



NPR College of Engineering & Technology

NPR Nagar, Natham, Dindigul - 624401, Tamil Nadu, India.
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.
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Phone No: 04544- 246 500, 246501, 246502.
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CRITERION -2 TEACHING-LEARNING AND EVALUATION		
KEY INDICATOR 2.6-STUDENTS PERFORMANCE AND LEARNING OUTCOME		
Metric No 2.6.1-teachers and students are aware of the stated programme and course outcomes of the programmes offered by the institution		
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COURSE OUT COME REGULATION 2013

PROGRAMME: CIVIL ENGINEERING	DEGREE: UG	A.Y: 2016-17	SEMESTER: 01
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	I / I	HS6151 - TECHNICAL ENGLISH I	C101.1 Explain clearly, confidently, comprehensibly, and communicate with one or many listeners using appropriate communicative strategies.	K2
			C101.2 Construct cohesively and coherently and flawlessly avoiding grammatical errors, using a wide vocabulary range, organizing their ideas logically on a topic.	K6
			C101.3 Organize different genres of texts adopting various reading strategies.	K6
			C101.4 Distinguish and comprehend different spoken discourses/excerpts in different accents.	K2
			C101.5 Listen to different accents, speeches and presentations.	K2
2	I / I	MA6151 - MATHEMATICS I	C102.1 Learn a clear idea of matrix algebra pertaining eigen values and eigen vectors in addition dealing with quadratic forms.	K2
			C102.2 Learn infinite series and their convergence and acquire the knowledge of with limitations of using infinite series approximations for solutions arising in mathematical modelling.	K2
			C102.3 Understand and characterize phenomena which evolve around circle of curvature and envelope.	K2



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			C102.4	Extend the function of a one variable to several variables. Multivariable functions of real variables arise inevitable in engineering.	K2
			C102.5	Exposed to double and triple integration so that they can handle integrals of higher order which are applied in engineering field.	K3
3	I / I	PH6151 - ENGINEERING PHYSICS I	C103.1	Classify the Bravais lattices, and different types of crystal structures & growth techniques.	K1
			C103.2	Demonstrate the properties of elasticity and heat transfer of objects.	K2
			C103.3	Explain Black body Radiation and properties of matter waves and Schrodinger wave equations.	K3
			C103.4	Illustrate the acoustic requirements, production and application of ultrasonic.	K1
			C103.5	Examine the characteristics of laser and optical fiber.	K2
4	I / I	CY6151 - ENGINEERING CHEMISTRY I	C104.1	Classify the polymers and their utility in the industries and describe the techniques of polymerization and properties of polymers.	K1
			C104.2	Relate various thermodynamic functions such as enthalpy, entropy, free energy and their importance and equilibrium constants and its significance.	K2
			C104.3	Explain the photophysical processes such as fluorescence and phosphorescence and various components of UV and IR spectrophotometer.	K1
			C104.4	Illustrate the phase transitions of one component and two component systems and the types of alloys and their	K3



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				applications in industries.	
			C104.5	Outline the synthesis, characteristics and the applications of nano materials.	K1
5	I / I	GE6151- COMPUTER PROGRAMMING	C105.1	Elaborate the organization of digital computer and design the solution for simple computing problems using algorithm, flowchart and pseudo code.	K6
			C105.2	Apply the different looping structure to solve simple scientific and statistical problems.	K3
			C105.3	Devise the solutions for simple problems using arrays and strings	K6
			C105.4	Demonstrate the usage of dynamic memory allocation and pointer variables.	K3
			C105.5	Illustrate the concepts of structure and union with an example programs.	K4
6	I / I	GE6152- ENGINEERING GRAPHICS	C106.1	Sketch the conic sections, special curves, and draw orthographic views from pictorial views and models.	K4
			C106.2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.	K3
			C106.3	Sketch the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures.	K4
			C106.4	Practice the sectional views of solids like cube, prisms, pyramids, cylinders & cones and extend its lateral surfaces	K3
			C106.5	Sketch the perspective projection of simple solids, truncated prisms, pyramids, cone and cylinders and sketch the isometric projection of simple machine parts.	K4



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7	I / I	GE6161- COMPUTER PRACTICES LABORATORY	C107.1	Describe the usage of office automation tools	K1
			C107.2	Apply the good programming methods for program development.	K3
			C107.3	Design and implement the C program for simple application	K4
			C107.4	Develop and implement the recursive programs	K4
			C107.5	Implement the C program with the help of Structures and Union	K5
8	I / I	GE6162 - ENGINEERING PRACTICES LABORATORY	C108.1	Construct Electrical and Electronic circuits.	K6
			C108.2	Examine different types of electronic circuits and components.	K3
			C108.3	Recognize electrical safety rules, grounding, general house wiring.	K6
			C108.4	Explore soldering practices.	K3
9	I / I	GE6163 - PHYSICS AND CHEMISTRY LABORATORY - I	C109.1	Apply physics principles of optics and thermal physics to evaluate engineering properties of materials.	K3
			C109.2	Perform the quantitative chemical analysis of chloride and dissolved oxygen.	K5
			C109.3	Determine the amount of acids by using the instruments of conductivity meter and pH meter.	K5



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PROGRAMME: CIVIL ENGINEERING	DEGREE: UG	A.Y: 2016-17	SEMESTER: 02
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	I / II	HS6251 - TECHNICAL ENGLISH II	C110.1	Speak convincingly, express their opinions clearly, initiate a discussion, negotiate, argue using appropriate communicative strategies..	K2
			C110.2	Write effectively and persuasively and produce different types of writing such as narration, description, exposition and argument as well as creative, critical, analytical and evaluative writing.	K5
			C110.3	Read different genres of texts, infer implied meanings and critically analyse and evaluate them for ideas as well as for method of presentation.	K1
			C110.4	Listen/view and comprehend different spoken excerpts critically and infer unspoken and implied meanings.	K2
			C110.5	Read and write effectively for a variety of professional and social settings	K2
2	I / II	MA6251 - MATHEMATICS II	C111.1	Solve ordinary differential equations that model most of the engineering problems .	K3
			C111.2	Acquainted with the concepts of vector calculus-like Gradient, Divergence, Curl, Directional derivative, Irrotational vector and Solenoidal vector. The course gives an understanding of Vector integration, needed for problems in all engineering disciplines.	K2



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			C111.3	Make to appreciate the purpose of using transforms to create new domain in which it is easier to handle the problem that is being investigated.	K6
			C111.4	Develop an understanding of the standard techniques of complex variable and mapping so as to enable the student to apply them with confidence, in application areas such as heat conduction, elasticity, fluid dynamics and flow of electric current .	K4
			C111.5	Exposed to the concept of Cauchy's integral theorem, Taylor and Laurent expansions, Singular points, Application of residue theorem to evaluate complex integrals.	K3
3	I / II	PH6251 - ENGINEERING PHYSICS II	C112.1	Illustrate Classical and Quantum free electron theory& calculate carrier concentration in metals.	K2
			C112.2	Describe the carrier concentration in semiconductors and identify the P-type & N-type semiconductor using Hall Effect.	K2
			C112.3	Classify the different types of magnetic and superconducting materials	K2
			C112.4	Explain the dielectrics, types of polarization, losses and breakdowns	K2
			C112.5	Discuss the properties, preparation and applications of Metallic Alloys, SMA, Nanomaterials, NLO, and Biomaterials.	K2
4	I / II	CY6251 - ENGINEERING CHEMISTRY II	C113.1	Summarize the water related problems in boilers and their treatment techniques.	K1
			C113.2	Design the electro chemical cells and to identify the types of corrosion and the methods of prevention	K2
			C113.3	Illustrate the methods of harnessing energy from non-conventional energy sources.	K2



