parametric and Non Parametric Tests etc. With the help of advanced statistical packages like SPSS etc.; and
				8. The students will be able to use research methodology in the functional areas of management.
MBA	SEM II	576211(76)	Management Information System and DSS	1. Students would be able to understand the usage of MIS in organizations and the constituents of the MIS and different database used in today's world.
				2. The student learns the functions and issues at each stage of system development.
				3. The student would understand the classifications of MIS, understanding of functional MIS and the different functionalities of these MIS.
				4. The students would be able to understand applications of OAS,TPS,MIS,DSS,ESS and ES in an organization.
				5. The student learns the functions and issues at each stage of system development. Further different ways in which systems can be developed are also learnt Understand the processes of developing and implementing information systems;
				6. Understand the role of information systems in organizations, the strategic management processes, and the implications for the management;
				7. This module lead to linking MIS to business strategy and the areas in which MIS would lead to strategic advantage
				8. The student is able to understand an MIS in real-life situation, identify the need of MIS, implementation issues in MIS in that organization and future trends in that system.
				1. Students will able to demonstrate an understanding of basic concepts and ideas related to material management.

				2. Students will be able to the concept of purchasing and the will able to apply procurement theories in workplace and create adding value to the organization.
MBA	SEM II	576217(76)	MATERIAL MANAGEMENT	3. Students will able to Work as support personnel to supervisors, officers and managers in the field of Materials Management in industrial/service/Trade/ Government and other organizations.
				4. Students will able to demonstrate their abilities in Key areas such as Purchase Management, Inventory Control, Logistics, Warehousing and Human Resource Management.
				5. Students will able to demonstrate their abilities to organize Stores and warehouses, Monitor, indentify and control inventory.
				6. Student will able to face the challenges arising out of present scenario of competitiveness due to globalization of economy.
				1. To understand broad framework of financial decision making in a business unit
				2. To identify the time value of money.
MBA	SEM II	576214(76)	ADVANCED FINANCIAL MANAGEMENT	3. To interpret the need and types of capital for business
				4. To develop the strategies based on the requirement and usage of capital & resources in a business unit.
				5. To identify the different Costs incurred in raising capital
				6. To determine the use of Leverage in raising capital.
				7. To do the Analysis of Financial statements
				1. Demonstrate an understanding of the functional areas of accounting, marketing, finance, management, and economics etc. and production system.
				2. Demonstrate the practical application of plant location, layout planning
MBA	SEM II	576216(76)	PRODUCTION AND OPERATION MANAGEMENT	of building and layout of any organization.
				3. Explain the concept of capacity planning and JIT manufacturing system as per the market demand.
				4. Develop the employee performance measurement tools and techniques with the help of work measurement and method study.
				5. Implement the safety tools in order to prevent accident and maintenance system to minimize the rejection rate and rework.
				1. Will have the ability to discern distinct entrepreneurial traits
				2. Will be able to understand Entrepreneurship scenario in the country ,Attractions for and challenges of an entrepreneur
				3. Will understand Legal and Regulatory environment- Legal liabilities and obligations of the proposed business Organization – Structure, Resources, Marketing, Finance, etc.
MBA	SEM II	576218(76)	Entrepreneurship Development (New)	4. Will be able to Design strategies for successful implementation of ideas.
				5. Will be aware of the parameters to assess opportunities and constraints for new business ideas.
				6. Will be able to understand the systematic process to select and screen a business idea Business Plan – Project Viability, HR Planning, and Financial Planning
				7. Will be able to Design strategies for successful implementation of ideas.
				1. Student Will be able to understand human resources and their effective management in organizations
				2. Students will demonstrate practical skills in job analysis, interviewing, judging job candidates, and conducting performance evaluations.
MBA	SEM II	576215(76)	Human Resource Management (New)	3. Student will be ablbe to implement successful training and development programs
				4. Student will be able to outline the current theory and practice of recruitment and selection.
				5. Student will be able to strategically plan for the human resources needed to meet organizational goals and objectives.
				1. To demonstrate the capabilities to solve issues related to human side of organizations.
				2. To understand various OD interventions and its applications in different organizational settings.
MBA	SEM III	576312(76)	Organizational Development	3. To identify and evaluate strategies to increase organizational effectiveness.
				4. To learn change management and develop the ability to facilitate change in the organization.
				5. To handle organizational conflicts through various techniques of conflicts resolution and gain a keen insight of intergroup behavior.
				6. To understand various organizational structures and cultural settings and the techniques of redesigning.
				1. The students will be able to understand the use of tax policies and thereby apply in the organization.

MBA	SEM III	576345(76)	TAXATION AND TAX PLANNING	2. The students will be able to get jobs as a tax consultant. 3. The students can render their service to various multi-national companies as a tax adviser. 4. The students will be able to submit their own Income tax form and also able to discover the ways for tax minimization through proper tax planning. 5. The students can become an aware and responsible citizen by paying proper tax against goods and services consumed.
