DR. SAU. KAMALTAI GAWAI INSTITUTE OF ENGINEERING AND TECHNOLOGY, DARAPUR

PEO, PO & PSO (ALL BRANCHES)

Programm Outcomes:

Engineering Graduates will able to:

PO 1: Engineering knowledge:
Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO 2: Problem analysis:
Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences

PO 3: Design/development of solutions:
Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO 4: Conduct investigations of complex problems:
Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5: Modern tool usage:

Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO 6: The engineer and society:

Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO 7: Environment and sustainability:

Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Ethics:

Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO 9: Individual and teamwork:

Function effectively as an individual, and as a member or leader in diverse teams, and in multi-disciplinary settings.

PO 10: Communication:

Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO 11: Project management and finance:

Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multi-disciplinary environments.

PO12: Life-long learning:

Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

MECHANICAL ENGINEERING

Programm Education objectives:

PEO.1 Acquire the fundamental knowledge in Basic Sciences, Thermal, Design, and Manufacturing Technologies.

PEO.2 Develop an ability to interpret and analyze data, formulate and design acceptable solutions to industrial problems.

PEO.3 Effectively function in a team environment with ethical attitude and interact with people of diverse background.

PEO.4 Pursue higher studies / research in core / allied domains

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PEO.5 Secure entry level position in Public / Private sector organizations.

Programm Specific Outcomes:

PSO.1 Demonstrate an ability to apply the acquired knowledge in core Mechanical Engineering areas

.
PSO.2 Resolve technical and social issues with imagination, creativity, confidence and responsibility.

PSO.3 Enhance professional career by accepting challenging tasks through lifelong learning, core competency and team spirit.

PSO.4 Demonstrate awareness towards socio-economical, environmental and ethical aspects.

CIVIL ENGINEERING

Programm Education Objectives:

PEO 1: To prepare graduates with a sound fundamental and advanced knowledge in mathematical and civil engineering subjects, which is necessary to meet the need civil engineering industry.

PEO2: To prepare graduate in civil engineering for successful careers and make them to get entry level Position in civil engineering firms and government organizations.

PEO 3: To provide the students with a comprehensive and balanced knowledge of the several sub Branches of civil engineering to pursuit higher degree in civil engineering and lifelong learning.

PEO 4: To create an understanding among the students and aware them about social responsibility ethical standard and environmental issues.

Program Specific Outcomes:

PSO.1: Professional Knowledge:
To educate students in a manner that they should acquire knowledge in mathematics, science and engineering fundamentals to serve the society

PSO.2: Design capability:
To provide relevant engineering solutions in planning, analyzing, designing and execution of civil engineering projects

PSO.3: Higher Studies:
To prepare students to pursue post-graduation and research in civil engineering and allied fields

PSO.4: Professionalism:
To train students so that they can consult, work and contribute to the infrastructural development projects under taken by government and private sector by adapting modern trends in civil engineering.

COMPUTER SCIENCE & ENGINEERING

Programm Education Objectives:

PEO1: Acquire the fundamental and advanced knowledge in Computer Science and Engineering subjects along with additional knowledge in the subjects
like Mathematics, Basic Sciences and inter-disciplinary courses which enable them to solve real life problems.

PEO2: Succeed in getting the engineering positions in Computer Software
and Hardware Industries, Government Organizations at regional, national and international levels.

PEO3: Succeed in the pursuit of higher studies and continue with life-long learning.

PEO4: Aware of social responsibility, ethical standards and environmental issues to serve the society better.

Programm Specific Outcomes:

Students will be able to
PSO.1: Solve problem using Basic Maths, Discrete Structure, Theory of Computation and knowledge of Programming, Data Structures.

PSO.2: Design and developed software solutions by applying the knowledge in Algorithms, DBMS, Computer Network, Artificial Intelligent and Software Engineering.

PSO.3: Analyze and understand Computer Architecture, Basic and Digital Electronics, Operating System and Object Oriented System to provide better solution.

PSO.4: Demonstrate awareness towards Professional Ethics, Environment Aspects, Social Issue and readiness for life long learning

ELECTRONICS & TELECOMMUNICATION ENGINEERING

Programm Education Objectives:

PEO.1:
The Graduates shall acquire the fundamental and advanced knowledge in Electronics & Telecommunication Engineering subjects along with additional knowledge in mathematics, basic sciences, inter-disciplinary engineering, management and economics, enabling them to solve basic and complex engineering problems.

PEO.2:
The Graduates will succeed in getting the entry-level engineering positions in Allied Industries, Design & Fabrication firms and in Government Sectors at regional, national and international levels.

PEO.3:
The Graduates will succeed in the pursuit of higher studies and will continue life-long learning.

PEO.4:
The Graduates will be aware of social responsibility, ethical standards and environmental issues to serve the society better.

Programm Specific Outcomes:

PSO.1: Understand the basic concepts in Electronics & Telecommunication Engineering and apply them to the respective areas.

PSO.2: Solve complex engineering problems using latest hardware and software tools, along with analytical skills.

PSO.3: Understand the concepts of Data Communication Networking, Optical Fiber and Wireless Technology along with ability to classify, analyze and implement latest communication technologies.

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First Year Engineering

Course Number: 1A1	
Course Name: Engineering Mathematics-I	
Sr. No.	**Course outcomes**
1A1.1	Students get fundamental knowledge of successive differentiation.
1A1.2	Students get basic concepts of partial differentiation.
1A1.3	Students learn maxima and minima and also application of partial differentiation i.e. Jacobian, Lagrange's method.
1A1.4	Students are familiar with complex number.
1A1.5	Student gains fundamental knowledge of differential equations of various types.
1A1.6	Students are familiar with applications of differential equation i.e. orthogonal trajectory and in electrical field.

Course Number: 1A2	
Course Name: Engineering Physics	
Sr. No.	**Course outcome**
1A2.1	Students gain the fundamental knowledge in Physics about the semiconducting materials, semiconducting devices &it's applications.
1A2.2	Students should correlate the theoretical principles and fundamentals of modern aspects in Physics with application oriented studies of Engineering like LASER.
1A2.3	Students get the knowledge about electromagnetic phenomena and its applications.
1A2.4	Students learn about optical phenomena.
1A2.5	Students get basic knowledge about fibre optics and it's applications.
1A2.6	Students learn fundamental knowledge about ultrasonic and acoustics.

Course Number: 1A3	
Course Name: Engineering Mechanics	
Sr. No.	**Course outcome**
1A3.1	Students get fundamental knowledge of forces and moments through different problems.
1A3.2	Students get knowledge of static equilibrium equations and its application to the problems of statics.
1A3.3	Students get aware of work energy equation for motion of particle and system of particles.
1A3.4	Students knows the concept of friction.
1A3.5	Students get basic concept of motion, kinematics of motion.
1A3.6	Through concept of dynamic equilibrium and D'Alemberts principle students get aware of basic concepts of kinetics.

Course Number: 1A4	
Course Name: Engineering Drawing	
Sr. No.	**Course outcomes**
1A4. 1	Students get familiarized with different drawing instruments and their applications.
1A4. 2	Students gain the knowledge of different types of curves, loci of points and applications of different mechanism used in engineering practice.
1A4. 3	Students gain the knowledge of representation of plane geometrical objects having two dimensions such as square, rectangle, quadrilateral, etc. on a drawing sheet.
1A4.4	Students gain the knowledge of representation of solid geometrical objects having three dimensions such as cube, cylinder, cone, prisms, pyramids, sphere etc. on a drawing sheet.
1A4.5	Students get the knowledge of theory of projections and get familiar about the first angle and third angle methods of projections.
1A4.6	Students get the knowledge of pictorial projections in which the description of the objects is completely understood in one view.

Course Number: 1B1	
Course Name: Engineering Mathematics-II	
Sr. No.	**Course outcomes**
1B1.1	Students get fundamental knowledge of matrix through different problems.
1B1.2	Students get knowledge of Fourier series for different functions and intervals.
1B1.3	Students get aware of vectors, differential under integral sign and curve tracing.
1B1.4	Students know the concept of reduction, beta gamma functions and applications of curve tracing (rectification).
1B1.5	Students get aware of double integration its application area and Mean, RMS.
1B1.6	Students get knowledge of triple integration and its application to find volume.

Course Number: 1B2	
Course Name: Engineering Chemistry	
Sr. No.	**Course outcome**
1B2.1	Students gain the fundamental knowledge in water softening and calculation for the chemicals required for water softening.Students learn about the chemical reaction involved in corrosion, its preventing methods and latest applications of nanochemistry in various fields.
1B2.2	Students learn about the chemical reaction involved in corrosion, its preventing methods and latest applications of nanochemistry in various fields.
1B2.3	Students get knowledge about the manufacturing process of cement, its properties and also familiarized with the nucleaer reactions and its utilization.
1B2.4	Students learn about the importance of fuels and lubricants.
1B2.5	Students get familiarized with the various examples of polymers and its uses.
1B2.6	Students get knowledge about the different segments of environment, various atmospheric effects and controlling methods to remove particulates from atmospheric gases.

Course Number: 1B3	
Course Name: Computer Programming	
Sr. No.	**Course outcomes**
1B3.1	Understand the basic terminology used in computer programming.
1B3.2	Write, compile and debug program in C language.
1B3.3	Use of different tokens(Operators/ Data types/ Variables) in c program.
1B3.4	Design program involving decision structures, loop and functions.
1B3.5	Understand the dynamics of memory by use of pointers.
1B3.6	Use different Data Structures such as array and create/update basic data files.

Course Number:1B4	
Course Name: Electrical Engineering	
Sr. No.	**Course outcome**
1B4.1	Able to define the basics of electrical engineering.
1B4.2	Gained the knowledge of basic electrical laws and improved ability of solving Electrical Network.
1B4.3	Gained the knowledge of magnetic circuits
1B4.4	Student gained knowledge about understanding AC circuits, power factor, RMS, Average value of alternating voltage/ current.
1B4.5	Gained the knowledge of operation and working principle of DC motor and its type.
1B4.6	Gained the knowledge of earthing.

DEPARTMENT OF MECHANICAL ENGINEERING

THIRD SEMESTER

Course Number:	**3ME03**
Name of Course:	**Fluid Power I**

Sr.no	**Course Outcomes**
3ME03.1	Students will get familiar to fluid motion, mechanical properties of fluid, manometers, pressure variations and forces acting at various points in a fluid.
3ME03.2	Students will study about buoyancy of floating bodies and kinematics and dynamics of fluid flow, they also study about continuity equation and Bernoulli's equation and their application.
3ME03.3	Students gain the knowledge of Dimensional analysis and its homogeneity and their application in real life equations to find out the relation between the involved factors.
3ME03.4	Students understand the difference between the laminar and turbulent flow and they are able to determine the nature of flow by calculating the Reynolds number, they also study about the boundary layer concept.
3ME03.5	Students study about different types of losses and are able to calculate the losses in a pipe flow.
3ME03.6	Students gain the Knowledge of various efficiencies of fluid flow like mechanical, volumetric and overall efficiency.