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			C113.4	Classify various engineering materials and their important.	K1
			C113.5	Relate the significance of solid, liquid and gaseous fuel and to calculate the calorific values of fuels and the requirement of air for combustion in furnaces.	K3.
5	I / II	GE6252 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	C114.1	Understand the electrical circuit and their working principles	K2
			C114.2	Identify the electrical components of a machines and their applications	K2
			C114.3	Explain the characteristics of the electrical machines	K2
			C114.4	Identify the digital electronics circuits and their components	K2
			C114.5	Explain the fundamentals of communication systems	K2
6	I / II	GE6253 - ENGINEERING MECHANICS	C115.1	Illustrate the vectorial and scalar representation of forces and moments	K2
			C115.2	Analyse the rigid body in equilibrium	K3
			C115.3	Evaluate the properties of surfaces and solids	K4
			C115.4	Calculate dynamic forces exerted in rigid body	K3
			C115.5	Determine the friction and the effects by the laws of friction	K3
7	I / II	GE6262 - PHYSICS AND CHEMISTRY LABORATORY II	C116.1	Ability to test materials by using their knowledge of applied physics principles in optics and properties of matter.	K5
			C116.2	Determine the hardness, alkalinity and metal ion content in the water samples by	K5



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				volumetric titration.	
			C116.3	Estimate the water quality parameters by potentiometer, conductometer and flame photometer.	K2
8	I / II	GE6261 - Computed Aided Drafting and Modelling Laboratory	C117.1	Use the software packers for drafting and modeling	K3
			C117.2	Draw the plan of residential building and simple steel structures with the different types of joints as per the design calculations.	K3
			C117.3	Create 2D and 3D models of Engineering Components	K5

PROGRAMME: CIVIL ENGINEERING

DEGREE: UG

A.Y: 2017-2018

SEMESTER: 03

S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	II / III	MA6351 - Transforms and Partial Differential Equation	C201.1	Solve Linear Partial differential equations of first and second order.	K3
			C201.2	Associate the concepts of Fourier series expansion for even and odd functions.	K2
			C201.3	Apply the concepts of Fourier series in solving boundary value problems.	K3
			C201.4	Discuss the Fourier transform, Fourier Sine and Cosine transform techniques.	K2
			C201.5	Discuss the concepts of Z-Transform techniques for discrete time systems.	K2
2	II /	GE 6351- Environmental	C202.1	Understand Public awareness of environmental is at infant stage.	K2



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	III	Science and Engineering	C202.2	Understand Ignorance and incomplete knowledge has lead to misconceptions	K2
			C202.3	Development and improvement in std. of living has lead to serious environmental disasters	K2
			C202.4	Understand environmental laws and regulations to develop guidelines, procedures and process for health and safety issues.	K2
			C202.5	Gain Knowledge about the importance of women , child welfare and HIV /AIDS.	K2
3	II / III	CE6301 - ENGINEERING GEOLOGY	C203.1	Understand the importance of geological knowledge such as earth, earthquake, volcanism and the action of various geological agencies.	K2
			C203.2	Get basics knowledge on properties of minerals.	K2
			C203.3	Gain knowledge about types of rocks, their distribution and uses.	K2
			C203.4	Understand the methods of study on geological structure.	K2
			C203.5	Understand the application of geological investigation in projects such as dams, tunnels, bridges, roads, airport and harbor	K2
4	II / III	CE6302 - MECHANICS OF SOLIDS	C204.1	Understand the concepts of stress and strain, principal stresses and principal planes.	K2
			C204.2	Determine Shear force and bending moment in beams and understand concept of theory of simple bending.	K4
			C204.3	Calculate the deflection of beams by different methods and selection of method for determining slope or deflection.	K4



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			C204.4	Apply basic equation of torsion in design of circular shafts and helical springs.	K3
			C204.5	Analyze the pin jointed plane and space trusses	K4
5	II / III	CE6303- MECHANICS OF FLUIDS	C205.1	Understand the properties of fluids , fluid statics.	K2
			C205.2	Solve to problems related to fluid kinematics and dynamics	K3
			C205.3	Learn types of flow and losses of flow in pipes.	K2
			C205.4	Understand and solve the boundary layer problems.	K3
			C205.5	Gain knowledge about dimensional and model analysis.	K3
6	II / III	CE6304 - SURVEYING I	C206.1	To know the various surveying instrumenmts and its types	K2
			C206.2	Understand the concept of prismatic compass and suveryor compass and its working principle	K2
			C206.3	Understand the basics of levelling instruments	K2
			C206.4	Solve the levelling problems	K3
			C206.5	Able to solve the problems in theodolite surveying	K3
7	II / III	CE6311- SURVEY PRACTICAL I	C207.1	Apply the practical knowledge on handling basic survey instruments .	K3
			C207.2	Apply the practical knowledge on handling leveling instruments.	K3
			C207.3	Apply the practical knowledge on development of contour map of given area.	K3



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8	I / II	CE6312 - COMPUTER AIDED BUILDING DRAWING	C208.1	Draft the plan, elevation and sectional views of the buildings, industrial structures, framed buildings using computer softwares.	K3
			C208.2	Draft the plan, elevation and sectional views of the industrial structures using computer softwares	K3
			C208.3	Draft the plan, elevation and sectional views of the framed buildings using computer softwares	K3

PROGRAMME: CIVIL ENGINEERING	DEGREE: UG	A. Y: 2018-2019	SEMESTER: 04
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	II / IV	MA6459- NUMERICAL METHODS	C209.1	Determine the solution of algebraic and transcendental system of linear equations.	K2
			C209.2	To interpolate the values of unknown functions using Newton's formulas.	K2
			C209.3	Estimate the numerical values of derivatives and integrals of unknown functions.	K2
			C209.4	Solve first and second order initial value problems.	K2
			C209.5	Solve Numerically boundary value problem.	K3
2	II / IV	CE6401- CONSTRUCTION MATERIALS	C210.1	Compare the properties of most common and advanced building materials.	K2
			C210.2	Understand the typical and potential applications of lime, cement and aggregates	K2