MBA	SEM III	576374(76)	LEAN AND AGILE SYSTEMS	1. The students will be able to deal with industrial problems and propose solution for them 2. The students will acquaint with the basic theory and characteristics of the lean and agile systems. 3. The students will be able to identify, formulate, measure and solve manufacturing problems in the a manufacturing plant 4. The students will be able to use the techniques, skills, and modern manufacturing tools such as lean systems and supply chain management . 5. The students will be able to function on multi-disciplinary teams such as problem solving as well as implementation process
MBA	SEM III	576353(76)	EXECUTIVE COMPENSATION	1. Student will able to understand the components of compensation 2. Students will gain insights on the various theories of compensation 3. Students will be able to draw insights regarding the involvement of employee Union in compensation 4. Students will be able understand the compensation strategies 5. Students will develop understanding regarding Broad banding, pay delivery system and team based pay. 6. Students will gain understanding regarding compensation for various groups
MBA	SEM III	576362(76)	Internet Business Models and Business Strategies	1. Develop a basic understanding of the issues in an overall framework of Internet based E-commerce 2. Understand the variety of e-business models, i.e., business to business, business to customer, consumer to consumer; 3. Know what Business model Comprises of. 4. Design a appropriate Business Model 5. Know about Business Model for E commerce 6. Formulate Strategy and implement online forms 7. Understand the impact of internet on various industries like Banking, Retail, Healthcare, Travel etc.
MBA	SEM III	576365(76)	Knowledge Management and Innovation	1. Analyze the role of knowledge management in attainment of financial objectives, quality and process improvement, and innovation. 2. Apply knowledge management models and technologies to business situations. 3. Use a knowledge management system for an organization. 4. Create a knowledge management plan to leverage opportunities to create, capture, represent and share knowledge within an organization. 5. Definitions and concepts of invention, design, research, technological development and innovation 6. Managerial strategies to shape innovative performance
MBA	SEM III	576313(76)	INNOVATION TECHNOLOGY MANAGEMENT	1. Student will able to understand role of technology in organization's success. 2. Student wills able to solve problem in more creative and innovative way related to technology. 3. Student will able to understand effect of technological development in organization's success or failure. 4. Student will be able to understand impact of technology change and techniques to cope up with those changes 5. Student will be able to utilise technology in business in more beneficial way.
MBA	SEM III	576314(76)	CONSUMER BEHAVIOR	1. Student will able to understand Consumer decision making process. & the various types of consumer decision making. Process. 2. Student will able to apply theories of consumer behaviour to the formulation of effective marketing strategy. 3. Student will able to relate company's strategic moves, recently observed consumption patterns or problems faced by a company Student will able to develop critical thinking and decision-making skills in marketing challenges. 4. Student will able to understand the mental processes that guide consumer perceptions, attitudes, memory and choices. 5. Student will able to analyze the challenges that might influence the formulation of effective Marketing Strategies.

				6. Student will able to understand the influence of culture society friends &family on consumer behaviour it will help in effective strategy formulation Student will able to understand formation of group & its impact on consumer buying.
MBA	SEM III	576335(76)	SALES MANAGEMENT	1. To realizes the importance & functions of sales in any organization. 2. To understand the expectations an organization has from the sales personnel. 3. To get sufficient understanding of reasons for customer making a buy. 4. To understand of Concept of Value Preposition and Value Creation. 5. To Develops Understanding of Selling Process. 6. To in a position of visualizing the interaction with the customer. 7. To understand various prevalent sales organizational structures and the rational behind them. 8. To apply quantitative tools for sales planning and analysis. 9. To develop skills of recruitment and various methods of performance enhancement.
MBA	SEM III	576351(76)	Human Resource Planning and Development	1. To understand the techniques for analyzing the requirements and the availability employees at all times throughout the organization. 2. To apply principles related to demand & supply of labour. 3. Develop the knowledge, skills and concepts needed to resolve actual human resource management problems or issues. 4. Forecast staffing needs based on demand and supply issues 5. Conduct a job analysis and produce a job description from the job analysis. 6. Demonstrate proficiency in identifying, framing and solving human resource problems in best way."
MBA	SEM III	576333(76)	ADVERTISING AND SALES PROMOTION	1. To design an IMC (Integrated Marketing Communication Program) 2. To Use Creative styles and use of appeals in advertising. 3. To implement and develop Media Strategy. 4. To measure promotional program effectiveness. 5. To analyze International Environment and role of regulatory agencies
MBA	SEM III	576341(76)	SECURITY ANALYSIS & PORTFOLIO MANAGEMENT	1. To understand broad framework of Stock Markets in India 2. To identify the risks involved in Investment & their types. 3. To identify the tools and models used for doing analysis of a security's return and risks. 4. To develop the strategies to reduce these risks through portfolio creation. 5. To identify differently the rationale of Portfolio Creation. 6. To determine the usage of Markowitz Model of Portfolio Selection. 7. To do the Analysis of Securities with CAPM Model.
MBA	SEM III	576311(76)	OPTIMISATION METHOD	1. The students will be able to understand the meaning, use and process of Optimization Methods. 2. The students will be able to understand linear programming and its solution with the help of graphical method, simplex method and duality analysis . 3. The students will be able to understand and apply best alternative method for profit maximization or cost minimization. 4. The students will be able to understand and apply assignment problem and Travelling salesman problem for quality production as well as distribution system . 5. The students will be able to understand waiting line model for reduction of Idle time of various service organization as well as production organization. 6. The students will be able to develop strategies related with, reduced project cost and project duration time through network analysis.
MBA	SEM III	576371(76)	PRODUCTION PLANNING AND CONTROL	1. Students will be able to understand the basic concepts of production planning and control functions and systems. 2. Students will be able to take decision for plant location (what, where, how and when) 3. Students will be able to develop a systematic approach to the solution of planning and control problems for a wide variety of industrial and business organizations. 4. Students will be able to apply techniques for planning and controlling production activities. 5. Student will be able to learn about production planning and control methods currently in use by industrial companies.

MBA	SEM III	576334(76)	Service Marketing	1. Students will be able to cope up with various challenges faced by servicemarketing in commercial & non-commercial environment.
				2. Students will map the difference between marketing tangible and intangiblegoods & services, including service marketing mix other unique trait ofservice marketing.