Course Number:	**3ME04**
Name of Course:	**Engineering Thermodynamics**

Sr.no	**Course Outcomes**
3ME04.1	Students will exhibit the concept of Engineering Thermodynamics & its importance to industry.
3ME04.2	Students will demonstrate the skills for solving numerical problems based on enthalpy/entropy.
3ME04.3	Students will exhibit the knowledge of fundamentals of steam and reason behind its usage in power plants.
3ME04.4	After studying this course, students will be able to understand importance & working of various engineering devices based on heat and work interaction and basic cycles of their operations.
3ME05.5	By understanding the importance of thermal cycles, students will appreciate the role of thermodynamics in day to day activities.
3ME06.6	The course content will help to build sound foundation for advanced subjects in thermal engineering.

Course Number:	3ME05
Name of Course:	Manufacturing Process I

Sr.no	Course Outcomes
3ME05.1	Students will demonstrate the knowledge of manufacturing processes and its application to produce various products, services as demanded in society, by large
3ME05.2	Students will be capable of understanding operations in melting furnaces, pattern making, mold preparation, casting manufacturing, defect testing
3ME05.3	Students will be learning and applying principles of hot, cold working processes in industry
3ME05.4	Students will exhibit their knowledge in the field of mechanical joining, surface treatment processes useful in different applications
3ME05.5	Students will have proactive development to participate and succeed in industry spheres

FOURTH SEMESTER

Course Number:	4ME01
Name of Course:	Basic Electrical Drives And Control

Sr.no	Course Outcomes
4ME01.1	Students will demonstrate the knowledge to basic concepts of electrical drives and mechatronics.
4ME01.2	Students will demonstrate the concept of A.C. motors.
4ME01.3	Students will be able to understand the characteristics of D.C. motors
4ME01.4	Students will exhibit the knowledge of the sensor & transducers.
4ME01.5	Students will demonstrate the conventional method of speed control of AC & DC motors.
4ME01.6	Students will be aware of various electrical drives for industrial applications.

Course Number:	**4ME02**
Name of Course:	**Engineering Metallurgy**

Sr.no	**Course Outcomes**
4ME02.1	Students get familiarized with different types of materials, their properties and crystal structure.
4ME02.2	Students gain the knowledge of Iron-Carbon Equilibrium diagram and allotropy of iron at different temperatures.
4ME02.3	Students gain knowledge about alloy steels and their classification as well as applications.
4ME02.4	Students learn about different ferrous metals like cast iron and its types; they also gain knowledge about nonferrous metals like brasses, bronzes and their alloys.
4ME02.5	Students gain a detailed knowledge of all the heat treatment processes like annealing, normalizing, hardening, etc., they also learn about surface hardening and core hardening processes.
4ME02.6	Students gain the knowledge of hot and cold working processes, their advantages, disadvantages and applications, they also learn about various factors related to mechanical working of metals like stress strain curve, slip, twinning, etc.
4ME02.7	Students study about the powder metallurgy process and all the steps involved in this process like powder production, blending, compacting, etc., they also study their advantages, disadvantages and applications according to their properties.

Course Number:	**4ME03**
Name of Course:	**Energy Conversion I**

Sr.no	**Course Outcomes**
4ME03.1	Students will exhibit the understanding about various components of thermal power plant.
4ME03.2	Students will demonstrate the skills for solving numerical problems related to boiler, nozzle, turbines, and condenser.
4ME03.3.	Students will exhibit the knowledge boiler accessories and boiler mountings.
4ME03.4	After studying this course, students will be able to understand various coal and ash handling systems used in power plants.
4ME03.5	Students will be able to understand complexity of real problems in the field of thermal power generation process and environmental impact of the same.
4ME03.6	The course content will help to develop habit towards application of basic fundamentals to problems of power plants

Course Number:	**4ME04**
Name of Course:	**Manufacturing Processes - Ii**
Sr.no	**Course Outcomes**
4ME04.1	Students will study the basic concept of metal cutting and various manufacturing processes.
4ME04.2	Students will know the working of lathe machine for performing various operations.
4ME04.3	Students will study drilling, boring and broaching.
4ME04.4	Students will demonstrate the knowledge of milling & gear production machines.
4ME04.5.	Students will demonstrate the knowledge of grinding operations.
4ME04.6	Students will understand the various unconventional machining processes

Course Number:	**4ME05**
Name of Course:	**Machine Design And Drawing - I**
Sr.no	**Course Outcomes**
4ME05.1	Students will demonstrate the concept of machine drawing, sectional and missing views.
4ME05.2	Students will exhibit the skills of development and interaction of cube, prism, cylinder, pyramid cone etc
4ME05.3	Students will study the fundamentals of machine design and will be able to use design considerations in design process.
4ME05.4	Students will exhibit the knowledge of design procedure of riveted joints, welded joints, knuckle joint etc.
4ME05.5	Students will be able to apply design procedure to helical springs and power screw.
4ME05.6	Students will be benefitted by utilizing the course concepts in project work and show confidence in industry.

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FIFTH SEMESTER

Course Number:	**5ME01**
Name of Course:	**Production Technology**

Sr.no	**Course Outcomes**
5ME01.1	Students will exhibit the concept of Inspection, Quality control & its importance to industry.
5ME01.2	Students will gain the knowledge of recent techniques, tools & equipments are used to improve the overall performance of the product with better quality, reduction in time and cost.
5ME01.3	Students will reveal the importance of improving production & productivity using work study approach
5ME01.4	Students will exhibit the knowledge of various measurement standards & techniques in the industry.

Course Number:	**5ME02**
Name of Course:	**Heat Transfer**

Sr.no	**Course Outcomes**
5ME02.1	Students will understand the concepts related to modes of heat transfer and different laws of heat transfer.
5ME02.2	Students will be able to understand thermal conductivity and various parameters affecting thermal conductivity of materials.
5ME02.3	Students will have the idea about the radiation and concept of black body and grey body.
5ME02.4	Students will reveal the importance of fins for improving heat exchange between system and surroundings.
5ME02.5	Subject will provide students with number of mathematical relations involve in heat exchange, giving them hands on experience about mathematical analysis of system.
5ME02.6	The course content will help students to analyze energy losses due to heat transfer to surrounding in day to day activities, may motivate them to use energy efficiently.

Course Number:	**5ME03**
Name of Course:	**Measurement System**
Sr.no	**Course Outcomes**
5ME03.1	Students get familiarized with the concept of measurement, generalized measurement systems and their working and applications.
5ME03.2	Students learn about different static and dynamic characteristics of measuring instruments.
5ME03.3	Students gain the knowledge about type and order of system and different standard inputs.
5ME03.4	Students learn about various instruments used for measurement of strain, pressure, speed, force, flow, temperature, etc. measurement instruments.

Course Number:	**5ME04**
Name of Course:	**Theory Of Machines - I**
Sr.no	**Course Outcomes**
5ME04.1	Students will get familiarize with common mechanisms used in machines and everyday life
5ME04.2	Students will be able to calculate movability (number of degrees-of-freedom) and enumerate rigid links and types of joints within mechanisms.
5ME04.3	Students will be able to conduct a complete velocity & acceleration analysis of the mechanism
5ME04.4	Students will be able to conduct synthesis of basic mechanisms
5ME04.5	Students will exhibit the practical for study of brake, clutch, dynamometer & gear train

Course Number:	5FECE05
Name of Course:	Basics Of Building Construction

Sr.no	Course Outcomes
5FECE05.1	Students will be able to understand the basic concepts of structures and types of foundation
5FECE05.2	Students will be able to understand the different type of masonry, floors and roofs
5FECE05.3	Students will be able to distinguish between the types of doors, windows, arches, lintels, staircases and scaffoldings
5FECE05.4	Students will be able to understand special aspects of construction, damp proof, sound proof and fire proof construction and construction joints

SIXTH SEMESTER

Course Number:	6ME01
Name of Course:	Fluid Power - Ii

Sr.no	Course Outcomes
6ME01.1	Students will demonstrate basic concept of prime movers and turbines.
6ME01.2	Students will develop the knowledge of centrifugal pump.
6ME01.3	Students will reveal the importance of axial flow pump, water lifting devices and CFD.
6ME01.4	Students will understand the concept of positive displacement pumps.
6ME01.5	Students will capable to solve the elementary treatment on compressible fluid flow.
6ME01.6	Students will understand the concept of hydrostatic system and hydrokinetic system.
6ME01.7	Students will use the knowledge of Fluid Power in developing project work.

Course Number:	**6ME02**
Name of Course:	**Computer Software Applications**
Sr.no	**Course Outcomes**
6ME02.1	Ability to define the terminology, features, classifications, and characteristics embodied in database systems
6ME02.2	Ability to understand the functional dependencies and design of the database.
6ME02.3	Use of an SQL interface of a multi-user relational DBMS package to create, secure, populate, maintain, and query a database
6ME02.4	Ability to create a database for different applications and the program relating to it.

Course Number:	**6ME03**
Name of Course:	**Control System Engineering**
Sr.no	**Course Outcomes**
6ME03.1	Students get familiarized with the concept of control system and transfer function.
6ME03.2	Students will be able to formulate mathematical equations of mechanical systems and determine the transfer function.
6ME03.3	Students learn about different types of standard inputs, response of first and second order system to standard inputs, time domain specifications and steady state errors.
6ME03.4	Students gain the knowledge about the concept of stability and different methods to determine the stability of a control system.

Course Number:	6ME04
Name of Course:	Theory Of Machines-Ii

Sr.no	Course Outcomes
6ME04.1	Students will be able to analyze static force analysis of mechanisms
6ME04.2	Students will be able to understand the concept of equivalent dynamical system
6ME04.3	Students will be able to understand turning moment diagram and applications of flywheel
6ME04.4	Students will understand the gyroscopic effects in ships, aeroplanes and road vehicles.
6ME04.5	Students will know how to determine the natural frequencies of different vibrations
6ME04.6	Students will be able to understand static & dynamic balancing of rotating & reciprocating masses

Course Number:	6FEIT05
Name of Course:	E-Commerce

Sr.no	Course Outcomes
6FEIT05.1	Students will be able to get familiarized with E-Commerce and be able to identify and describe its types, the unique features of E-Commerce technology and discuss their business significance.
6FEIT05.2	Students will be able to identify the key components of E-Commerce business models, describe the major B2C, B2B business models and recognize business models in other emerging areas.
6FEIT05.3	Students will be able to build an E-Commerce website using server software and hardware tools
6FEIT05.4	Students will be able to understand online security and payment system, security threats in the environment, some technology solutions, Management Policies, business procedures and public laws, payment systems.