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			C210.3	Know the production of concrete and also the method of placing and making of concrete elements.	K2
			C210.4	Understand the applications of timbers and other materials	K2
			C210.5	Understand the importance of modern material for construction.	K2
3	II / IV	CE6402 STRENGTH OF MATERIALS	C211.1	Determine the strain energy and compute the deflection of determinate beams, frames and trusses using energy principles.	K3
			C211.2	Analyze propped cantilever, fixed beams and continuous beams using theorem of three moment equation for external loadings and support settlements.	K3
			C211.3	Find the load carrying capacity of columns and stresses induced in columns and cylinders	K3
			C211.4	Determine principal stresses and planes for an element in three dimensional state of stress and study various theories of failure	K3
			C211.5	Determine the stresses due to unsymmetrical bending of beams, locate the shear center, and find the stresses in curved beams.	K3
4	II / IV	CE6403 APPLIED HYDRAULIC ENGINEERING	C212.1	Apply their knowledge of fluid mechanics in addressing problems in open channels.	K3
			C212.2	Identify a effective section for flow in different cross sections.	K3
			C212.3	Solve problems in uniform, gradually and rapidly varied flows in steady state conditions.	K3
			C212.4	Understand the principles, working and	K3



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				application of turbines.	
			C212.5	Understand the principles, working and application of pumps.	K3
5	II / IV	CE6404 SURVEYING II	C213.1	Understaning the concsep[t of triangulation surveying and its methods	K2
			C213.2	Solve the problems in theodolite surveying	K3
			C213.3	Understand the concept of basics of total statio surveying instrument	K2
			C213.4	Understand various GPS surveying methods and processing techniques used in GPS	K2
			C213.5	Understand the Concepts of astronomical surveying and methods to determine time, longitude, latitude and azimuth.	K3
6	II / IV	CE6405 SOIL MECHANICS	C214.1	Classify the soil and assess the engineering properties, based on index properties.	K2
			C214.2	Understand the stress concepts in soils	K2
			C214.3	Understand and identify the settlement in soils.	K3
			C214.4	Determine the shear strength of soil	K3
			C214.5	Analyze both finite and infinite slopes	K4
7	II / IV	CE6411 STRENGTH OF MATERIALS LABORATORY	C215.1	Analyze the various stresses on mild steel rod by conducting tension and torsion tests	K4
			C215.2	Identify deflection test of metals and carriage springs	K3
			C215.3	Test for compression strength of wood and	K4



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			helical springs	
			Compare hardness and impact strength of different metals	K4
8	II / IV	CE6412 HYDRAULIC ENGINEERING LABORATORY	C216.1 Identify the flow in pipes	K3
			C216.2 Examine the frictional losses in pipes	K4
			C216.3 Develop characteristics of pumps	K3
			C216.4 Develop characteristics of turbines	K3
9	II / IV	CE6413 SURVEY PRACTICAL II	C217.1 Demonstrate the handling of theodolite	K2
			C217.2 Illustrate the handling of tacheometer	K2
			C217.3 Plan the general field marking for various engineering projects	K3
			C217.4 Experiment with setting of curves	K3
			C217.5 Make use of triangulation and astronomical surveying	K3

PROGRAMME: CIVIL ENGINEERING

DEGREE: UG

A. Y: 2017-2018

SEMESTER: 05

S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	III / V	CE6501 STRUCTURAL	C301.1 Determine the reaction forces and deflection for the beams and frames.	K3



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		ANALYSIS I	C301.2	Determine the shear force and bending moment of beams by influence line method.	K3
			C301.3	Analyse of three hinged, two hinged and fixed arches.	K3
			C301.4	Analyse the continuous beams by slope deflection method.	K3
			C301.5	Analyse the rigid frames by slope deflection method.	K3
2	III / V	CE6502 FOUNDATION ENGINEERING	C302.1	Understand the site investigation, methods and sampling.	K2
			C302.2	Get knowledge on bearing capacity and testing methods.	K3
			C302.3	Design shallow footings.	K3
			C302.4	Determine the load carrying capacity, settlement of pile foundation.	K3
			C302.5	Determine the earth pressure on retaining walls and analysis for stability.	K3
3	III / V	CE6503 ENVIRONMENTAL ENGINEERING I	C303.1	Explain the sources and characteristics of water.	K2
			C303.2	Select the various types of water conveyance systems	K3
			C303.3	Explain the principle of water treatment plants.	K2
			C303.4	Interpret the principles involved in advanced water treatment systems.	K2
			C303.5	Plan and design water distribution system supply to buildings	K3
4	III /	CE6504 HIGHWAY ENGINEERING	C304.1	Get knowledge on planning and aligning of highway.	K2



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	V		C304.2	Geometric design of highways	K3
			C304.3	Design flexible and rigid pavements.	K3
			C304.4	Gain knowledge on Highway construction materials, properties, testing methods	K2
			C304.5	Understand the concept of pavement management system, evaluation of distress and maintenance of pavements.	K2
5	II / IV	CE6505 Design of Reinforced Concrete Element	C305.1	Understand the various design methodologies for the design of RC elements.	K3
			C305.2	Know the analysis and design of flanged beams by limit state method and sign of beams for shear, bond and torsion.	K4
			C305.3	Design the various types of slabs and staircase by limit state method.	K4
			C305.4	Design columns for axial, uniaxial and biaxial eccentric loadings.	K4
			C305.5	Design of footing by limit state method.	K4
6	III / V	CE6506 Construction Techniques, Equipment and Practices	C306.1	Explain the different construction techniques and structural systems	K2
			C306.2	Understand various techniques and practices on masonry construction, flooring, and roofing.	K2
			C306.3	Plan the requirements for substructure construction.	K3
			C306.4	Choose the methods and techniques required for the construction of various types of super structures	K3
			C306.5	Select, maintain and operate hand and power tools and equipment used in the	K3



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				building construction sites	
7	III / V	GE6674- Communication and Soft skills laboratory based	C307.1	Apply appropriate communications skills across setting purpose and audiences	K2
			C307.2	Demonstrate Knowledge of communication theory and applications	K6
			C307.3	Organize different genres of texts adopting various reading strategies.	K6
			C307.4	Distinguish and comprehend different spoken discourses/excerpts in different accents.	K2
			C307.5	Listen to different accents, speeches and presentations.	K2
8	III / V	CE6511 SOIL MECHANICS LAB	C308.1	Conduct tests to determine both the index and engineering properties of soils	K4
			C308.2	Interpreting the shear strength of all types of soils by conducting lab tests	K4
			C308.3	Conduct tests to determine characterize the soil based on their properties.	K4
9	III / V	CE6512 SURVEY CAMP	C309.1	Applying the concepts of surveying	K3
			C309.2	Applying the practical experience of the realities in the field of Surveying	K3
			C309.3	Applying the concepts complexities involved in the field of Surveying	K3