				3. Student will be ready to face challenges in service delivery as outlined in aservice gap model.
				4. Students will be able to develop strategies associated with the concept ofRelationship Marketing.
				5. Student will understand various dimensions of a service offers&key issuesregarding customer evaluation of services.
MBA	SEM III	576332(76)	Distribution and Inventory Management	1. The purpose is to acquaint the student with the concepts which are helpful in developing a sound sales and distribution policy and in organising and managing sales force and marketing channels.
				2. Recognise and demonstrate the significant responsibilities of sales person as a KEY individual. Describe and Formulate strategies to effectively manage company's sales operations.
				3. Evaluate the role of Sales manager and his/ her responsibilities in recruiting, motivating, managing and leading sales team.
				4. Illustrate the fundamentals of Distribution channels, Logistics and Supply Chain Management.comprehend the dynamics of inventory management's principles, concepts, and techniques as they relate to the entire supply chain (customer demand, distribution, and product transformation processes),
				5. Understand the methods used by organizations to obtain the right quantities of stock or inventory,
MBA	SEM III	576322(76)	Summer Training Report and Viva	1. Students will develop technical, interpersonal and communication skills.
				2. Student will gain firsthand experience of working as a management professional, including technical application of managerial methods.
				3. Students will be equipped with the fundamental skills and tools for maximizing their success in the negotiation process
				4. Student will understand the various issues in corporate organization.
MBA	SEM III	576321(76)	Negotiation Skill and Techniques Lab	1. Students will be able to understand and prepare for each negotiation, along with proven methods to subtly and skillfully guide it to a successful conclusion.
				2. Student will be able to negotiate with tack and skills in accomplishing personal and organizational objectives.
				3. Student will understand what the other side really wants by learning skilful questioning and listening techniques.
				4. Student will learn how to use powerful negotiation techniques that will enable to aim for win/win negotiations every time.
				5. Students will be equipped with the fundamental skills and tools for maximizing their success in the negotiation process
				6. Student will understand the various issues in cultural negotiation.
				7. Students will learn negotiation strategies and tactics for success.
				8. Students will be able to analyze and review outcomes for use in future negotiations
MBA	SEM III	576355(76)	Performance Management (New)	1. Students will understand the practice of human resource staffing and performance management in modern corporations
				2. Students will demonstrate practical skills in job analysis, interviewing, judging job candidates, and conducting performance evaluations
				3. Students will know quantitative skills to analyze reliability, validity and adverse impact of performance management.
				4. Students will understand concepts and approaches to align staffing and performance management systems with business strategy
				5. Students will understand the performance management concepts, tools and steps for planning performance goals, monitoring performance and appraising performance results
				6. Student will developed their understanding of their own appraisal system and how to get the best from it.
				7. Students will develop a plan for managing the performance and development of each individual for whom they are responsible
				8. Students will be able in understanding employee capabilities to their fullest extent through effective feedback and coaching.
				1. StudentsWill be able to develop a comprehensive understanding of how T & D fits into organisational context.
				2. Students Will be able to describe broader context in which training & development activities occur.

MBA	SEM III	576356(76)	Management of Training and Development (New)	3. Students Will be able to analyse the factors which impact the function within the organisation and outside the organisation
				4. Students will Learn the usage of different training methodologies in designing a training program &
				5. Students will Understand and appreciate the role of training and development in meeting business goals.
				6. Students will Understand the structure of the training function and the entire gamut of the related activities.
				7. Students will Understand the training cycle.
MBA	SEM IV	576411(76)	Corporate Strategy	1. To demonstrate the concepts of Strategic Management in real-time.
				2. To understand the the process of Strategic decision-making at various levels.
				3. To apply the Environmental scanning techniques.
				4. To handle implementation of strategies effectively.
				5. To exhibit the techniques used in Strategic and operational control.
MBA	SEM IV	576445(76)	BANKING AND INSURANCE	1. The students will be able to understand the Indian financial system and thereby will take the financial decisions of the self as well as the organization as a whole.
				2. The students will be able to insure themselves as well as their acquaintances after analyzing the various insurance products available in the market.
				3. The students can render their service to various multi-national Insurance companies as an Insurance adviser or financial analyst.
				4. The students will be able to get exposure in banking industry as a credit manager, financial analyst etc.
				5. The students can establish their own consultancy firms or can play the role of merchant bankers.
MBA	SEM IV	576436(76)	CORPORATE COMMUNICATIONS (New)	1. Students will be able to apply the concepts of corporate communication in an organisation
				2. Students will be able to understand the role of Public relations
				3. Students will be able to differentiate between traditional and modern methods of communication
				4. Students will able to understand the impact of community relationship programs
				5. Students will be able to analyze the cost benefit associated with community relationship programs
				6. Students will be able to understand the concepts and methods of Customer relationship
				7. Students will understand the importance of blogs, chat rooms and other internal communication tools
				8. Students will be able to effectively apply internet based technologies while communicating for organisational advantage.
				9. Students will be able to gain insights on web technology
				10. Students will be able to understand crisis communication strategies
MBA	SEM IV	576485(76)	BANKING (New)	1. Students will be able to understand the various banker customer relationships
				2. Students will be able to understand the concepts of garnishee order and income tax mandate
				3. Students will be able to understand the duties and responsibilities of paying banker
				4. Students will be able to understand the duties and responsibilities of collecting banker
				5. Students will be able to analyze the different types of customers and the criteria for handling their accounts and money laundering
				6. Students will be able to understand the concepts of Lending mechanism
				7. Students will be able handle NPA management
				8. Students will be able to understand the documentation procedures for various types of accounts
				9. Students will be able to gain insights on creating charge on collateral priority sector lending
				10. Students will be to understand about SME/SHF/SSI
				11. Students will be able to understand the other services provided by banks
MBA	SEM IV	576461(76)	Business Process Re-engineering and	1. Understand the basic concepts and processes of BPR.