Course Number:	6ME06
Name of Course:	Communication Skill

Sr.no	Course Outcomes
6ME06.1	Students will be able to aquire the knowledge of grammar and unseen passage.
6ME06.2	Students will be able to understand the importance of communication, important aspects of non-verbal communication and types of graphs
6ME06.3	Students will be able to write the various formats of day to day written communication and will also understand the importance of interpersonal skills.

SEVENTH SEMESTER

Course Number:	**7ME01**
Name of Course:	**Machine Design and Drawing II**

Sr.no	**Course Outcomes**
7ME01.1	Understand and implement the basics in design of mechanical components and their applications
7ME01.2	Understand and theoretically design various shafts, I.C. engine parts, governors used in a machine
7ME01.3	Understand different drive systems, bearing designs and gear terminology
7ME01.4	Understand the principles and designing aspects of flywheel, keys and couplings.

Course Number:	**7ME02**
Name of Course:	**Energy Conversion – Ii**

Sr.no	**Course Outcomes**
7ME02.1	Students will exhibit the working of different types of compressors.
7ME02.2	Students will understand the principle of working of refrigeration and air conditioning systems and its applications.
7ME02.3	Students will be able to demonstrate the use of gas turbines in power plants.
7ME02.4	Students will understand various nuclear reactions and issues related to working and maintenance of nuclear power generation.
7ME02.5	Students will be able to apply the knowledge in order to develop various renewable energy systems.

Course Number:	7ME03
Name of Course:	Industrial Management And Costing

Sr.no	Course Outcomes
7ME03.1	Students will be able to understand the working of business environment. & familiar with the management thoughts, its evolution and functions.
7ME03.2	Students will demonstrate the marketing skills and knowledge related to international marketing.
7ME03.3	Students will be able to handle human resources and plan according to requirements.
7ME03.4	Students will be able to exhibit standard and scientific techniques in materials management.
7ME03.5	Students will demonstrate to calculate weight, machining time & estimated costs.
7ME03.6	Students will be able to understand the financial statement of the organization.
7ME03.7	Students will demonstrate to calculate cost sheet of industries and depreciation of an asset.

Course Number:	7ME04
Name of Course:	AUTOMATION ENGINEERING

Sr.no	Course Outcomes
7ME04.1	Students will be able to understand the basics of automation and will be able to handle real time problems of automated flow lines like line balancing.
7ME04.2	Students will gain the skills to write NC/CNC programs for given profile.
7ME04.3	Students will understand the basic concepts, terminologies related to robots, their different configurations and industrial applications.
7ME04.4	Students will get an insight in to the philosophy of G.T. and concept of FMS.
7ME04.5	Student will develop a thinking/ understanding about the factory of future along with the automated inspection techniques.

Course Number:	7ME05
Name of Course:	Non Conventional Energy Sources

Sr.no	Course Outcomes
7ME05.1	Students will understand concept of renewable and non-renewable sources.
7ME05 .2	Students will understand the basic concept of radiation transmission through covers and solar energy collections.
7ME05 .3	Students will demonstrate the basic concept of Solar energy utilization and storage.
7ME05 .4	Students will be able to demonstrate the concept of energy from ocean and wind.
7ME05 .5	Students will understand the concept of bio-mass energy resources.
7ME05 .6	Students will understand the concept of direct energy conversion and fuel cell.
7ME05 .7	Students will exhibit the knowledge of NES in development of project work.

EIGHTH SEMESTER

Course Number:	8ME01
Name of Course:	Automobile Engineering

Sr.no	Course Outcomes
8ME01.1	Students will be able to understand the basic structure of automobile, different types of automobile, different components and their locations.
8ME01.2	Students will acquire knowledge about the ignition system and electrical systems in automobile.
8ME01.3	Students will recognize the basic concepts, terminologies related to fuel feed systems and cooling system in automobile.
8ME01.4	Students will get an insight in to the transmission system of automobile.
8ME01.5	Student will develop a thinking/ understanding about the suspension and braking system used in automobiles.
8ME01.6	Students will become aware about the safety and pollution control norms adopted by automotive industries.

Course Number: 8ME02	
Name of Course: Refrigeration And Air Conditioning	
Sr.no	**Course Outcomes**
8ME02.1	Studets will be able to understand and analize the Vapour Compression Refrigeration cycle and get familiar with various types of refrigerants.
8ME02.2	Studets can know about the working of various multi comprssion and multi evaporation systems.
8ME02.3	Students will get familiarized with the various types of devices used in VCR system.
8ME02.4	Students will be intoduced to various psychometric processes, properties and different air conditioning systems.
8ME02.5	Students will be able to desigh the various air conditioning systems as per the required comfort conditions.

Course Number:	**8ME03**
Name of Course:	**Internal Combustion Engine**
Sr.no	**Course Outcomes**
8ME03.1	Students will be able to- Differentiate SI and CI engines based on fuel, air-standard cycle, fuel feed system, efficiency, etc.
8ME03.2	Students will be able to-Understand the types of fuels and their alternatives for I.C. Engines.
8ME03.3	Students will be able to-Differentiate phase diagrams for combustion in SI and CI engines with stages of combustion.
8ME03.4	Students will be able to-Understand the purpose of Combustion Chambers.
8ME03.5	Students will be able to-Calculate the power output and various losses incurred in the engines.

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Course Number:	**8ME04**
Name of Course:	**Operation Research Technique**

Sr.no	**Course Outcomes**
8ME04.1	Students will exhibits the knowledge of OR and OR models.
8ME04.2	Students will be able to solve transportation problems, assignment problems and related issues.
8ME04.3	Students will understand the concept network models, CPM and PERT analysis.
8ME04.4	Students will understand the concept of waiting line model, and sequencing and its related issues.
8ME04.5	Students will understand the concept of replacement models and solve the problem on simulation techniques.
8ME04.1	Students will understand the concept of dynamic programming and applications.

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DEPARTMENT OF CIVIL ENGINEERING

THIRD SEMESTER

Course Number:	3CE01
Name of Course:	Mathematics III

Sr.No.	Course Outcomes
3CE01.1	Students get fundamental knowledge of higher order differential equations.
3CE01.2	Students can apply Laplace transform to solve Linear differential equations, simultaneous differential equations and its applications to engineering problems.
3CE01.3	Students get aware of partial differential equations.
3CE01.4	Students can apply numerical methods to obtain approximate solutions to mathematical problems.
3CE01.5	Students understand concept of complex analysis,
3CE01.6	Students analyze and interpret statistical data using appropriate probability distributions.

Course Number:	3CE02
Name of Course:	Strength of Materials

Sr.No.	Course Outcomes
3CE02.1	Students will be able to understand concepts of stress and strain and their use in analysis and design
3CE02.2	Students will be able to draw the shear force diagram and bending moments diagram for various types of loading
3CE02.3	Students will be able to analyze the behavior of beam under bending and shear
3CE02.4	Students will be able to analyze stresses in thin cylinders.
3CE02.5	Students will be able to determine strength of different materials
3CE02.6	Students will be able to determine slope and deflection of statically determinant beams

Course Number:	3CE03
Name of Course:	Transportation Engineering-I

Sr.No.	Course Outcomes
3CE03.1	Students will able to arrange surveys and materials testing road planning.
3CE03.2	Students will able to analyze and apply the various design parameters for geometric design of various roads with proper alignment based on planning principles
3CE03.3	Students will able to analyze and construct different types of pavements.
3CE03.4	Students will be able to identify traffic characteristics, interpretation of traffic data and its uses and traffic safety
3CE03.5	Students will be able to classify various types of bridges and identify its components
3CE03.6	Students will be able to calculate the different bridge hydrology parameters.

Course Number:	3CE04
Name of Course:	Building Construction & Materials

Sr.No.	Course Outcomes
3CE04.1	Students will be able to understand types of buildings, the basic concepts of structures and types of foundation.
3CE04.2	Students will be able to understand the different type of masonry, floors and roofs
3CE04.3	Students will be able to draw and execute foundation plan also students understand the aspects of construction
3CE04.4	Students will be able to distinguish between the types of doors, windows, arches, lintels, chajjas
3CE04.5	Students will be able to understand functions, types and suitability of staircases
3CE04.6	Students will be able to understand special aspects of construction such as damp proofing, fire proofing and sound proofing

Course Number:	3CE05
Name of Course:	Engineering Geology

Sr.No.	Course Outcomes
3CE05.1	Students will be able to indentify the type of rocks and their properties
3CE05.2	Students will be able to indentify the structural elements of rock bed such as fold, fault, joint and unconformity
3CE05.3	Students will be able to draw geological profile and they are bale to measure the thickness of rock beds.
3CE05.4	Students will be understsnad how to use knowledge of geology on field.
3CE05.5	Students will be able to identify types of minerals and their properties.
3CE05.6	Students will gain knowledge about earthquake.

Course Number:	3CE06
Name of Course:	Environmental Studies

Sr.No.	Course Outcomes
3CE06.1	Students gain the fundamental knowledge about environmental studies and its importance.
3CE06.2	Students learn about inter-linking of social issues like global warming, sustainable, ozone layer depletion and environment.
3CE06.3	Students learn about causes and effects of increase in size of human population on environment, society, employment and crises for all basic needs
3CE06.4	Students get familiarized with renewable and non-renewable natural resources and begin to appreciate their commitments to save the planet by conserving natural resources
3CE06.5	Students apply organic farming practices to solve the social & environmental problems.
3CE06.6	Students learn about desertification & formulate various methods to solve the problem of desertification.

FOURTH SEMESTER

Course Number:	4CE01
Name of Course:	Geotechnical Engineering-I

Sr.No	Course Outcomes
4CE01.1	Students will be able to understand the properties of soil such as water content, porosity, density and the able to classify the different types of soil.
4CE01.2	Students will be able to the analyze the engineering properties of soil such as compaction and their field application and quality control
4CE01.3	Students will be able to identify the path of seepage through soil also the able to calculate the discharge of the soil(permeability)
4CE01.4	Students will be able to understand the concept of consolidation and to find out compression index, swelling index, coefficient of compressibility and pre consolidation pressure.
4CE01.5	Students will be able to understand different stresses acting on soil sample under different loading condition.
4CE01.6	Students will be able to understand the concept of shear strength, and they able to investigate unconfined compressive strength, cohesion and angle of internal friction of soil.