PROGRAMME: CIVIL ENGINEERING

DEGREE: UG

A. Y: 2018-2019

SEMESTER: 06

S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
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1	III / VI	CE6601 Design of Reinforced Concrete & Brick Masonry Structures	C310.1	Analyse and design the cantilever and counterfort retaining wall	K4
			C310.2	Analyse and design the rectangular and circular water tank	K4
			C310.3	Analyse and design the staircase, flat slab, box culvert and road bridges	K4
			C310.4	Apply and design the various types of slabs by using yield line method	K3
			C310.5	Design the solid wall and cavity wall	K3
2	III / VI	CE6602 STRUCTURAL ANALYSIS II	C311.1	Analyse the indeterminate pin jointed plane frames continuous beams and rigid frames using matrix flexibility method.	K3
			C311.2	Understand the concept of matrix stiffness method and analysis of continuous beams, pin jointed trusses and rigid plane frames.	K3
			C311.3	Apply the basic knowledge of Finite Element method in the beams, truss and triangular elements	K4
			C311.4	Understand the concept of Plastic analysis and the method of analyzing beams and rigid frames.	K4
			C311.5	Analyse the suspension bridges with stiffening girders	K3
3	III / VI	CE6603 DESIGN OF STEEL STRUCTURES	C312.1	Understand the concepts of various design philosophies	K2
			C312.2	Design common bolted and welded connections for steel structures	K3
			C312.3	Design tension members and understand the effect of shear lag.	K3



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			C312.4	Understand the design concept of axially loaded columns and column base connections.	K3
			C312.5	Understand specific problems related to the design of laterally restrained and unrestrained steel beams	K3
4	III / VI	CE6604 RAILWAYS AIRPORTS AND HARBOUR ENGINEERING	C313.1	Understand the methods of route alignment and design elements in Railway Planning and Constructions.	K2
			C313.2	Understand the Construction techniques and Maintenance of Track laying and Railway stations.	K2
			C313.3	Gain an insight on the planning and site selection of Airport Planning and design.	K3
			C313.4	Analyze and design the elements for orientation of runways and passenger facility systems.	K3
			C313.5	Understand the various features in Harbours and Ports, their construction, coastal protection works and coastal Regulations to be adopted.	K2
5	III / VI	CE6605 - ENVIRONMENTAL ENGINEERING II	C314.1	Estimate sewage generation and design sewer system including sewage pumping stations	K3
			C314.2	Understanding on the characteristics and composition of sewage, self-purification of streams	K3
			C314.3	Perform basic design of the unit operations and processes that are used in sewage treatment	K3
			C314.4	Understand the standard methods for disposal of sewage.	K2
			C314.5	Gain knowledge on sludge treatment and disposal.	K2



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6	III / VI	CE6002 - CONCRETE TECHNOLOGY	C315.1	Understand The various requirements of cement, aggregates and water for making concrete	K2
			C315.2	Understand The effect of admixtures on properties of concrete	K2
			C315.3	Understand The concept and procedure of mix design as per IS method	K2
			C315.4	Understand The properties of concrete at fresh and hardened state	K2
			C315.5	Understand The importance and application of special concretes.	K2
7	III / VI	CE6611 ENVIRONMENTAL ENGINEERING Laboratory	C316.1	Quantify the pollutant concentration in water and wastewater	K3
			C316.2	Suggest the type of treatment required and amount of dosage required for the treatment	K3
			C316.3	Examine the conditions for the growth of micro-organisms	K4
8	III / VI	CE6612 CONCRETE AND HIGHWAY Laboratory	C317.1	Determine fresh properties of concrete	K4
			C317.2	Examine hardened properties of concrete	K4
			C317.3	Test the specimens for determining of various properties of aggregates	K4
			C317.4	Identify various properties of bitumen	K3



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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	IV / VII	CE6701 STRUCTURAL DYNAMICS AND EARTHQUAKE ENGINEERING	C401.1 Develop knowledge in the simulation and mathematical model development.	K3
			C401.2 Trained to identify, formulate and solve complicated problem.	K3
			C401.3 Understand the role of natural calamity in the damage of structures.	K3
			C401.4 Develop the skill to analyse data and to apply the same in the practical problems.	K2
			C401.5 Apply the developed methodologies for the safe and stable design of structures	K3
2	IV / VII	CE6702 PRESTRESSED CONCRETE STRUCTURES	C402.1 Understand the behaviour of prestressed concrete members and able to analyze the prestressed concrete beams.	K3
			C402.2 Design the prestressed concrete members for flexure and shear as per the relevant design code (IS 1343).	K4
			C402.3 Analyze for deflection of prestressed concrete members and design the anchorage zone.	K4
			C402.4 Analyze and design of composite beams and continuous beams.	K4
			C402.5 Design of prestressed concrete structures - Tanks, pipes and poles.	K4



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3	IV / VII	CE6703 WATER RESOURCES AND IRRIGATION ENGINEERING	C403.1	Develop the knowledge on reservoir planning and fixation of storage capacity of reservoir	K3
			C403.2	Choose the economical method of water resource planning and irrigation	K3
			C403.3	Explain about the concepts of irrigation	K2
			C403.4	Interpret different types of impounding structures and canals	K2
			C403.5	Compare different irrigation methods	K2
4	IV / VII	CE6704 ESTIMATION AND QUANTITY SURVEYING	C404.1	Understand the Estimate the quantities for buildings,	K3
			C404.2	Understand the Rate Analysis for all Building works, canals, and Roads and Cost Estimate.	K3
			C404.3	Understand the types of specifications, tender notices types.	K2
			C404.4	Evaluate the valuation for building and land.	K3
			C404.5	Understand the principles of report preparation	K2
5	IV / VII	CE6007 HOUSING PLANNING AND MANAGEMENT	C405.1	Understand various types of housing at state and national level	K2
			C405.2	Identify the needs for sites and services	K2
			C405.3	Understand the design of urban development projects	K2
			C405.4	Understand the various construction techniques and cost effective materials.	K2
			C405.5	Develop appraisal report for the housing projects.	K2



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6	IV / VII	EN6501 MUNICIPAL SOLID WASTE MANAGEMENT	C406.1	Understanding of the nature and characteristics of municipal solid wastes and the regulatory requirements regarding municipal solid waste management.	K2
			C406.2	Reduction, reuse and recycling of waste.	K2
			C406.3	Plan and design systems for storage, collection, transport, processing and disposal of municipal solid waste.	K2
			C406.4	Gain knowledge on the issues on solid waste management from an integrated and holistic perspective, as well as in the local and international context.	K2
			C406.5	Design and operation of sanitary landfill.	K2
7	IV / VII	CE6711 COMPUTER AIDED DESIGN AND DRAFTING LABORATORY	C407.1	Design and draw reinforced concrete cantilever and counterfort Retaining Walls	K4
			C407.2	Design and draw solid slab and Tee Beam bridges	K4
			C407.3	Design and draw circular and rectangular water tanks	K4
			C407.4	Design and draw plate girder and truss girder bridges	K4
8	IV / VII	CE6712DESIGN PROJECT	C408.1	Design problems related to Civil Engineering while designing the structures.	K4
			C408.2	Design problems related to industrial and residential structures	K4
			C408.3	Solve various design problems related to commercial structures.	K3