				2. Understand the basic concepts of ERP.
				3. To understand the steps and activities in the ERP life cycle;
				4. To understand concepts of reengineering and how they relate to ERP system implementations;

MBA	SEM IV	576461(76)	Re-engineering and ERP	5. Identify different technologies used in ERP.
				6. Understand and apply the concepts of ERP Manufacturing Perspective and ERP Modules.
				7. Discuss the benefits of ERP
				8. Apply different tools used in ERP
MBA	SEM IV	576465(76)	Internet Marketing	1. Understand the fundamentals of Internet and Internet Marketing.
				2. Know how consumer behaves online.
				3. Work with a general model of online marketing and place online marketing tools, instruments and theories into a broader theoretical model/framework
				4. Understand what the importance is of online marketing and social media to contemporary marketing.
				5. Study new online marketing themes independently, and know how/where to find information in the ever changing and expanding field of online marketing
				6. Develop effective strategies for: generating traffic, optimizing conversion, achieving customer satisfaction, optimize profitability, generate social media strategies and continuous innovation within online marketing environments.
				7. Design and Develop online site for marketing.
				8. define the essence of E-marketing and its importance in a company's overall Marketing plan.
				9. Get general knowledge of the online marketing tools that are currently most effective through theory and case studies.
				10. Use the internet as a research method and learn and practice on how to publish information on the internet themselves.
MBA	SEM IV	576435(76)	RETAIL MANAGEMENT	1. Students will able to understand modern concepts in retailing.
				2. Students will able to understand and formulate various merchandising plans in retailing.
				3. Students will able to understand and implement various techniques in inventory management.
				4. Students will able to formulate and implement various promotional mixes in retailing.
				5. Students will able to understand supply chain management in retailing.
MBA	SEM IV	576487(76)	MEDIA MANAGEMENT	6. Students with the ability to think critically about media and management, with a positive, ethical and open: minded worldview
				7. Students with a foundation in management principles as seen through the lens of media and the media business
				8. Students with a solid foundation in communication skills— written, oral and mediated.
				9. Student will able to formulate media strategy.
MBA	SEM IV	576455(76)	Emerging Issues In HR Management	1. Discover the global trends affecting human resources management.
				2. Demonstrate the application of an HRMS/HRIS to various functional areas of human resources management.
				3. Develop the knowledge, skills and concepts needed to resolve actual human resource management problems or issues.
				4. Evaluate the procedures and practices used for recruiting and selecting suitable employees."
				5. Demonstrate proficiency in identifying, framing and solving human resource problems in best way."
MBA	SEM IV	576481(76)	Hospital Management	1. Aware about the functioning and management of hospital in general.
				2. To understand and get acquainted with hazards and its management in hospital environment.
				3. Understand and apply resource management concepts (personnel, finance, and material resources) and the processes and strategies needed in specific hospital sectors.
				4. To get familiarized with the designing and maintenance of hospital systems.
				5. Deal with each and every critical issues related to managing a hospital
MBA	SEM IV	576442(76)	INTERNATIONAL FINANCIAL MANAGEMENT	1. To understand the finance function in global context & the International Financial Environment
				2. To identify, to execute and to interpret the transactions of Spot, Forward & Futures.
				3. To develop the strategies to reduce these risks through hedging and speculation.
				4. To identify the nature of exposure and risk.
				5. To determine the usage of internal hedging strategies in management of exposure and risk

MBA	SEM IV	576472(76)	PROJECT PLANNING, EVALUATION AND MANAGEMENT	1. Students will be able to understand the basic concepts of project planning functions and systems. 2. Students will be able to take decision for the project work (what, where, how and when) 3. Students will be able financial estimation for the project in the best possible manner along with the proper systematic planning of production activities 4. Students will be able to apply techniques for socio cost benefit analysis system as well as network analysis. 5. Student will be able to learn about project planning and evaluation management techniques currently in use by industrial companies. 6. Student will be able apply network analysis for project and controlling production activities and minimize the completion of project duration>
MBA	SEM IV	576412(76)	ECONOMETRICS DECISION SCIENCE	1. Students will be able to understand the basic concepts of econometrics, process, input-output analysis and its industrial application. 2. Students will be able to understand and demonstrate the theory of game and its solution with pure and mixed strategy. 3. Students will be able to demonstrate and understand Markov process and its solution under circumstance of short and long term. 4. Students will be able to understand decision theory and decision tree under condition of certainty, uncertainty and risk which is equally applicable in corporate organization as well as daily life. 5. Students will be able to understand simulation, Monte Carlo simulation and formulation with solution.
MBA	SEM IV	576451(76)	Industrial Relations	1. Demonstrate descriptive knowledge of the field of industrial relations. 2. Apply the essential concepts of industrial relations and their interrelationship at the personal, organisational and national levels. 3. Recognise and consider the social, historical and equity issues within industrial relatins. 4. Investigate solutions to industrial relations problems based on research and assessment of current practices. 5. Communicate your knowledge of industrial relations in both written and verbal formats reactive to both audience and purpose.
MBA	SEM IV	576482(76)	Travel & Tourism	1. Apply critical thinking and develop basic analytical, problem-solving and decision- making skills. 2. Gain supervisory skills and competencies necessary to meet the needs of the ever demanding Travel and Tourism Industry. 3. Deliver quality service in a workplace environment.