Course Number:	4CE02
Name of Course:	Fluid Mechanics-I

Sr.No	Course Outcomes
4CE02.1	Students will be able to understand the properties of fluid such as viscosity, surface tension as well as their applications. Students will be able to measure the pressure by various pressure gauges.
4CE02.2	Students will be able to calculate the forces on immersed bodies also the are able to apply Bernoulli's equation based on Law of conservation of energy.
4CE02.3	Students will be able to determine velocity of fluid, energy possessed by fluid using equations of motion.
4CE02.4	Students will be able to measure the flow through the open channel by using the various notches and weir.
4CE02.5	Students will able to distinguish the various types of flow through the pipe also they are able to calculate various losses in the pipe flow.
4CE02.6	Students will be able to apply equations to pipe networks for flow determination.

Course Number:	4CE03
Name of Course:	Theory of Structure-1

Sr.No.	Course Outcomes
4CE03.1	Students will be able to classify the structures according to their determinacy
4CE03.2	Students will be able to analyze the beams by using different methods of analysis
4CE03.3	Students will be able to draw the influence line diagram for different types of loading system
4CE03.4	Students will be able to analyze portal frames and beams by using different displacement methods
4CE03.5	Students will be able to analyze determinate structures subjected to moving loads.
4CE03.6	Students will be able to analyze three hinged arches subjected to different types of loadings.

Course Number:	4CE04
Name of Course:	Surveying-1

Sr.No.	Course Outcomes
4CE04.1	Students will be able to understand the basic concepts of plane and geodetic surveying and measure different distance and angles using basic surveying instruments
4CE04.2	Students will be able to operate instruments for measurement of elements
4CE04.3	Students will be able identify field data collection methods and prepare field notes
4CE04.4	Students will be able to calculate distances, angles and reduce levels of points
4CE04.5	Students will be able to interpret the collected data, prepare maps, and compute area volume.
4CE04.6	Students will be able to use minor instruments for measurments.

Course Number:	4CE05
Name of Course:	Reinforced Cement Concrete - I

Sr.No.	Course Outcomes
4CE05.1	Students will be able to develop ability to identify the cement & concrete, appropriate to the climate and functional aspects of the buildings
4CE05.2	Students will be able to interpret and apply fundamental knowledge in the fresh and hardened properties of concrete
4CE05.3	Students will be able to appraise different types of admixtures & chemicals with respect to the requirements
4CE05.4	Students will be able to acquire and apply fundamental knowledge in the Special types of concrete as per the special conditions
4CE05.5	Students would be able to appraise the concepts of mix design of concrete.
4CE05.6	Students would be able to apply the fundamental concepts of working stress method of design for beams and slab

FIFTH SEMESTER

Course Number:	5CE01
Name of Course:	Reinforced cement Concrete- II

Sr.No.	Course Outcomes
5CE01.1	List of water Tank & Analyse it by WSM & LSM
5CE01.2	State differentiate between Working stress and Limit stress methods
5CE01.3	To Analyze and Design components parts of the structures (slab, beams, and staircase)
5CE01.4	To Analyze and Design components parts of the structures (column & footing)
5CE01.5	Propose earthquake resistant construction
5CE01.6	Students will be able to understand ductile detailing of beams, columns and shear walls

Course Number:	5CE02
Name of Course:	Fluid Mechanics-II

Sr.No.	Course Outcomes
5CE02.1	Students will be able to understand Nikuradse's experiment, law of velocity distribution, open channel flow and energy momentum equation.
5CE02.2	Student are able to design the economical channel sections fo different shape such as rectangular, trapezodial, etc.
5CE02.3	Students will be able to comapre the various types of hydraulic jump in rectangular channel, and understand the concept of specific energy and specific energy curve.
5CE02.4	Students will be able to understand dimension and model analysis, for the various laws of fluid mechanics
5CE02.5	Students will be able to understand the various type of hydraulic turbine, their classification, working priciple, power required and efficiencies.
5CE02.6	Students understand the working of centrifugal, receprocating and Submersible pumps.

Course Number:	5CE03
Name of Course:	Building Planning and CAD

Sr.No.	Course Outcomes
5CE03.1	Students will be able to understand the importance of building drawing and basics of building drawing including scales, types of line, methods, abbreviation and graphical symbols
5CE03.2	Students will be able to develop layout plan, location plan, elevation, section and concepts of working drawing
5CE03.3	Students will be able to apply general principle of building planning
5CE03.4	Students will be able to solve problems on perspective drawing and understand various building bylaws
5CE03.5	Students will be able to do conversion of land to non agricultural land.
5CE03.6	Students will be able to understand criteria for earthquake resistant planning of building.

Course Number:	5CE04
Name of Course:	Surveying-II

Sr.No.	Course Outcomes
5CE04.1	Students will be able to calculate the horizontal and vertical distance without taping and chaining by applying principles of tachometry
5CE04.2	Students will be able to design and set out various types of simple circular curve, compound curve and transition curves
5CE04.3	Students will be able to understand basic concepts of geodetic survey for triangulation
5CE04.4	Students will be able to illustrate the methods of carrying out hydrographic and underground survey.
5CE04.5	Students will be able to apply advance surveying techniques such as Photogrammetric and Remote Sensing
5CE04.6	Students will be able to analyze the maps dawn by the using GIS and GPS

Course Number:	5FEME05
Name of Course:	Manufacturing Techniques

Sr.No.	Course Outcomes
5FEME05.1	Students will exhibit knowledge of manufacturing techniques and its application in engineering.
5FEME05.2	Students will exhibit knowledge of machining operation, sheet metal work and processes
5FEME05.3	Students will show the ability to apply various joining methods in practice.
5FEME05.4	Students will exhibit knowledge of powder metallurgy
5FEME05.5	Students will demonstrate the application of various techniques in development of project work.
5FEME05.6	Students will exhibit knowledge of Casting Methods

Course Number:	5CE06

Name of Course:	Communication Skill
Sr.No.	Course Outcomes
5CE06.1	Students will be able to acquire the knowledge of grammar and unseen passage
5CE06.2	Students will be able to understand the significance of verbal communication, organization of text, important text factors and evaluation of written communication for its effectivity and subject content.
5CE06.3	Students will learn the aspects of non verbal communication, body language and types of graphs and pictorial devices
5CE06.4	Students will be able to write the various formats of written communication like reports, proposals, notice agenda & minutes etc.
5CE06.5	Students will learn the important objectives of interpersonal skills, face to face communication, group discussion, personal interview. They will learn the methodology of conducting meetings, seminars conferences etc.
5CE06.6	Students will learn and practise the etiquettes of Email writing

SIXTH SEMESTER

Course Number:	6CE01
Name of Course:	Numerical Methods and computer Programming
Sr.No.	Course Outcomes
6CE01.1	Students will be able to handle Spread sheet software and will be able to execute program.
6CE01.2	Students will be able to handle FORTRAN language and will be able to execute program in FORTRAN language
6CE01.3	Students will be able to understands the concept of control statement and sub programs of FORTRAN language
6CE01.4	Students will be able to understand the basic concepts and develop program on matrix operations
6CE01.5	Students will be able to understand the basic concepts and develop program on numerical methods.
6CE01.6	Students will be able to apply the knowledge of FORTRAN language on various civil engineering problems

Course Number:	6CE02
Name of Course:	Design of R.C.C. and Pre-Stress Concrete Structure

Sr.No.	Course Outcomes
6CE02.1	Students get fundamental knowledge of behavior, analysis and design of flat slab.
6CE02.2	Acquire and apply fundamental in behavior, analysis and design of retaining wall.
6CE02.3	Develop ability to design combined footings.
6CE02.4	Students get fundamental knowledge of prestressing concrete, methods, losses etc.
6CE02.5	Student's gets hold on the behavior, analysis of prestressed concrete beam.
6CE02.6	Develop ability to design prestressed concrete circular water tank.

Course Number:	6CE03
Name of Course:	Water Resources Engineering-1

Sr.No.	Course Outcomes
6CE03.1	Students will be able to understand basic concepts of hydrology, evaporation, evapotranspiration, hydrological cycle and irrigation structures.
6CE03.2	Students will be able to find out rate of evaporation, evapotranspiration and understand process of infiltration.
6CE03.3	Students will be able to analyze the hydrograph, estimate the flood and study the flood control techniques.
6CE03.4	Students will be able to understand need of irrigation, concept of minor irrigation system.
6CE03.5	Students will be able to find out crop water requirement and hence to estimate the water required for irrigation.
6CE03.6	Students understands the need of water harvesting various methods of water harvesting.

Course Number:	6CE04
Name of Course:	Transportation Engineering-II

Sr.No.	Course Outcomes
6CE04.1	Students will be able to indentify functions of components of railway track
6CE04.2	Students will be able to apply existing technology to geometric design of railway track
6CE04.3	Students will be able to apply existing technology to the design, construction, and maintenance of railway physical facilities
6CE04.4	Students will be able to indentify functions of components of airport and draw its layout
6CE04.5	Students will be able to understand characteristics of components of airport
6CE04.6	Students will be able to understand necessity, types, economics, alignment, and methods of tunneling

Course Number:	6CE06
Name of Course:	Estimating and Costing

Sr.No.	Course Outcomes
6CE06.1	Students will be able to understand different methods of estimate and specifications.
6CE06.2	Students will be able to understand the concept of Cost building - schedule rates and task work.
6CE06.3	Students will be able to understand detailed concepts of earthwork estimate in road work.
6CE06.4	Students will be able to understand valuation and its purpose and types of values.
6CE06.5	Students will be able to understand the role of Government Department as a construction agency.
6CE06.6	Students will be able to understand the procedure for tendering in government departments.

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Course Number:	7CE01
Name of Course:	Theory of Structure-II

Sr.No.	Course Outcomes
7CE01.1	Students will be able to analyze the portal frame using slope deflection method and moment distribution method
7CE01.2	Students will be able to analyze the indeterminate beams and frame structures using kani's method
7CE01.3	Students will be able to understand castiglano's second theorem
7CE01.4	Students will be able to utilize the concept of influence line diagram for continuous beam
7CE01.5	Students will be able to understand flexible method and plastic analysis of steel structure
7CE01.6	Students will be able to distinguish between determinant and redundant structural system and understand stiffness method

Course Number:	7CE02
Name of Course:	Geotechnical Engineering-II

Sr.No.	Course Outcomes
7CE02.1	Students will be able to understand various field exploration programs such as SPT test, field vane shear test, geophysical methods.
7CE02.2	Students will be able to calculate bearing capacity of soil by analytical methods and by field methods.
7CE02.3	Students will be able to calculate earth pressure of soil for various field conditions.
7CE02.4	Students will be able to classify the piles and able to calculate their capacity and to design understand piles in clay and sand.
7CE02.5	Students will be able to understand the settlement criteria of foundation.
7CE02.6	Students will be able to understand detailed about well foundation,their component parts, design methods.