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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	IV / VIII	MG6851 PRINCIPLES OF MANAGEMENT	C409.1 Understand the management functions and organizations	K2
			C409.2 Understand the management functions of planning	K2
			C409.3 Understand the management functions of organizing	K2
			C409.4 Explain the management functions of controlling	K2
			C409.5 Explain the management functions of directing	K2
2	IV / VIII	CE6016 PREFEABRICATED STRUCTURES	C410.1 Summarize the principles, manufacturing, production methods, and erection of prefabrication.	K2
			C410.2 Illustrate the panel systems, slabs, connections used in precast construction.	K2
			C410.3 Explain the design principles of prefabrication.	K2
			C410.4 Outline the joints and connections used in prefabricated construction.	K2
			C410.5 Explain the concept of progressive collapse and design for abnormal loads.	K2



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3	IV / VIII	CE6021 REPAIR AND REHABILITATION OF STRUCTURES	C411.1	Know the importance of maintenance and assessment method of distressed structures.	K2
			C411.2	Understand the strength and durability properties ,their effects due to climate and temperature.	K2
			C411.3	Study the recent development in concrete	K2
			C411.4	Learn the techniques for repair and protection methods	K2
			C411.5	Repair, rehabilitation and retrofitting of structures and demolition methods.	K2
4	IV / VIII	CE6811 Project Work	C412.1	Analyse any challenging practical problems related to civil engineering	K4
			C412.2	Solve the problem from its identification and through literature reviews	K4
			C412.3	Prepare project reports, presentations and to face interviews.	K3
			C412.4	Develop different solution by formulating proper methodology	K5



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COURSE OUT COME REGULATION 2017

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	I / I	HS8151 - COMMUNICATIVE ENGLISH	C101.1 Communicate clearly both in the written form and orally using appropriate vocabulary and comprehend written texts to make inferences.	K2
			C101.2 Speak persuasively in different social contexts and write biographical details and technical documents cohesively, coherently and flawlessly using appropriate words.	K2
			C101.3 Speak, read and write effectively for a variety of professional and social settings.	K2
			C101.4 Read descriptive, narrative, expository and interpretive texts and write using creative, critical, analytical and evaluative methods.	K6
			C101.5 Listen, comprehend and respond to different spoken and written discourses/excerpts in different accents and write different genres of texts adopting various writing strategies.	K6
2	I / I	MA8151 - ENGINEERING MATHEMATICS – I	C102.1 Use both the limit definition and rules of differentiation to differentiate functions.	K3
			C102.2 Apply differentiation to solve maxima and minima problems	K3
			C102.3 Evaluate integrals both by using Reimann sums and by using the fundamental theorem of convergent improper	K5



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				integrals. Evaluate integrals using techniques of integration, such as substitution, partial Fractions, integration by parts and improper integrals.	
			C102.4	Apply integration to compute multiple integrals, area, volume, integrals in polar Coordinates, in addition to change of order and change of variables.	K3
			C102.5	Apply various techniques in solving differential equations.	K3
3	I / I	PH8151 - ENGINEERING PHYSICS	C103.1	Discuss the Young's modulus and Rigidity modulus of elasticity of materials and its determination through experimental methods .	K2
			C103.2	Describe the characteristics of laser light and their application in semiconductor laser .	K2
			C103.3	Discuss the principle behind the propagation of light through an optical fibre and its application in sensors.	K2
			C103.4	Summarize the different modes of heat transfer.	K2
			C103.5	Describe the unit cell characteristics and the growth of crystals	K2
4	I / I	CY8151 - ENGINEERING CHEMISTRY	C104.1	Summarize the water related problems in boilers and their treatment techniques.	K2
			C104.2	Discuss the applications of adsorption in the field of water and air pollution abatement.	K1
			C104.3	Discuss the types of catalysis and the mechanism of enzyme catalysis.	K2



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			C104.4	Associate phase rule in the alloying and the behaviour of one component and two component systems using phase diagram.	K2
			C104.5	Summarize the principles and generation of energy in batteries ,nuclear reactors, solar cells, wind mills and fuel cells.	K2
5	I / I	GE8151- PROBLEM SOLVING AND PYTHON	C105.1	Discuss the logical solutions through Flowcharts, Algorithms and Pseudo code	K2
			C105.2	Explain the syntax for python programming constructs.	K2
			C105.3	Compute the flow of the program to obtain the programmatic solution.	K2
			C105.4	Examine the programs with sub problems using 'Python' language	K3
			C105.5	Compute the compound data using Python lists, tuples, and dictionaries	K2
6	I / I	GE8152- ENGINEERING GRAPHICS	C106.1	Sketch the conic sections, special curves, and draw orthographic views from pictorial views and models.	K4
			C106.2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.	K3
			C106.3	Sketch the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures.	K4
			C106.4	Practice the sectional views of solids like cube, prisms, pyramids, cylinders & cones and extend its lateral surfaces	K3
			C106.5	Sketch the perspective projection of simple solids, truncated prisms, pyramids, cone and cylinders and sketch the isometric projection of simple	K4



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				machine parts.	
7	I / I	GE8161- PROBLEM SOLVING AND PYTHON LAB	C107.1	Write, test, and debug simple Python programs	K1
			C107.2	Apply the concept of conditionals and loops in Python programs.	K3
			C107.3	Develop the Python programs step-wise by defining functions and calling them.	K4
			C107.4	Use Python lists, tuples, dictionaries for representing compound data.	K3
			C107.5	Read and write data from/to files in Python.	K2
8	I / I	BS8161 - PHYSICS AND CHEMISTRY LABORATORY	C108.1	Apply physics principles of optics and thermal physics to evaluate engineering properties of materials.	K3
			C108.2	Ability to test materials by using their knowledge of applied physics principles in optics and properties of matter.	K5
			C108.3	Perform the quantitative chemical analysis of chloride and dissolved oxygen.	K5
			C108.4	Determine the amount of acids by using the instruments of conductivity meter and pH meter.	K5
			C108.5	Determine the hardness, alkalinity and metal ion content in the water samples by volumetric titration.	K5



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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	I / II	HS8251 - TECHNICAL ENGLISH	C109.1	Read technical texts and write area specific texts effortlessly.	K2
			C109.2	Listen and comprehend lectures and talks in their areas of specialization and write effectively for a variety of professional and social settings	K2
			C109.3	Speak and write appropriately and effectively in varied formal and informal contexts.	K6
			C109.4	Write effectively and persuasively and produce different types of writing such as letters, minutes, reports and winning job applications.	K6
			C109.5	Communicate clearly using technical vocabulary in their professional correspondences	K2
2	I / II	MA8251 - ENGINEERING MATHEMATICS – II	C110.1	Calculate the eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices	K3
			C110.2	Evaluate the line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification	K5
			C110.3	Determine Analytic functions, Conformal mapping and Bilinear transformation	K3
			C110.4	Evaluate the Cauchy's integrals, Taylor's and Laurent's and residue theorem for evaluation for real integrals using circular	K5