MBA	SEM IV	576453(76)	Strategic Human Resource Management (New)	1. Will be able to describe the dynamic nature of global competition and of social and technological trends and their significance for HRM practice 2. Will be able to help their organization to analyze its external environment and internal capabilities and develop a strategic HR plan to enhance its long-run performance. 3. Will be able to understand the nature of HRD, its history, origins and national and international context 4. Will be able to describe how HR strategies can be informed by knowledge of labour markets and product markets locally, nationally and internationally. 5. Will be able to integrate of HRD with other areas of HRM and overall business strategy 6. Will be able to demonstrate the wide range of approaches and interventions which comprise HRD and which impact on all categories of employees 7. Will be able to the identify competencies and its uses in the process of determining development and potential. 8. Identify the linkages between HRM functions and operations and organizational strategies, structures and culture.
MCA	1st	521152(21)	Information & Web Technology	1. Student will be familiar with fundamentals of computers and organization of computer. 2. Students will be familiar with various Internet protocols and the concepts of Internet. 3. Students will able to differentiate between various e-mail protocols and their working. 4. Students will be familiar with the concept of remote login with the understandability of hosting and maintaining of website. 5. Students will also get knowledge about Internet security and Firewalls.
				1. Students will be able to analyze the logical structure of statements symbolically including the proper use of logical

MCA	1st	521151(14)	Mathematical Foundations of Computer Science	connectives, applications of Boolean algebra in circuits and karnaugh map. 2. Students will be able to determine whether a relation is reflective, symmetric and transitive. They will be able to apply the different types of functions and Hash diagram. 3. Students will be able to construct inductively defined sets and recursive function. Also they will construct the grammars. 4. Student will be able to understand the basics of Graph Theory and trees. 5. Student will be able to understand the basics of Group Theory and coding.
MCA	1st	521153(21)	Problem Solving & Program Design with C	1. Student will understand the basic terminology used in computer programming 2. Student will be able to design programs involving decision structures, loops and functions. 3. Student will understand the dynamics of memory by the use of pointers. 4. Student will understand different data structures and create/update basic data files.
MCA	1st	521154(21)	Computer Organization & Architecture	1. Student will be familiar with different digital components used in Computers and the organization and design of digital computer. 2. Students will learn about the basic computer instructions. 3. Students will have an idea about the basic design of a CPU . 4. Students will learn about the arithmetic operations performed by a processor. 5. Students will have knowledge of memory organization within a computer.
MCA	1st	521155(46)	Professional Communication in English	1. Students will be able to understand the basics of communication, barriers to communication and how to overcome them. 2. Students will be able to correspond clearly and learn to handle correspondence. 3. Students will be able to understand the different elements of a report along with their importance. 4. Students will be able to write reports in the correct format. 5. Students will be able to respond to job advertisements and write resume. 6. Students will learn how to prepare and present technical and non-technical proposals. 7. Students will be able to write notice, agenda and minutes related to meetings. 8. Students will be able to learn how to prepare and face interviews. 9. Students will be able to write grammatically correct English. 10. Students will be able to comprehend given written material and elaborate the ideas.
MCA	2nd	521251(21)	Operating System	1. The student will be able to learn the various functionalities of OS. 2. The student will be able to use the various algorithms and techniques to perform the various jobs performed by operating systems 3. The student will be able to get the overview of how operating system is designed. 4. The student will be able to demonstrate how various resources are managed by operating system
MCA	2nd	521252(21)	Database Management System	1. Students will be able to design a database based on the given requirements. 2. Students will be able to make projects with knowledge of subject provided to them. 3. Students will be able to write Standard Query Language statements. 4. Students are expected to apply normalization techniques on given database
MCA	2nd	521253(21)	Data Structure	1. Students will be able to make appropriate data structure and algorithm design decisions with respect to program size, execution speed, and storage efficiency. 2. Students will be able to understand common data structures (such as arrays, linked lists, stacks, queues, priority queues, trees, heaps, hash tables, associative containers) 3. Students will be able to write and implement various sorting, searching, and hashing algorithms.
MCA	2nd	521254(14)	Computer Oriented Numerical Analysis	1. Students will be able to numerically solve many types of problems such as Roots of equations, system of linear simultaneous equations. Interpolation of values of dependent measurements . 2. Students will be able to approximating the differential or integral of unknown function given a set of discrete measurement from the function.

				3. Students will be able to select from alternative methods which most appropriate to solve problems for a specific task.
				4. Student will be able to understand the limitation of each numerical methods especially the conditions under which they
				fail to converge to a solution.
MCA	2nd	521255(76)	Introduction to Management Function	1. The student will be able to understand the theoretical understanding of management and administration.
				2. The student will able to develop insights into the step-by-step processes involved in the development of plan
				3. The student will be able to adapt the concept of motivation and ways to apply motivation technique in real world.
				4. The student will be able to use communication as an effective tool for management.
				5. The student will be able to analyze formal and informal relation in an organization.
				6. The student will be able to understand the basics of HRM
				7. The student will be able to apply functional knowledge of management real world.
				8. The student will be able to understand how to make balance sheets, profit & loss and trial balance.
MCA	3rd	521351 (21)	Computer Networks and Communication	1. The students will be able to understand the structure and organization of computer networks; including the division into layers, role of each layer,
				and relationships between the layers.
				2. The students will have basic understanding of Communication techniques and functioning of physical layer.
				3. The students will be able to understand the basic concepts of data link layer properties; including the flow control mechanisms.