Course Number:	7CE03
Name of Course:	Structural Design-II

Sr.No.	Course Outcomes
7CE03.1	Student will be able to identify various primary loads, load combinations and Apply the concepts of structural design to obtain suitable member sizes/sections.
7CE03.2	Student will be able to interpret the structural behaviour of different elements of structure with respect to loads.
7CE03.3	Student will be able to assess the various Indian standards for design of flat slab, retaining walls, combined footings, canopies and parking
7CE03.4	Student will be able to analyze and design of flat slab, retaining walls, combined footings, canopies and parking
7CE03.5	Student will be able to interpret concepts of prestress concrete, types of prestressing and their losses
7CE03.6	Student be able to analyze and design prestressed concrete beam, slab and water tank.

Course Number:	7CE04
Name of Course:	Environmental Engineering-I

Sr.No.	Course Outcomes
7CE04.1	Students will be able to understand the knowledge of different water demands also estimate the quantity of water and forecast the population.
7CE04.2	Students will be able to understand different impurities in water and their effects.
7CE04.3	Students will be able to understand knowledge of different treatments for water in water treatment plants.
7CE04.4	Students are able to understand different types of distribution system and storage reservoir.
7CE04.5	Studets will able to understand the knowledge of different types of airation systems.
7CE04.6	Studets will able to understand the knowledge of different types of filters in treatment units

Course Number:	7CE05
Name of Course:	Environmental Pollution and Rural Sanitation

Sr.No.	Course Outcomes
7CE05.1	Students will be able to understand general components of environment, nature and scope of environmental pollution, and degradation of environment due to human activity
7CE05.2	Students will be able to analyze the water quality with respect to the different parameters
7CE05.3	Students will be able to draw the general layout for industrial waste water treatment plant
7CE05.4	Students will be able to select proper treatment and disposal technology for waste water, solid waste and noise pollution
7CE05.5	Students will be able to carry out environmental impact assessment for civil engineering project
7CE05.6	Students will be able to apply concepts of environmental impact assessment, understand the collection and disposal methods for night soil and design biogas plant

EIGHTH SEMESTER

Course Number:	8CE01
Name of Course:	Water Resources Engineering-II

Sr.No.	Course Outcomes
8CE01.1	Students will be able to understand the control levels of reservoir, various types of dams also they are able to understand the various failure that occurs in a earthen dam.
8CE01.2	Students will be able to understand the practical and elementary profile of gravity dam also they understand the various forces acting on gravity dam.
8CE01.3	Students will be able to understand the various types of diversion headwork, spillways,what are the different types of energy disspators.
8CE01.4	Students will be able to understand the types of canals, their design, canal masonary work and cross drainage work such as aqueduct, canal siphon.
8CE01.5	Students will able to understand canal masonry work and canal regulationry work
8CE01.6	Students will be able to understand well irrigation, watershead management, its need and management also the understand need of water harvesting.

Course Number:	8CE02
Name of Course:	Environmental Engineering-II

Sr.No	Course Outcomes
8CE02.1	Students will be able to differentiate between types of sewerage systems and design it.
8CE02.2	Students will be able to understand characteristics waste water and will be able to draw layouts of waste water treatment plant.
8CE02.3	Students will be able to apply primary, secondary and tertiary treatment techniques for waste water treatment
8CE02.4	Students will be able to understand different effluent standards and study the low cost waste treatment
8CE02.5	Students will be able to understand the characteristics of solid waste and its treatment and disposal methods.
8CE02.6	Students will be able to understand basic concepts of air pollution, EIA and environmental audit.

Course Number:	8CE03
Name of Course:	Project Planning and Management

Sr.No.	Course Outcomes
8CE03.1	Students will be able to understand basic concepts of project planning, project monitoring and project life cycle
8CE03.2	Students will be able to develop and analyze schedule of activities for construction projects using CPM, bar charts.
8CE03.3	Students will be able to understand the concept of PERT and develop and analyzed the activities for project using PERT
8CE03.4	Students will be able to apply concepts of principles of management, resources smoothening and leveling
8CE03.5	Students will be able to understand principals of management, organisation and then function along with safety management.
8CE03.6	Students will be able to understand construction and working of equipments used in construction

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Course Number:	8CE04
Name of Course:	Dam Engineering

Sr.No.	Course Outcomes
8CE04.1	Students will be able to understand requirement , suitability and classification of dams.
8CE04.2	Students will be able to understand types of rockfill dam, arch dam and its design.
8CE04.3	Students will be able to understand types of buttress dam, forces acting and preliminary design.
8CE04.4	Students will be able to design the spillways, hydraulic jump.
8CE04.5	Students will be able to understand types of head regulator, energy dissipation and hydraulic design of opening and barrel.
8CE04.6	Students will be able to study the various instruments used in earth dam and gravity dam such as piezometers, gauges, strain meters and joint meters.

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BACHELOR OF ENGINEERING (BE)

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

THIRD SEMESTER

Course Number: 3ET1	
Course Name: Math III	
Sr. No.	**Course outcome**
	After successfully completing the course, the students will be able to
3ET1.1	Students get knowledge of vector calculus & Fourier Transform.
3ET1.2	Students get basic concepts of complex analysis.
3ET1.3	Students learn different types of numerical methods.
3ET1.4	Students are familiar, how to solve different types of differential equations of higher order.
3ET1.5	Student gains fundamental knowledge of difference equations & partial differential equations.
3ET1.6	Students are familiar with Laplace Transform & how to use it to solve differential equation.

Course Number: 3ET2	
Course Name: Object Oriented Programming	
Sr. No.	**Course outcome**
	After successfully completing the course, the students will be able to
3ET2.1	Justify the basics of object-oriented programming concepts such as data types, functions, classes,objects, constructors, inheritance, overloading etc.
3ET2.2	Design, implement, test, and debug simple programs in C++.
3ET2.3	Describe how the class mechanism supports encapsulation and information hiding.
3ET2.4	Design and test the implementation of Java programming concepts

Course Number: 3ET3	
Course Name: Electronic Devices And Circuits	
Sr. No.	**Course outcome**
	After successfully completing the course, the students will be able to
3ET3.1	Comprehend the knowledge of diode and its applications in rectifier and regulator circuits.
3ET3.2	Understand basics of BJT, JFET, MOSFET, UJT and their operational parameters.
3ET3.3	Understand feedback concept, topologies and their applications.
3ET3.4	Implement and analyze various electronic circuits.

Course Number: 3ET4	
Course Name: Instrumentation & Sensors	
Sr. No.	**Course outcome**
	After successfully completing the course, the students will be able to
3ET4.1	Describe various sensors, transducers and their performance specifications.
3ET4.2	Understand working principle of various transducers.
3ET4.3	Make comparative study of various transducers and understand their applications in industry.
3ET4.4	Understand Data Acquisition Systems.

Course Number: 3ET5	
Course Name: Electromagnetic Fields	
Sr. No.	**Course outcome**
	After successfully completing the course, the students will be able to
3ET5.1	Apply vector calculus to understand the behavior of static electric and magnetic fields.
3ET5.2	Formulate and solve problems in electrostatics and magneto statics in dielectric media.
3ET5.3	Describe and analyze electromagnetic wave propagation in free-space.
3ET5.4	Analyze plane electromagnetic waves at boundaries between homogeneous media.
3ET5.5	Analyze the electromagnetic radiation from localized charges considering retardation effects.

Course Number: 3ET6	
Course Name: Environmental Science (Studies)	
Sr. No.	**Course outcome**
	After successfully completing the course, the students will be able to
3ET6.1	Students gain the fundamental knowledge about environmental studies and its importance.
3ET6.2	Students learn about inter-linking of social issues like global warming, sustainable development, ozone layer depletion and environment. .
3ET6.3	Students learn about causes and effects of increase in size of human population on environment, society, employment and crises for all basic needs.
3ET6.4	Students get familiarized with renewable and non-renewable natural resources & begin to appreciate their commitments to save the planet by conserving natural resources

FURTH SEMESTER

Course Number: 4ET1	
Course Name: Signals And Systems	
Sr. No.	**Course outcome**
	After successfully completing the course, the students will be able to
4ET1.1	Describe signals mathematically and understand how to perform mathematical operations on signals and systems.
4ET1.2	Analyze the spectral characteristics of continuous-time periodic and aperiodic signals using Fourier analysis.
4ET1.3	Classify systems based on their properties and determine the response of LTI system.
4ET1.4	Analyze system properties based on impulse response and Fourier analysis.
4ET1.5	Understand the process of sampling and its effects.
4ET1.6	Apply the Laplace transform and Z- transform for analysis of continuous-time and discrete-time systems.

Course Number: 4ET2	
Course Name: Network Analysis	
Sr. No.	Course outcome
	After successfully completing the course, the students will be able to
4ET2.1	Analyze electrical circuits using mesh and node analysis.
4ET2.2	Draw oriented graph of the network to determine their currents and voltages.
4ET2.3	Apply Laplace Transform for circuit analysis.
4ET2.4	Apply suitable network theorems to analyze electrical circuits.
4ET2.5	Relate various two port network and apply two-port network theory for network analysis.

Course Number: 4ET3	
Course Name: Analog Electronics- I	
Sr. No.	**Course outcome**
	After successfully completing the course, the students will be able to
4ET3.1	Analyze different wave shaping circuits.
4ET3.2	Perform evaluation of the switching behavior of semiconductor devices.
4ET3.3	Comprehend the knowledge of basic concepts and performance parameters of Op-Amp.
4ET3.4	Use Op-Amp for implementation of linear and non-linear applications.
4ET3.5	Comprehend the knowledge of PLL, its applications and data converters.

Course Number: 4ET4	
Course Name: Digital Electronics	
Sr. No.	**Course outcome**
	After successfully completing the course, the students will be able to
4ET3.1	Use Boolean algebra to solve logic functions, number systems and its conversion.
4ET3.2	Understand digital logic families and their characteristics.
4ET3.3	Identify, analyze and design combinational and sequential circuits.
4ET3.4	Use the knowledge of semiconductor memories, programmable logic devices in digital design.