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				and semicircular, contour	
			C110.5	Evaluate Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.	K5
			C110.6	Discuss Laplace Transform methods to solve initial value problems for constant coefficient linear ODEs.	K2
3	I / II	PH8201 - PHYSICS FOR CIVIL ENGINEERING	C111.1	Analyze the thermal performance of buildings.	K2
			C111.2	Acquire knowledge on the acoustic properties of buildings.	K1
			C111.3	Understand the various lighting design of buildings.	K2
			C111.4	Knowledge on the properties and performance of engineering materials	K3
			C111.5	Understand the Hazards of buildings.	K2
4	I / II	BE8251 - BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	C112.1	Understand the electrical circuit and their working principles	K2
			C112.2	Identify the electrical components of a machines and their applications	K2
			C112.3	Explain the characteristics of the electrical machines	K2
			C112.4	Identify the digital electronics circuits and their components	K2
			C112.5	Explain the fundamentals of communication systems	K2
5	I / II	GE8291- ENVIRONMENTAL SCIENCE AND	C113.1	Summarize the values, threats, conservation of biodiversity and ecosystems.	K2



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		ENGINEERING	C113.2	Discuss the sources, effects, control measures of different types of pollution, and solid waste management.	K1
			C113.3	Associate the effects of exploitation of Natural resources on environment	K3
			C113.4	Summarize the water conservation methods and various environmental acts for environmental sustainability	K2
			C113.5	Discuss scientific, technological, economic and social solutions to environmental problems	K1
6	I / II	GE8292 - ENGINEERING MECHANICS	C114.1	Illustrate the vectorial and scalar representation of forces and moments	K2
			C114.2	Analyse the rigid body in equilibrium	K3
			C114.3	Evaluate the properties of surfaces and solids	K4
			C114.4	Calculate dynamic forces exerted in rigid body	K3
			C114.5	Determine the friction and the effects by the laws of friction	K3
7	I / II	GE8261 - ENGINEERING PRACTICES LABORATORY	C115.1	Fabricate carpentry components and pipe connections including plumbing works.	K2
			C115.2	Use welding equipments to join the structures.	K2
			C115.3	Carry out the basic machining operations	K2
			C115.4	Make the models using sheet metal works	K4
			C115.5	Illustrate on centrifugal pump, Air conditioner, operations of smithy,	K4



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				foundary and fittings	
			C115.6	Carry out basic home electrical works and appliances	K2
8	I / II	CE8211 - COMPUTER AIDED BUILDING DRAWING Laboratory	C116.1	Draft the plan, elevation and sectional views of the buildings, using computer softwares	K3
			C116.2	Draft the plan, elevation and sectional views of the industrial structures using computer softwares	K3
			C116.3	Draft the plan, elevation and sectional views of the framed buildings using computer softwares	K3

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	II / III	MA8353 - TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS	C201.1	Solve First, Second order homogeneous and non homogeneous partial differential equations	K3
			C201.2	Find the Fourier series of a given function satisfying Dirchlet's condition.	K2
			C201.3	Apply Fourier series to solve one dimensional wave, one and two dimensional heat equations.	K3
			C201.4	Determine Fourier transform for a given function and use them to evaluate certain definite Integrals	K2
			C201.5	Determine z transforms of standard functions and use them to solve	K3



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				difference equations	
2	II / III	CE8301 - STRENGTH OF MATERIALS I	C202.1	Understand the concepts of stress and strain, principal stresses and principal planes.	K2
			C202.2	Determine Shear force and bending moment in beams and understand concept of theory of simple bending.	K4
			C202.3	Calculate the deflection of beams by different methods and selection of method for determining slope or deflection.	K4
			C202.4	Apply basic equation of torsion in design of circular shafts and helical springs.	K3
			C202.5	Analyze the pin jointed plane and space trusses	K4
3	II / III	CE8302 - FLUID MECHANICS	C203.1	Get a basic knowledge of fluids in static, kinematic and dynamic equilibrium.	K2
			C203.2	Understand and solve the problems related to equation of motion.	K3
			C203.3	Gain knowledge about dimensional and model analysis.	K3
			C203.4	Learn types of flow and losses of flow in pipes.	K2
			C203.5	Understand and solve the boundary layer problems.	K3
4	II / III	CE8351 - SURVEYING	C204.1	The use of various surveying instruments and mapping	K2
			C204.2	Measuring Horizontal angle and vertical angle using different instruments	K3
			C204.3	Methods of Leveling and setting Levels with different instruments	K2



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			C204.4	Understand the Concepts of astronomical surveying and methods to determine time, longitude, latitude and azimuth.	K3
			C204.5	Understand the Concept and principle of modern surveying.	K2
5	II / III	CE8391 CONSTRUCTION MATERIALS	C205.1	Compare the properties of most common and advanced building materials.	K2
			C205.2	Understand the typical and potential applications of lime, cement and aggregates	K2
			C205.3	Know the production of concrete and also the method of placing and making of concrete elements.	K2
			C205.4	Understand the applications of timbers and other materials	K2
			C205.5	Understand the importance of modern material for construction.	K2
6	II / III	GE8392- ENGINEERING GEOLOGY	C206.1	Explain the importance of geology and compare the geological features with engineering importance.	K2
			C206.2	Explain about the types of various minerals.	K2
			C206.3	Apply knowledge regarding the underline rock formation to get complete idea about igneous, sedimentary and metamorphic rock	K2
			C206.4	Explain about fault, folds, unconformity and joints which are present in the strata of the earth crust, by which they can able to compare the particular area with their construction site or engineering	K2



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				projects.	
			C206.5	Apply knowledge related with the dams, tunnels, bridges and reservoir with the help of these they can be able to apply their knowledge for making of their engineering projects	K2
7	II / III	CE8311- CONSTRUCTION MATERIALS LABORATORY	C207.1	The students will have the required knowledge in the area of testing of construction materials	K4
			C207.2	The students will have the required knowledge in components of construction elements experimentally.	K4
			C207.3	The students will have the required knowledge in the area of testing of concrete	K4
8	I / II	CE8361 - SURVEY LAB	C208.1	Acquired practical knowledge on handling basic survey instruments including Theodolite, Tacheometry.	K4
			C208.2	Acquired practical knowledge on handling basic survey instruments including Total Station and GPS	K4
			C208.3	Knowledge to carryout Triangulation and Astronomical surveying including general field marking for various engineering projects and Location of site etc.	K4
9	I / II	HS8381 - INTERPERSONAL SKILLS/LISTENING & SPEAKING	C209.1	Speak effectively on various academic topics and respond to questions.	K2
			C209.2	Converse effectively with the use of conversation starters and discourse markers.	K6
			C209.3	Listen and respond to various academic dialogues and discussions	K2



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			C209.4	Participate confidently and appropriately in informal and formal conversations and group discussions.	K6
			C209.5	Use a range of presentation tools like PPT, Videos, and Charts etc. to make an engaging presentation.	K6

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	II / IV	MA8491- NUMERICAL METHODS	C210.1	Determine the solution of algebraic and transcendental system of linear equations	K3
			C210.2	To interpolate the values of unknown functions using Newton's Formula	K3
			C210.3	Estimate the numerical values of the derivatives and integrals of unknown function.	K3
			C210.4	Solve first and second order initial value problem	K3
			C210.5	Solve Numerically boundary value problem	K3
2	II / IV	CE8401- CONSTRUCTION TECHNIQUES, EQUIPMENTS & PRACTICES.	C211.1	Explain the different construction techniques and structural systems	K2
			C211.2	Understand various techniques and practices on masonry construction, flooring, and roofing.	K2
			C211.3	Plan the requirements for substructure construction.	K3
			C211.4	Choose the methods and techniques required for the construction of various	K3