				4. The students will be able to understand the channel structure of ISDN, HDLC and ATM formats.
				5. The students will be able to understand the working of IEEE 802 standards with its working prototype.
				6. The students will be able to understand the mechanism of dual bus architecture for transmission.
				7. The students will have in depth understanding of network layerconcepts and protocol design; including virtual circuit and datagram network
				designs, routing algorithms, and network interconnections.
				8. The students will have in depth understanding of transport layer concepts and protocol design; including connection-oriented and connection-less
				models
				9. The students will be able to understand the basic concepts of application layer protocol design.
				10. The students will be able to understand the basic concepts of network security concepts; including authentication, integrity and system security
				design challenges.
MCA	3rd	521352 (14)	Computer Oriented Optimization	1. Students will be able to use allocation model, solve problems involving assignment of jobs to machine ,
				blending,product mix, advertising media selection, least cost diet, distribution ,transportation.
				2. Students will be able to use the concept of inventory control to determine Economics Order Quantity(E.O.Q) ,
				safety stack ,reorder level, maximum and minimum reorder level.
				3. students will be able to use PERT & CPM in planning, scheduling and controlling construction of dams, bridge ,
				roads, development of production of aircrafts , ships and computer networking
				4. Students will be able to present computer oriented algorithm for the most of the method used to solve the well
				known mathematical model.
				5. Students will learn the simulation technique through this paper.
MCA	3rd	521353 (21)	Formal languages & Automata Theory	1. The students will be able to understand the concepts of computational madel
				2. The students will be able to convert among DFAs, NFAs.
				3. The students will be able to identify the grammars and languages based on Chomsky hierarchy.
				4. The students will be able to designFA, PDA, TM for the languages.
				5. The students will be able to know about decidability and complexity
MCA	3rd	521354 (21)	Unix Operating System and Shell Programming	1. The students will have deeper understanding of structure of Unix Operating system.
				2. The students will have detail study of basic Unix commands to advanced commands
				3. The students will have programming strengths of the Unix system through system calls to shell script

				4. The students will have better understanding of how the kernel works.
				5. The students will have deeper understanding of how the programs interact with the system so that more efficient and sophisticated coding
				can be done.
MCA	3rd	521355 (21)	Object Oriented Methodology and C++	1. Understand object-oriented programming features in C++,
				2. Apply these features to program design and implementation,
				3. Gain some practical experience of C++.
MCA	4th	521451 (21)	Artificial Intelligence &Expert Systems	1. Student will have ability to understand and define different AI problem and apply suitable problem
				solving technique.
				2. Student will have ability to define the heuristics and apply them for solving complex problem with
				understanding of different heuristic based search techniques.
				3. Student will develop an understanding of game playing techniques
				4. Student will have understanding of different knowledge structure and inference mechanism with ability to apply them in
				intelligent solutions of complex problem .
				5. Students will develop skills needed for processing of natural language at syntactic and semantic level.
				6. Student will understand the existence of uncertainty in problem solving and how mathematical /statistical models are
				used to overcome these problems.
				7. Students will understand planning system and different types of planning required for problem solving process
				8. Student will be able to understand working of Expert system.
				8. Student will develop skill to make program in PROLOG and LISP.
MCA	4th	521452 (21)	Compiler Design	1. Students will have a concrete view on the theoretical and practical aspects of compiler design
				2. Students will be able to apply ideas and techniques discussed to various software design
MCA	4th	521453 (21)	Software Engineering	1. The student will have a fair idea about the importance of using software engineering principles in real life projects
				2. The student will also be able to pick an appropriate software development model for developing systems
				3. The student will be able to prepare software requirement sheet for a real life project, keeping in mind the
				properties of an SRS document
				4. The student will be able to use mathematical models for calculating the size, cost and duration of real life projects
				5. The student will be able to test the developed system using different testing techniques
MCA	4th	521454 (21)	Advanced JAVA Programming	1. Students will be able to write and test applets for potential inclusion in web pages.
				2. Students will be able to understand the use of APIs in robust, enterprise three level application developments.
				3. Students will be able to understand the Java features for secure communications over the internet.
MCA	4th	521478 (21)	Cloud Computing	1. Students will be able to perform cloud oriented analysis.
				2. Students will be able to model cloud candidate derived from existing businessdocumentation.
				3. Students will be able to design the composition of a cloud services.
				4. Students will be able to design application services for technology abstraction.
MCA	5th	521551(21)	Cyber Security	1. The students will be able to understand the structure and organization of computer Security and cyber crims.
				2. The students will have basic understanding of security techniques and function.
				3. The students will have in depth understanding of network security algorithms.
				4. The students will be able to understand the basic concepts of security threats.
				5. The students will be able to understand the basic concepts of firewalls; including authentication,
				integrity and system security design challenges.
MCA	5th	521552(21)	Computer Graphics And Multimedia	1. Students will be able to implement the logic of drawing basic output primitive while developing graphical package
				2. Student will have ability to apply various 2D and 3D transformation concept on objects
				3. Students will be able to create graphical objects with realistic look by applying surface rendering and projection techniques
				4. Students will be able to develop a small graphical package with defined fundamental output for a specific application
				5. Students will be able to develop graphical based application interfaced with multimedia and animation

				6. Students will have the concept of basic compression techniques for images students will
				be equipped with techniques used in graphical and multimedia applications
MCA	5th	521553(21)	Software Project Management	1. Students will be able to develop a project management plan (PMP).
				2. Students will be able to track project execution through collecting artifacts and metrics according to procedures described in PMP.
MCA	5th	521575(76)	E-Commerce	1. Students are expected to realize the problems involved in designing and building ecommerce systems.