Course Number: 4ET5	
Course Name: COMMUNICATION ENGINEERING –I	
Sr. No.	**Course outcome**
	After successfully completing the course, the students will be able to
4ET5.1	Understand the necessity of modulation and identify the various components of analog communication systems.
4ET5.2	Understand different modulation and demodulation schemes in analog communication systems.
4ET5.3	Compare and contrast the strengths and weaknesses of various communication systems.
4ET5.4	Describe the properties and characteristics of Transmission lines and antennas

Course Number: 4ET6	
Course Name: Environmental Science (Studies)	
Sr. No.	**Course outcome**
	After successfully completing the course, the students will be able to
4ET6.1	Students learn about structure and function of ecosystems (terrestrial and aquatic).
4ET6.2	Students learn about biodiversity and its conservation.
4ET6.3	Students learn about different types of pollution, its causes, effects and prevention & develop awareness to maintain the environmental quality.
4ET6.4	Students learn about details of project work on wide variety of environmental assets & its problems and perform study reports

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FIFTH SEMESTER

Course Number: 5ET01	
Course Name: Analog Electronics – Ii	
Sr. No.	**Course outcome**
5ET01.1	Acquire and apply knowledge for design of voltage regulator circuits using ICS and discrete components.
5ET01.2	Analyze and design electronic circuits for various linear applications.
5ET01.3	Analyze and design electronic circuits for and non-linear applications.
5ET01.4	Design waveform generator circuits using different ICs viz IC 741,8038,566
5ET01.5	Analyze and design different filter circuits.
5ET01.6	Design temperature monitoring system using Op-Amp and sensors.

Course Number: 5ET02	
Course Name: Power Electronics & Drives	
Sr. No.	**Course outcome**
	After successfully completing the course, the students will be able to
5ET02.1	Student gets fundamental knowledge of SCR, TRIAC, DIAC& Various Semiconductor devices.
5ET02.2	Students can able to understand the concepts of principle of phase control & able to draw various controlled rectifier
5ET02.3	Students can understand the concepts of forced commutated circuits & Various types of inverters.
5ET02.4	Students can understand the basics principle of chopper its different types.
5ET02.5	Students can illustrate the operation of Various DC & AC motors.
5ET02.6	Students can know the various applications of power converters in AC & DC Drives.

Course Number: 5ET03	
Course Name: Microprocessors & Microcontrollers	
Sr. No.	Course outcome
	After successfully completing the course, the students will be able to
5ET03.1	Understand the Fundamentals of Microprocessors & Microcontrollers.
5ET03.2	Getting an idea about various skills and logics for dealing with microprocessors & microcontrollers.
5ET03.3	Knowhow for the different data transfer schemes.
5ET03.4	Develop Assembly Language Programming concepts of Microprocessor & Microcontroller.
5ET03.5	Architectural difference between Microprocessor and Microcontroller, towards Real Time Applications of Embedded Systems
5ET03.6	Interface different peripheral devices with Microprocessor and Microcontroller for various daily life applications.

Course Number: 5ET04	
Course Name: Communication Engineering-II	
Sr. No.	**Course outcomes**
	After successfully completing the course, the students will be able to
5ET04.1	Apply the concept of probability theory and random processes
5ET04.2	Understand the propogation of electromagnetic waves in free space
5ET04.3	Analyze the performance of various pulse modulation scheme
5ET04.4	Develop the ability to compare and contrast the strengths and weaknesses of various pulse communication systems
5ET04.5	Understand switching in telephone network.
5ET04.6	To practically understand the assorted telephone switching components and complete working of telephone system(visit to local BSNL exchange)

Course Number: 5FEKS05	
Course Name: Data Communication & Networking	
Sr. No.	Course outcome
	After successfully completing the course, the students will be able to
5FEKS05.1	Understand basic principles of Data communication, networks, protocol, standard topology and signals.
5FEKS05.2	Able to solve mathematical problems on signal conversion and understand the concepts of interface, modem, transmission media.
5FEKS05.3	Understand and apply various multiplexing, error detection and correction techniques, and solve the mathematical problems for the said problems.
5FEKS05.4	Understand various data links control mechanisms and determine the social interactions among networks via protocols.
5FEKS05.5	Understand Local area networks ethernet networks and integrated service digital networks, determine the digital communication strategies.
5FEKS05.6	Understand the networking devices concepts analyse the routing algorithms and their mechanism, also understand OSI layer architecture.

SISTH SEMESTER

Course Number: 6ET1	
Course Name: Microcontroller Programming & Applications	
Sr. No.	Course outcome
	After successfully completing the course, the students will be able to
6ET1.1	Use various members of AVR family.
6ET1.2	Program AVR Microcontroller in assembly language and C language
6ET1.3	Use different inbuilt block of AVR.
6ET1.4	Implement a system for dedicated applications.
6ET1.5	Understand different serial protocols and IDE tools for AVR.

Course Number: 6ET2	
Course Name: Control Systems Engineering	
Sr. No.	Course outcome
	After successfully completing the course, the students will be able to
6ET2.1	Determine transfer function models of electrical, mechanical & electromechanical systems
6ET2.2	Determine specified transfer functions from block diagram & signal flow graph
6ET2.3	Determine transient response & steady state response parameter
6ET2.4	Analyze stability/relative stability of the LTI system
6ET2.5	Determine the state model & the response of the system using state variable method
6ET2.6	Analyze the response of the discrete time system.

Course Number: 6ET3	
Course Name: Digital Communication	
Sr. No.	Course outcome
	After successfully completing the course, the students will be able to
6ET3.1	Understand basic building blocks of digital communication system and formatting of digital signal.
6ET3.2	Understand concepts of information theory and analyze information transmission over communication channel.
6ET3.3	Analyze performance of different digital modulation techniques.
6ET3.4	Understand methods to mitigate inter symbol interference in baseband transmission system.
6ET3.5	Implement different error control coding schemes for the reliable transmission.
6ET3.6	Understand various multiple access schemes and spreading techniques.

Course Number: 6ET4	
Course Name: Digital Signal Processing	
Sr. No.	Course outcome
	After successfully completing the course, the students will be able to
6ET4.1	Manipulate the discrete time signals and identify the type system.
6ET4.2	Compute the z-transform of a sequence, identify its region of convergence, and compute the inverse z-transform.
6ET4.3	Evaluate the Fourier transform of a signal.
6ET4.4	Design FIR and IIR filters.
6ET4.5	Understand the concepts of Multirate Digital Signal Processing and need of Filter banks.
6ET4.6	Understand the architecture of DSP processor TMS320C54XX.

Course Number: 6FEKS05	
Course Name: DATABASE MANAGEMENT SYSTEMS LAB	
Sr. No	Course Outcome
	After successfully completing the course, the students will be able to
6FEKS05.1	Students are aware with the basic structure of SQL.
6FEKS05.2	Able to design and create the Database using integrity constraints and to execute various SQL commands.
6FEKS05.3	They can design,implement and can manipulate Views,PL/SQL queries and can write triggers
6FEKS05.4	Able to design and implement small database application

Course Number :- 6ET6	
Course outcomes :- Communication Skills	
Sr. No.	Course Outcomes
	After successfully completing the course, the students will be able to
6ET6.1	Students will be able to acquire the knowledge of grammar and unseen passage.
6ET6.2	Students will be able to understand the importance of communication, important aspects of non-verbal communication and types of graphs.
6ET6.3	Students will be able to write the various formats of written communication by organizing their ideas logically on a topic. Also they will understand the importance of interpersonal skills.

SEVENTH SEMESTER

Course Number: 7XT01	
Course Name: Data Communication Network	
Sr. No.	**Course outcomes**
	After successfully completing the course, the students will be able to
7XT01.1	Students will get familiar with concept of types network, OSI reference model, topologies &switching techniques.
7XT01.2	Students will understand different ARQ techniques & queuing models.
7XT01.3	Students will understand the LAN access techniques & will able to analyze them.
7XT01.4	Students will gain the knowledge of networking devices & routing techniques.
7XT01.5	Students will understand the network architecture & connecting services.
7XT01.6	Students gain the knowledge of TCP/IP protocols, IP address scheme & related issues.

Course Number: 7XT02	
Course Name: Microcontroller and Application	
Sr. No.	**Course outcomes**
	After successfully completing the course, the students will be able to
7XT02.1	To Understand Fundamentals of MICROCONTROLLERS
7XT02.2	To understand instruction Set of Microcontroller 8051 & its execution
7XT02.3	To educate the Programming Skills
7XT02.4	To understand about interfacing of Microcontrollers with various peripherals & Devices
7XT02.5	To enhance the programming skills for interfacing devices
7XT02.6	To demonstrate the High language programming like C Language, for 8051 Microcontrollers

Course Number: 7XT03	
Course Name: Digital Signal Processing	
Sr. No.	**Course outcomes**
	After successfully completing the course, the students will be able to
7XT03.1	Students understand representation of discrete signal and the linear-nonlinear, causal-non causal, stable-unstable, time variant –time invariant system.
7XT03.2	Student learns Z-transform, properties of Z- transform and inverse Z transform.
7XT03.3	Student learns Discrete Fourier -transform, properties of Discrete Fourier -transform and inverse Discrete Fourier -transform
7XT03.4	Students get familiarized with different structure to implement the filter and design of FIR filter.
7XT03.5	Students get familiarized with different analog to digital conversion method and design of IIR filter.
7XT03.6	Students gains knowledge of multirate signal processing and bank of filter.

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Course Number: 7XT04	
Course Name: Satellite and Optical Fibre Communication	
Sr. No.	**Course outcomes**
	After successfully completing the course, the students will be able to
7XT04.1	Helps students to understand different Satellite orbits and orbital effects on Satellite communication
7XT04.2	Students will try to understand the Atmospheric losses, the Receiver Noise and CNR in Satellite communication
7XT04.3	Student try to understand the VSAT system and Architecture
7XT04.4	Classify different types of Optical fibers and understand the different parameters such as critical angle, Numerical aperture and Acceptance angle.They learn to solve numerical based on NA, and Ms, Mg.Enable students to understand different types of transmission losses in Fiber optic communication. They learn to solve numerical based on Scattering Coefficient and Material dispersion
7XT04.5	Understand the basic principle of a optical source and study different types of optical sources.
7XT04.6	Understand the basic operation principle of Photodetector and study different types of photodiodes

EIGHTH SEMESTER

Course Number: 8XT01	
Course Name: UHF and Microwave	
Sr. No.	**Course outcomes**
	After successfully completing the course, the students will be able to
8XT01.1	Student understands the problems in high frequency generation, amplification and the solutions in the form of new devices two cavity klystron, TWT, Reflex klystron & Magnetron.
8XT01.2	Student gains knowledge of the function of Semiconductor microwave devices & their application.
8XT01.3	Students get familiarized with the passive microwave components and the scattering matrix evaluation.
8XT01.4	Students understand the working principle of microwave measurement devices.