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			types of super structures	
			C211.5 Select, maintain and operate hand and power tools and equipment used in the building construction sites	K3
3	II / IV	CE8402 STRENGTH OF MATERIALS II	C212.1 Determine the strain energy and compute the deflection of determinate beams, frames and trusses using energy principles.	K4
			C212.2 Analyze propped cantilever, fixed beams and continuous beams using theorem of three moment equation for external loadings and support settlements.	K4
			C212.3 Examine the load carrying capacity of columns and stresses induced in columns and cylinders.	K4
			C212.4 Determine principal stresses and planes for an element in three dimensional state of stress and study various theories of failure	K4
			C212.5 Determine the stresses due to Unsymmetrical bending of beams, locate the shear center, and find the stresses in curved beams	K3
4	II / IV	CE8403 APPLIED HYDRAULIC ENGINEERING	C213.1 Apply their knowledge of fluid mechanics in addressing problems in open channels.	K3
			C213.2 Solve problems in uniform, gradually varied flows in steady state conditions.	K3
			C213.3 Solve problems in uniform, rapidly varied flows in steady state conditions.	K3
			C213.4 Understand the principles, working and application of turbines.	K3
			C213.5 Understand the principles, working and application of pumps.	K3



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5	II / IV	CE8404 CONCRETE TECHNOLOGY	C214.1	Summarize the various requirements of cement, aggregates and water for making concrete	K2
			C214.2	Illustrate the effect of admixtures on properties of concrete	K2
			C214.3	Understand The concept and procedure of mix design as per IS method	K2
			C214.4	Outline the properties of concrete at fresh and hardened state	K2
			C214.5	Explain the importance and application of special concretes.	K2
6	II / IV	CE8491SOIL MECHANICS	C215.1	Classify the soil and assess the engineering properties, based on index properties.	K2
			C215.2	Understand the stress concepts in soils	K2
			C215.3	Understand and identify the settlement in soils.	K2
			C215.4	Determine the shear strength of soil	K3
			C215.5	Analyze both finite and infinite slopes	K4
7	II / IV	CE8481 STRENGTH OF MATERIALS LABORATORY	C216.1	Analyze the various stresses on mild steel rod by conducting tension and torsion tests	K4
			C216.2	Identify deflection test of metals and carriage springs	K3
			C216.3	Test for compression strength of wood and helical springs	K4
			C216.4	Compare hardness and impact strength of different metals	K4
8	II /	CE8461 APPLIED HYDRAULIC	C217.1	Identify the flow in pipes	K3



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	IV	ENGINEERING LABORATORY	C217.2	Examine the frictional losses in pipes	K4
			C217.3	Develop characteristics of pumps	K3
			C217.4	Develop characteristics of turbines	K3
9	II / IV	HS8461 ADVANCED READING AND WRITING LAB	C218.1	Strengthen the reading skills	K2
			C218.2	Enhance the technical writing skills	K3
			C218.3	Develop proposal writing skills	K6
			C218.4	Write winning job applications.	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	III / V	CE8501 DESIGN OF REINFORCED CONCRETE STRUCTURES	C301.1 Understand the various design methodologies for the design of RC elements.	K3
			C301.2 Analyse and design of flanged beams by limit state method and sign of beams for shear, bond and torsion.	K4
			C301.3 Analyse and design the various types of slabs and staircase by limit state method.	K4
			C301.4 Analyse and design columns for axial, uniaxial and biaxial eccentric loadings.	K4
			C301.5 Analyse and design of footing by limit state method.	K4



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2	III / V	CE8502 STRUCTURAL ANALYSIS I	C302.1	Analyze continuous beams, pin-jointed indeterminate plane frames and rigid plane frames by strain energy method	K3
			C302.2	Analyse the continuous beams and rigid frames by slope deflection method.	K3
			C302.3	Understand the concept of moment distribution and analysis of continuous beams and rigid frames with and without sway.	K3
			C302.4	Analyse the indeterminate pin jointed plane frames continuous beams and rigid frames using matrix flexibility method.	K3
			C302.5	Understand the concept of matrix stiffness method and analysis of continuous beams, pin jointed trusses and rigid plane frames.	K3
3	III / V	EN8491 WATER SUPPLY ENGINEERING	C303.1	Understand an insight into the structure of drinking water supply systems, including water transport, treatment and distribution	K2
			C303.2	Learn about intake structure, pipe materials ,pumps	K2
			C303.3	Gain knowledge in various unit operations and processes in water treatment,	K3
			C303.4	Design the various functional units in water treatment(primary treatment)	K2
			C303.5	Gain knowledge in various unit operations and processes in water treatment,	K3
4	III / V	CE8591 FOUNDATION ENGINEERING	C304.1	Design the various functional units in water treatment(secondary treatment)	K2
			C304.2	Understand about the water distribution system and analyse the pipe network	K3
			C304.3	Design shallow footings.	K3



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			C304.4	Determine the load carrying capacity, settlement of pile foundation.	K3
			C304.5	Determine the earth pressure on retaining walls and analysis for stability.	K3
5	II / IV	GI8013 ADVANCED SURVEYING	C305.1	Know the astronomical surveying concepts & Various Problems.	K3
			C305.2	Understand the concept of photogrammetric surveying and interpretation	K2
			C305.3	Solve the field problems with Totalstation	K2
			C305.4	Know the GPS surveying and the data processing	K2
			C305.5	Design the route surveys and tunnel alignments	K3
6	III / V	OAI551 ENVIRONMENT AND AGRICULTURE	C306.1	Understand the environmental concerns in agriculture	K2
			C306.2	Understand the environmental impacts in modernized agriculture	K2
			C306.3	Understand the climate change and water scarcity problems in our environment	K2
			C306.4	Understand the Genetically modified crops, Ecological diversity in our environment	K2
			C306.5	Understand the emerging issues in global environmental concerns and alternate culture system	K2
7	III / V	CE8511SOIL MECHANICS Laboratory	C307.1	Conduct tests to determine both the index and engineering properties of soils	K4
			C307.2	Interpreting the shear strength of all types of soils by conducting lab tests	K4



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			C307.3	Conduct tests to determine characterize the soil based on their properties.	K4
8	III / V	CE8512 WATER AND WASTE WATER ANALYSIS LABORATORY	C308.1	Quantify the pollutant concentration in water and wastewater	K3
			C308.2	Suggest the type of treatment required and amount of dosage required for the treatment	K3
			C308.3	Examine the conditions for the growth of micro-organisms	K4
9	III / V	CE8513 SURVEY CAMP	C309.1	Applying the concepts of surveying	K3
			C309.2	Applying the practical experience of the realities in the field of Surveying	K3
			C309.3	Applying the concepts complexities involved in the field of Surveying	K3