				2. Explain the components and roles of the Electronic Commerce environment.
				3. Describe E-Commerce payment systems.
MCA	5th	521588(21)	Big Data Analytics	1. Students will demonstrate knowledge of big data analytics.
				2. Students will demonstrate the ability to think critically in making decisions based on data and deep analytics.
				3. Students will demonstrate the ability to use technical skills in predicative and prescriptive modeling to support business decision-making.
				4. Students will demonstrate the ability to translate data into clear, actionable insights.
				5. Students will demonstrate effective communication skills that facilitate the effective presentation of analysis results.
B.Pharm	I	341153 (41)	Pharmaceutics-I	1. Recall the history of Pharmaceutical practice through ages.
				2. Define principle procedure of general formulations.
				3. Recognize route of drug administration and classification of Pharmaceutical dosage form.
B.Pharm	I	341166 (41)	Remedial Biology	1. Understanding of living organism.
				2. Ability to analyze international classification system for living things.
				3. Ability to discriminate structure of living cells and their significance.
B.Pharm	I	341172(41)	Remedial Mathematics	1. Understanding basic formulas to be used for higher statistical calculations.
				2. Evaluate raw data and compilation.
B.Pharm	I	341154(41)	Pharmaceutical Inorganic Chemistry	1. Classify and describe sources of impurity and periodicity of elements.
				2. Choose various electrolytes and reagents for pharmaceutical preparations.
				3. Employ the use of radiopharmaceuticals in Medicine preparations and diagnostics.
B.Pharm	I	341151 (41)	Human Anatomy And physiology- I	1. Develop a vocabulary of appropriate terminology to effectively communicate information related to anatomy and physiology.
				2. Recognize the anatomical structures and explain the physiological functions of body systems.
				3. Recognize and explain the principle of homeostasis and the use of feedback loops to control physiological systems in the human body.
				4. Use anatomical knowledge to predict physiological consequences, and use knowledge of function to predict the features of anatomical structures.
				5. Recognize and explain the interrelationships within and between anatomical and physiological systems of the human body..
B.Pharm	II	341252(41)	Pharmaceutical Organic Chemistry I	1. Understand hydrocarbons, organic compounds containing halogen, alcohols, Phenols, Carboxylic acids, their preparation and properties.
				2. Understand and recall about stereochemistry, chirality and racemic mixture.
B.Pharm	II	341255(41)	Computer Applications in Pharmacy	Use of Microsoft office, internet resources and e mails in pharmaceutical sciences
B.Pharm	II	341250(41)	Human Anatomy And physiology-II	1.Synthesize ideas to make a connection between knowledge of anatomy and physiology and real-world situations, including healthy lifestyle decisions and homeostatic imbalances.
				2. Interpret graphs of anatomical and physiological data.
				3. Demonstrate laboratory procedures used to examine anatomical structures and evaluate physiological functions of each organ system.
B.Pharm	II	341253(41)	Biochemistry	1. students understant the molecular levels of the chemical process associated with living cells.
				2. biochemical facts and the principles to understandthe metabolism of nutrient molecules in physiological and pathological conditions.
				3. knowledge about genetic organization ofthe mammalian genome and hetero & autocatalytic functions of DNA.

B.Pharm	II	341317(41)	Pharmaceutical Analysis-I	1. know about fundamentals of analytical chemistry and principles of electrochemical analysis of drugs
				2. Able to understand the procedure for estimation of pharmaceutical compounds.
B.Pharm	II	341254(41)	Pathaphysiology	1. Transfer to or complete clinical and academic programs in the allied health sciences, and function competently in these clinical programs.
				2. Apply the scientific method when evaluating the validity of information related to pathophysiology.
				3. Make correlations between pathophysiology and clinical skills they are learning in their allied health science programs.
				4. Understand how the various organ systems are interrelated, and use this understanding to promote a holistic approach towards the evaluation and treatment of patients.
B.Pharm	III	341316(41)	Pharmaceutics -IV (Physical Pharmacy-I)	1.Define Physical Properties of Pharmaceutical Formulations, Explore Principle and mechanism of dispersion system.
				2. Solve difficult problems using viscosity and Rheology. Use Theory and principle of Surface active agent and flow of liquid.
				3. Define and recall fundamental physical theories of matter in the development of dosage forms.
				4. Select proper physical and chemical principles in quality control of designed dosage forms
B.Pharm	III	341317(41)	harmaceutical Analysis	1. know about fundamentals of analytical chemistry and principles of electrochemical analysis of drugs
				2. Able to understand the procedure for estimation of pharmaceutical compounds.
B.Pharm	III	341319(41)	Pharmacognosy- II	1. Identify, classify, isolation, analyze, the medicinal plant and their properties.
				2. Apply the use of medicinal plant, its industrial importance and cultivation of plant.
				3. Illustrate various pharrmacognostic parameters of crude drugs.
B.Pharm	IV	341417(41)	Pharmaceutics -VI	1. Design and develop new technologies (equipment based) in Pharmaceutical industry.
				2. Analyze the use of correct material for construction of Pharmaceutical plant.
				3. Employ the industrial hazards and safety measures in industry.
B.Pharm	IV	341410(41)	Pharmaceutical Microbiology	1. Define and classify the historical development and scope of microbiology.
				2. Employ the knowledge to control the microbe by physical and chemical methods.
				3. Judge and control the communicable diseases, sewage and sewage disposal, food spoilage and prevention of foods from microbes.
B.Pharm	IV	341418(41)	Pharmaceutical Chemistry-IV (Organic chemistry)	1. students understand the stereochemical aspects of organic compounds.
				2. students able to explain the role of reagents in the preparatio of organic compounds.