Course Number: 8XT02	
Course Name: Electronics Circuit Design	
Sr. No.	**Course outcomes**
	After successfully completing the course, the students will be able to
8XT02.1	Ability to design regulated power supply.
8XT02.2	Ability to design different electronic circuit using several ICs.
8XT02.3	Be able to do realization of universal & compound gates using MOS transistors.
8XT02.4	Ability to explain VHDL and VERILOG.
8XT02.5	Be able to design combinational blocks as well as state machine modeling
8XT02.6	Be able to write the program for different application using VHDL

Course Number: 8XT03	
Course Name: Wireless Communication	
Sr. No.	**Course outcomes**
	After successfully completing the course, the students will be able to
8XT03.1	Students gain knowledge of various concepts of cellular and wireless systems, evolutions and Frequency re-use.
8XT03.2	Gain knowledge of design fundamentals of cellular radio system with parameters as interference, capacity and performance.
8XT03.3	Knowledge of the radio propagation mechanisms and fading problems specific to mobile communication along with related Fresnel Zone and Knife-edge diffraction models
8XT03.4	Detail knowledge of Systems architecture and signals processing in GSM systems, including CDPD and GPRS.
8XT03.5	Student gain knowledge of CDMA-95channel specifications and handoff strategies.
8XT03.6	Students gain knowledge of the Wireless LAN and methods with emphasis on Bluetooth parameters Zigbee, WI-MAX.

Course Number: 8XT4	
Course Name: Biomedical Engineering	
Sr. No.	**Course outcomes**
	After successfully completing the course, the students will be able to
8XT04.1	Student gain the fundamental knowledge of electrodes used for ECG, EEG and EMG recording.
8XT04.2	Student learns about cardiovascular system, physiology and working of the heart.
8XT04.3	Student learns about nervous system: anatomy of nervous system and types of nervous system.
8XT04.4	Student learns EEG and EEG recorder.
8XT04.5	Student learns different sounds in heart, cardiac output and cardiac cycle.
8XT04.6	Student learns about blood pressure measurement, heart rate and pulse rate measurement.

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

THIRD SEMESTER

Course Code: 3KS01	
Course Name: Engineering Maths-III	
CO No.	Course Outcomes
After completion of course students will able to:	
3KS01.1	Get fundamental knowledge of Ordinary Differential equations.
3KS01.2	Familiar with Laplace Transform and its applications to solve Differential equations.
3KS01.3	Familiar with applications of Z-transform to solve Difference equations.
3KS01.4	Solve Fourier Transform and Partial differential equations.
3KS01.5	Understand the concepts of Complex Analysis, Harmonic function and Analytic function.
3KS01.6	Get knowledge of Vector calculus.

Course Code: 3KS03	
Course Name: Electronic Device And Circuits	
CO No.	Course Outcomes
After completion of course students will able to:	
3KS03.1	Understand the characteristics and operation of semiconductor devices such as Diode, Zener Diode, BJT, Amplifier as well as applications like Rectifier circuits & filters
3KS03.2	Understand the construction & working of JFET, MOSFET, VMOSFET with their characteristics
3KS03.3	Gain the knowledge regarding various types of oscillators such as RC, LC & crystal oscillator & their applications
3KS03.4	Understand the principle of operation, characteristics & applications of Opto-Electronic Devices such as photodiodes, phototransistors & Opto-couplers

Course Code:3KS04	
Course Name:Discrete Structure	
CO No.	Course Outcomes
After completion of course students will able to:	
3KS04.1	Describe well formed formula by using connectivity's, List truth table problems with solution,and identify normal forms problems using implications & equivalence rules.
3KS04.2	Express predicate calculus and inference rules and to solve to theory of the predicate calculus problems.
3KS04.3	Explain basic concept of set theory ,to solve operations on set ,venn diagram, representation of discrete structure, relations matrix with graph ,function & recursion.
3KS04.4	Give example of algebraic system semi groups and monoid, groups and polished expression.
3KS04.5	Estimate lattice and to solve Boolean algebra, function, representation of logical function and minimization Boolean function.
3KS04.6	Sketch the graphs& learn basic concept of graph, trees, storage representation of trees, operations on trees and list structure.

Course Code: 3KS05	
Course Name: Computer Organization	
CO. No	Course Outcomes
After completion of course students will able to:	
3KS05.1	Gain the basic knowledge of computer architecture, different addressing modes, basic I/O operations, stack, queue and subroutines
3KS05.2	Describe the concepts of hardwired and micro programmed control, micro program sequencing, microinstruction pre-fetching and emulation.
3KS05.3	Get knowledge of interrupts to be use to implement I/O control and DMA as well as various types of buses in computer systems.
3KS05.4	Classify different types of memories and their organization.
3KS05.5	Illustrate number representation, arithmetic operations and Booth's algorithm.
3KS05.6	Categorize various peripheral devices like I/O devices, storage devices and communication devices.

FOURTH SEMESTER

Course Code: 4KS01	
Course Name: Data Structure	
CO No.	Course Outcomes
After completion of course students will able to:	
4KS01.1	Gain knowledge on representation and use of primitive data types and built in data structures and their applications.
4KS01.2	Explain the concept of Traversing linear arrays, their array representation in memory and able to perform Linear and Binary search.
4KS01.3	Learn the concept of linked lists and their representation in memory, traversing a linked list, searching in a linked list.
4KS01.4	Classify the concept of Stacks, Queues and their array representation.
4KS01.5	Learn about the concepts of Trees, Binary trees, Traversing binary trees. And their representation in memory.
4KS01.6	Analyze and understand different algorithms techniques (Warshall, Selection sort etc,).

Course Code: 4KS02	
Course Name: Analog & Digital Integrated Circuits	
CO No.	Course Outcomes
After completion of course students will able to:	
4KS02.1	Understand the characteristics and operation of various Analog IC's such as Operational Amplifier, Timer & Phase locked loop as well as their applications
4KS02.2	Introduce to various number systems, codes & their inter conversions. Also they will be able to analyze and design SSI Circuit using the knowledge of Boolean Algebra and various minimization techniques
4KS02.3	Design various combinational circuits such as Adder, Subtractor, Comparator and MSI circuits such as Multiplexer & Decoder
4KS02.4	Gain the knowledge of various types of Flip-Flops and will be able to design various sequential circuits such as shift registers and counters

Course Code: 4KS03	
Course Name:Object Oriented Programming	
CO No.	Course Outcomes
After completion of course students will able to:	
4KS03.1	Classify the basics of OOP and analyzing basics of Object oriented approach on constructors, static class data, objects, and assess the string related programs.
4KS03.2	Describe the knowledge of Operator overloading and by preparing it, design and implement programs using classes and objects, pointer and operator overloading.
4KS03.3	Identify the knowledge of Inheritance and by generalizing it, design the flowchart models and implement programs for the types of inheritance and use them.

4KS03.4	Able to analyze virtual functions, polymorphic behavior of objects, design the flowchart models and implement programs of friend functions and virtual base classes.
4KS03.5	Outline the Streams & Files in object oriented programming, implement programs of command line argument and analyse and summarize file related operations.
4KS03.6	Differentiate the Standard template library, design and implement class template, function template and template libraries and evaluating the exception handling programs.

Course Code: 4KS04	
Course Name: Assembly Language Programming	
CO No.	Course Outcomes
After completion of course students will able to:	
4KS04.1	Learn the basic concepts of microprocessor and assembly language programming.
4KS04.2	Gain knowledge of microprocessor based systems, addressing modes and interfacing techniques.
4KS04.3	Understand the techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.
4KS04.4	Apply the instruction related to stack and subroutine mechanism.
4KS04.5	Define I/O bus cycles,I/O interfaces and PPI organization
4KS04.6	Identify the types of interrupts with their priority and able to explain the interrupt controller IC.

Course Code: 4KS05	
Course Name: Theory of Computation	
CO No.	Course Outcomes
After completion of course students will able to:	
4KS05.1	Clarify the fundamental mathematical, regular languages and finite automata.
4KS05.2	Able to describe and transform regular expressions and grammars.
4KS05.3	Apply the concept and design of push-down automata.
4KS05.4	Summarize the design of Turing machine and various types of TM.
4KS05.5	Recognize decidable and undecidable problems and languages.
4KS05.6	Identify recursive enumerable languages, recursive function theory.

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FIFTH SEMESTER

Course Code: 5KS01	
Course Name: Data Communication	
CO. No	Course Outcomes
After completion of course students will able to:	
5KS01.1	Understand the components of a data communications system and different types of signals and functions of encoding and modulation .
5KS01.2	Understand basic fundamentals concepts of different types of conversion between analog and digital signals/data.Concept of Transmission media and performances and calculation.
5KS01.3	Get the knowledge of multiplexing, De-multiplexing, Error-Correction and Detection methods.
5KS01.4	Get the knowledge of the concepts of data link controls and protocols.Study and analysis of various protocals and their formats.
5KS01.5	Learn the working principles of LAN, Ethernet token ring , token bus, switching techniques and apply those techniques
5KS01.6	Understand the operation of frame relay and their different features. leaky bucket algorithm, To learn congestion control and traffic control mechanism.

Course Code: 5KS02	
Course Name: File Structures And Data Processing	
CO. No	Course Outcomes
After completion of course students will able to:	
5KS02.1	Outline the fundamentals concept of File Processing operations and storage structures.
5KS02.2	Describe and Distinguish methods for field and record organization and file accessing.
5KS02.3	Describe several approches to data compression techniques and placement
5KS02.4	Analyse some of the fundamentals associated with sorting of files on disc and
5KS02.5	Outline and construct the concept of Multilevel indexing and B-Tree.
5KS02.6	Examine hashing and collision techniques.

Course Code: 5KS03	
Course Name: System Software	
CO. No	Course Outcomes
After completion of course students will able to:	
5KS03.1	Identify and summarize different phases and passes of compiler and their functioning.
5KS03.2	Clarify the concept of syntax analysis and to solve the problems of predictive parsing.
5KS03.3	To differentiate between top down and bottom up parsing and recognize syntax directed translation techniques.

5KS03.4	To apply code optimization and code generation techniques.
5KS03.5	To produce the Symbol Table and Run-Time Environment.
5KS03.6	Summarize the concept of code generation and code optimization.

Course Code: 5KS04	
Course Name: Switching Theory And Logic Design	
CO. No	Course Outcomes
After completion of course students will able to:	
5KS04.1	Understand VHDL modeling concept and fundamentals like specific data types, operators and different sequential statements to implement sequential digital logic.
5KS04.2	Understand data collection and representation using arrays and records and their referencing.
5KS04.3	Understand different logic minimization techniques like K-Map, QM Methods and benefits of minimizing logical expressions or functions in terms of cost, time and area.
5KS04.4	Learn combinational logic circuit designing and their benefits.
5KS04.5	Learn combinational logic circuit designing using universal device like multiplexer and etc.
5KS04.6	Learn sequential logic circuit designing like counters, shift registers and FSM modeling.

Course Code: 5FEIT05	
Course Name: Introduction Of Computer Network	
CO. No	Course Outcomes
After completion of course students will able to:	
5FEIT05.1	Understand basic Concept of Networking
5FEIT05.2	Understand concept of Different PC model and related Networking Application.
5FEIT05.3	Understand Interconnecting the LAN, OSI Model, network bridge, switch, Routers.
5FEIT05.4	Understand Introduction of TCP/IP, IPV4 addressing, subnet mask,, basic of IPV6 and
5FEIT05.5	Understand Router configuration and Different Protocol Concept
5FEIT05.6	Understand the dynamic routing protocols such as RIP, EIGP, TFTP, OSPF.

Course Code: 5KS06	
Course Name: Communication Skills	
CO. No	Course Outcomes
After completion of course students will able to:	
5KS06.1	Acquire the knowledge of grammar and unseen passage.
5KS06.2	Understand the significance of verbal communication, organization of text, important text factors and evaluation of written communication for its effectivity and subject content.
5KS06.3	Learn the aspects of non verbal communication, body language and types of graphs and pictorial devices.
5KS06.4	Write the various formats of written communication like reports, proposals, notice agenda & minutes etc.
5KS06.5	Learn the important objectives of interpersonal skills, face to face communication, group discussion, personal interview. They will learn the methodology of conducting meetings, seminars conferences etc.
5KS06.6	Practise the etiquettes of Email writing

SIXTH SEMESTER

Course Code: 6KS01	
Course Name: Operating System	
CO No.	Course Outcomes
After completion of course students will able to:	
6KS01.1	Learn basic of Operating System, process, threads.
6KS01.2	Describes the various CPU scheduling algorithms & the concept of deadlock.
6KS01.3	Explain various memory management techniques and concept of disk scheduling algorithm for better utilization of external memory.
6KS01.4	Understand the concept of file system.
6KS01.5	Study the concept of I/O scheduling and disk scheduling algorithm.
6KS01.6	Explain the objectives and functions of Linux system.

Course Code: 6KS02	
Course Name: Database Systems	
CO No.	Course Outcomes
After completion of course students will able to:	
6KS02.1	Identify the application areas of database system and ability to design ER diagram.
6KS02.2	Learn the concept of relational model and ability to solve SQL queries.
6KS02.3	Apply integrity constraints and various normalization forms.
6KS02.4	Describe query processing and query optimization
6KS02.5	Define ACID properties and serializability of transaction Management.
6KS02.6	Perceive Concurrency control protocols and recovery management system.

Course Code:6KS03	
Course Name:Computing Resource Management	
CO No.	Course Outcomes
After completion of course students will able to:	
6KS03.1	Understand the building blocks of IT infrastructure viz. Process, people and
6KS03.2	Understand the process of system management.
6KS03.3	Get the knowledge of complete business model and its process.
6KS03.4	Gain knowledge of the complete business process
6KS03.5	Learn to develop and integrate robust world class infrastructure
6KS03.6	Apply processes of traditional system management to client-server and web-enabled

Course Code: 6KS04	
Course Name: Computer Architecture	
CO No.	Course Outcomes
After completion of course students will able to:	
6KS04.1	Get the information and understanding of Instruction sets and their formats.
6KS04.2	Gain knowledge about addressing modes of ARM and X86 Architecture.
6KS04.3	Get the knowledge about processor structure and its functions. Understanding of instruction pipelining concept.
6KS04.4	Understand the concept of RISC machine and their architecture, RISC vs CISC machine
6KS04.5	Study the control unit operations and microinstruction sequencing & execution.
6KS04.6	Understand Parallel processing environment and knowledge about multicore and multiprocessor organization.

Course Code: 6FEIT05	
Course Name: E-Commerce	
CO No.	Course Outcomes
After completion of course students will able to:	
6FEIT05.1	Understand concepts of E-commerce Business Models and its Strategies.
6FEIT05.2	Understand and use the concepts of developing the E-commerce website and payment issues.
6FEIT05.3	Explain concepts of online communication and marketing tools of E-commerce with its strategies.
6FEIT05.4	Use the concepts of security in e-commerce.
6FEIT05.5	Understand and use the concepts of developing the e-commerce payment issues.

Course Code : 6KS06	
Course Name: Professional Ethics	
CO No.	Course Outcomes
After completion of course students will able to:	
6KS06.1.	Understand computers in a Social Context, Moral and Legal issues. Computer Ethical issues. Philosophical Ethics and Professional Ethics.
6KS06.2	Understand Ethics and The Internet, characteristics, Hacking and Hacker Ethics, Property Rights in Computer Software, Proprietary Software and Software Copying.
6KS06.3.	Gain the knowledge of Accountability, Computer and information Technology , Software, Y2K Problem, Internet Issues, ISP Liability, and Virtual Action.Technology and Social change, Free Expression, Overarching and Future Issues.

SEVENTH SEMESTER

Course Code: 7KS01	
Course Name: Digital Signal Processing	
CO. No	Course Outcomes
After completion of course students will able to:	
7KS01.1	Familiarized with the types of signal, classification of signals & system and its Fundamental properties
7KS01.2	Understand LTI system.
7KS01.3	Understand need of transform theory (Z-Transform) in discrete domain, its ROC determination, and Inverse Z-Transform by using various methods.
7KS01.4	Understand need of Fourier Transform, Computation of DFT and IDFT, FFT.
7KS01.5	Design LP, BP, HP, FIR, and IIR filters.
7KS01.6	Realize FIR, IIR filters.

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Course Code: 7KS02	
Course Name: Computer Networks	
CO. No	Course Outcomes
After completion of course students will able to:	
7KS02.1	Understand the layered architecture and internet protocols along with the principles and purpose of application layer and transport layer.
7KS02.2	Get knowledge of network layer, routing protocols and their working principles in depth.
7KS02.3	Learn concepts of link layer and its services.
7KS02.4	Understand principles of security issues in network and infrastructure for network management.
7KS02.5	Learn to Network security, its basic issues, principles and protocols
7KS02.6	Get knowledge of Network Management, its basic issues, principles and protocols

Course Code :- 7KS03	
Course Name :- Design and Analysis of Algorithms	
CO. No	Course Outcomes
After completion of course students will able to:	
7KS03.1	Describe various design issues for iterative algorithms.
7KS03.2	Apply divide and conquer strategy to solve problems.
7KS03.3	Define greedy algorithms. Apply greedy strategy to solve problems.
7KS03.4	Describe dynamic programming approach to practice examples based on it.
7KS03.5	Define and apply backtracking methods for solving examples.
7KS03.6	Summarize various ways for calculating efficiency of algorithm.

Course Code: 7KS04	
Course Name: Object Oriented Analysis & Design	
CO. No	Course Outcomes
After completion of course students will able to:	
7KS04.1	Understand the basic concept of modeling
7KS04.2	Classify the different systems in modeling concept
7KS04.3	Mastered the techniques of Object Oriented Philosophy.
7KS04.4	Analyse of System in Object Oriented way.
7KS04.5	Design the System in Object Oriented Way.
7KS04.6	Implement various systems in models and compare it.

Course Code: 7KS05	
Course Name:Web Engineering	
CO. No	Course Outcomes
After completion of course students will able to:	
7KS05.1	Classify the basics of web engineering and its applications
7KS05.2	Demonstrate the knowledge of programming in Hypertext Markup Language with Cascading Style Sheet
7KS05.3	Distinguish the concept of the DTD, Purpose of DTD and DTD in XML document.
7KS05.4	Practice various programs on Java Script
7KS05.5	Apply the knowledge of XML scheme and Structure
7KS05.6	Define the knowledge of Common Gateway Interface

EIGHT SEMESTER

Course Code: 8KS01	
Course Name: Artificial Intelligence	
CO No.	Course Outcomes
After completion of course students will able to:	
8KS01.1	Clarify the concept of Artificial Intelligence and Basic knowledge of Artificial Intelligence.
8KS01.2	Explain and Give the example on different searching techniques like using different machine techniques and AND-OR graph.
8KS01.3	Illustrate Game playing with Mini-max search and Adding alpha-Beta Cutoffs etc.
8KS01.4	Analyze the knowledge Representation using predicate logic.
8KS01.5	Generalize structure representation of knowledge and explain declarative representations.
8KS01.6	Summarize common AI applications and justify the AI By using NLP.

Course Code:8KS02	
Course Name: Embedded System	
CO No.	Course Outcomes
After completion of course students will able to:	
8KS02.1	Learn the concept of Embedded system and component of Embedded system.
8KS02.2	Understand application areas and purpose of embedded system.
8KS02.3	Learn detail architecture of Intel 8051 microcontroller.
8KS02.4	Understand 8051 microcontroller programming.
8KS02.5	Familiar with the concept of programming in Embedded C.
8KS02.6	Familiar with the concept of Real time Operating System such as VxWorks.

Course Code:8KS03	
Course Name: Software Engineering	
CO No.	Course Outcomes
After completion of course students will able to:	
8KS03.1	Learn basic concept of software engineering.
8KS03.2	Understand the concepts of process modeling.
8KS03.3	Analysis software sizing in software development.
8KS03.4	Synthesis of risk analysis
8KS03.5	Able to understand Software Quality Assurance concepts.
8KS03.6	Evaluate testing principles.

Course Code :- 8KS04	
Course Name :- Network Security	
CO No.	Course Outcomes
After completion of course students will able to:	
8KS04.1	Describe various encryption algorithm along with OSI security architecture.
8KS04.2	Define various method of cryptography and message authentication.
8KS04.3	Describe IP security and various authentication application.
8KS04.4	Describe the concept of network security and management.
8KS04.5	State various malicious software and summarize the concept of firewall.