				3. students know about reaction mechanism and condition for synthesis of different organic compounds i.e. alcohols, carboxylic acids, hydrocarbons, carbonyls etc.
B.Pharm	IV	341419(41)	rmaceutical Biochemi	1. students understant the molecular levels of the chemical process associated with living cells.
				2. students able to explain biochemical facts and the principles to understandthe metabolism of nutrient molecules in physiological and pathological conditions.
				3. students have knowledge about genetic organization ofthe mammalian genome and hetero & autocatalytic functions of DNA.
B.Pharm	IV	341416(41)	Pharmaceutics -V	1. Students will be acquainted with basics of measurement system and functioning of CRO.
				2. Students are able to acquire knowledge and overview of Transducers.
				3. Students are familiar with industrial applications of Transducers.
B.Pharm	V	341516(41)	Pharmaceutics -VII	1. Operate different techniques like drying, distillation, evaporation, extraction, crystallization, mixing, filtration and centrifugation.
				2. Design and develop pilot plant scale up technique to be used in construction of pharmaceutical plant.

B.Pharm	V	341518(41)	Pharmacognosy-III	1. Demonstrate the biosynthetic study and basic metabolic pathways of natural compounds.
				2. Describe the phytochemical screening techniques and able to identify the phyto constitutes of plants.
				3. Evaluate the systemic Pharmacological study of Alkaloid drugs.
B.Pharm	V	341517(41)	Medicinal Chemistry-I	1. students get the basic Principles of Medical Chemistry
				2. able to understand the role of computer in drug development.
				3. studied the chemistry of different drug used in the treatment of problem related to the autonomic nervous system, GIT etc.
B.Pharm	V	341510(41)	Pharmaceutics VIII (Cosmetic technology)	1. Develop the skill in cosmetic and toilet preparations.
				2. Design the concept of cosmetic according to application on the different parts of body.
				3. Employ the evaluation and packing skill for different form of cosmetics.
B.Pharm	VI	341617(41)	Medicinal Chemistry-II	1. to evaluate the method like high throughput screening in drug evaluation.
				2. studied the chemistry of different drug used in the treatment of problem related to the central nervous system, blood etc.
B.Pharm	VI	341616(41)	Pharmaceutics -IX (Pharmaceutical Technology- I)	1. Employ the Pharmaceutical technology used in production of solid, liquid and parental dosage forms with good manufacturing practices.
				2. Formulate the blood product, plasma substitute, aerosols and sterile dosage forms..
				3. Design and development of dosage form for large volume production and scale-up techniques.
B.Pharm	VI	341618(41)	Pharmacology - II	medication(s) for the effective pharmacotherapy of a given disease or condition in a specific patient.
				2. Apply knowledge of the pharmacology of the major drugs and drug classes currently used in medical practice, together with both disease-specific and patientspecific factors to select the most appropriate
				3. Discuss the theoretical considerations and principles that underlie the successful pharmacotherapy of the major diseases and conditions.
				4. Discuss the basic principles of toxicology; the mechanisms by which excess exposure to certain drugs, toxins, chemicals, heavy metals and poisons can lead to adverse toxicological effects; and the basic principles of clinically managing the poisoned patient. .
B.Pharm	VI	341610(41)	Pharmaceutical Biotechnology	1. Understand and recall the historical development in Pharmaceutical biotechnology.
				2. Describe the basic principle of antigen antibody reaction mechanism related to immunity of human body.
				3. Employ the knowledge in to genetic and recombination technology and microbial transformation in industrial biotechnology.
B.Pharm	VII	341716(41)	Pharmaceutics –X (Pharmaceutical Technology -II)	
				2. Use the safe and targeted delivery of drug.
				3. Develop the pilot plant scale up techniques
B.Pharm	VII	341717(41)	Pharmaceutics-XI (Biopharmaceutics & Pharmacokinetics)	
				2. Describe biopharmaceutical study for development of different dosage form.
				3. Design the Bioavailability and Bio- equivalence study of new drugs dosage forms and its use in Clinical research.
B.Pharm	VII	341718(41)	Medicinal Chemistry-II	1.know the preparation method of the chemical molecule of drugs used in treatment of cancer, cardiovascular systems, malaria, diabetes etc.
				2. get the knowledge about steroidal compounds along with structural modification and adverse reactions.
B.Pharm	VII	341710(41)	Pharmacognosy- IV	
				2. Develop the new herbal formulation on the basis of aurveda principle as per ayurvedic pharmacopoeia.
				3. Design the plant tissue culture techniques and its application in Pharmacy.
B.Pharm	VIII	341815(41)	Pharmaceutics-XII	1. Employ the comprehensive knowledge of novel drug delivery system.
				2. Use the safe and targeted delivery of drug.
				3. Develop the pilot plant scale up techniques.

B.Pharm	VIII	341817(41)	Pharmaceutical Analysis- IV	1. Develop new analytical technique for bulk drug and dosage form by sophisticated instrumental techniques.
				2. Design and develop the validation protocol as per Pharmacopoeia guidelines.
				3. Evaluate the impurity in drug substance and formulations as per ICH guidelines.
B.Pharm	VIII	341816(41)	Pharmaceutical Analysis- III (instrumental)	1. get the complete knowledge about different techniques used in evaluation of drug.
				2. understand the principal and application of different types of spectroscopy and chromatographical techniques for phamaceutical analysis.
B.Pharm	VIII	341819(41)	Pharmaceutics- XIII	1. Understand and recall laws and acts depicted in Drug and Cosmetic act 1940.
				2. Understand the Indian regulatory legislation for drug and Pharmaceutical Industries.