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	III / VI	CE8601 DESIGN OF STEEL STRUCTURAL ELEMENTS	C310.1	Understand the concepts of various design philosophies	K2
			C310.2	Design common bolted and welded connections for steel structures	K3
			C310.3	Design tension members and understand the effect of shear lag.	K3
			C310.4	Understand the design concept of axially loaded columns and column base	K3



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				connections.	
			C310.5	Understand specific problems related to the design of laterally restrained and unrestrained steel beams	K3
2	III / VI	CE8602 STRUCTURAL ANALYSIS - II	C311.1	Draw influence lines for statically determinate structures and calculate critical stress resultants.	K3
			C311.2	Understand Muller Breslau principle and draw the influence lines for statically indeterminate beams.	K3
			C311.3	Analyse of three hinged, two hinged and fixed arches.	K4
			C311.4	Analyse the suspension bridges with stiffening girders	K4
			C311.5	Understand the concept of Plastic analysis and the method of analyzing beams and rigid frames.	K3
3	III / VI	CE8603 IRRIGATION ENGINEERING	C312.1	understand the knowledge and skills on crop water requirements.	K2
			C312.2	Understand the methods and management of irrigation.	K2
			C312.3	Gain knowledge on types of Impounding structures	K2
			C312.4	Understand methods of irrigation including canal irrigation.	K2
			C312.5	Get knowledge on water management on optimization of water use.	K2
4	III / VI	CE8604 HIGHWAY ENGINEERING	C313.1	Understand the planning and aligning of highway.	K2
			C313.2	Understand the Geometric design of highways	K3



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			C313.3	Understand the Design flexible and rigid pavements.	K3
			C313.4	Gain the knowledge on Highway construction materials, properties, testing methods	K2
			C313.5	Understand the concept of pavement management system, evaluation of distress and maintenance of pavements.	K2
5	III / VI	EN8592 WASTE WATER ENGINEERING	C314.1	estimate sewage generation and design sewer system including sewage pumping stations , the characteristics and composition of sewage, self-purification of streams	K3
			C314.2	perform basic design of the unit operations and processes - primary treatment of sewage that are used in sewage treatment	K3
			C314.3	perform basic design of the unit operations and processes-secondary treatment of sewage that are used in sewage treatment	K3
			C314.4	Understand the standard methods for disposal of sewage	K2
			C314.5	Gain knowledge on sludge treatment and disposal.	K2
6	III / VI	CE8001 GROUND IMPROVEMENT TECHNIQUES	C315.1	Gain knowledge on methods and selection of ground improvement techniques	K2
			C315.2	Understand dewatering techniques and design for simple cases.	K2
			C315.3	Get knowledge on insitu treatment of cohesionless and cohesive soils	K3
			C315.4	Understand the concept of earth reinforcement and design of reinforced	K3



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				earth	
			C315.5	Get to know types of grouts and grouting technique.	K3
7	III / VI	CE8611 HIGHWAY ENGINEERING LABORATORY	C316.1	Identification of the techniques to characterize various pavement materials through relevant tests.	K4
			C316.2	Testing techniques and characteristics of aggregate and bituminous materials	K4
8	III / VI	CE8612 IRRIGATION AND ENVIRONMENTAL DRAWING LAB	C317.1	Design and draw various units of Municipal water treatment plants	K4
			C317.2	Design and draw various types of a dam structures.	K4
			C317.3	Design and draw various units of sewage treatment plants.	K4
9	III / VI	HS8581 PROFESSIONAL COMMUNICATION	C318.1	Summarize various skills such as Soft Skills, Hard skills, employability and career Skills and demonstrate values such as Time Management and general awareness of current affairs.	K2
			C318.2	Demonstrate oneself before the audience by making effective presentations on introducing oneself, answering questions and visual presenting.	K3
			C318.3	Demonstrate oneself by participating in group discussions, brainstorming sessions and question sessions. Develop activities to improve GD Skills	K6
			C318.4	Develop interview skills so as to be successful in them.	K6
			C318.5	Develop adequate Soft Skills required for the workplace and long-term career.	K6



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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	IV / VII	CE8701 ESTIMATION , COSTING AND VALUATION ENGINEERING.	C401.1 Estimate the quantities for buildings,	K3
			C401.2 Rate Analysis for all Building works, canals, and Roads and Cost Estimate.	K3
			C401.3 Understand types of specifications, principles for report preparation, tender notices types.	K2
			C401.4 Gain knowledge on types of contracts	K2
			C401.5 Evaluate valuation for building and land.	K3
2	IV / VII	CE8702 RAILWAY AIRPORT, DOCKS AND HARBOUR ENGINEERING	C402.1 Understand the methods of route alignment and design elements in Railway Planning and Constructions.	K2
			C402.2 Understand the Construction techniques and Maintenance of Track laying and Railway stations.	K2
			C402.3 Gain an insight on the planning and site selection of Airport Planning and design.	K3
			C402.4 Analyze and design the elements for orientation of runways and passenger facility systems.	K3
			C402.5 Understand the various features in Harbours and Ports, their construction, coastal protection works and coastal Regulations to be adopted.	K2



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3	IV / VII	CE8703 STRUCTURAL DESIGN AND DRAWING	C403.1	Design and draw reinforced concrete Cantilever and Counterfort Retaining Walls	K3
			C403.2	Design and draw flat slab as per code provisions	K3
			C403.3	Design and draw reinforced concrete and steel bridges	K3
			C403.4	Design and draw reinforced concrete and steel water tanks	K3
			C403.5	Design and detail the various steel trusses and cantry girders	K3
4	IV / VII	EN8591 MUNICIPAL SOLID WASTE MANAGEMENT	C404.1	Understanding of the nature and characteristics of municipal solid wastes and the regulatory requirements regarding municipal solid waste management.	K2
			C404.2	Reduction, reuse and recycling of waste.	K2
			C404.3	Plan and design systems for storage, collection, transport, processing and disposal of municipal solid waste.	K2
			C404.4	Gain knowledge on the issues on solid waste management from an integrated and holistic perspective, as well as in the local and international context.	K2
			C404.5	Design and operation of sanitary landfill.	K2
5	IV / VII	OML751 TESTING OF MATERIALS	C405.1	Understand the the standards and advantages of testing	K2
			C405.2	Understand the mechanical testing and the techniques.	K2
			C405.3	Understand and perform the non testructive testing methods.	K2
			C405.4	Understand the macro and micropic testing	K2



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				of materials	
			C405.5	Understand the chemical testing of materials	K2
6	IV / VII	CE8711 CREATIVE AND INNOVATIVE PROJECT	C406.1	Solve various design problems related to Civil Engineering while designing the structures.	K3
			C406.2	Solve various design problems related to industrial and residential structures	K3
			C406.3	Solve various design problems related to commercial structures.	K3
7	IV / VII	CE8712 INDUSTRIAL TRAINING	C407.1	Analyse any challenging practical problems related to civil engineering	K4
			C407.2	Solve the problem from its identification and through literature reviews	K4
			C407.3	Prepare project reports, presentations and to face interviews.	K3
			C407.4	Develop different solution by formulating proper methodology	K5



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COURSE OUT COME REGULATION 2013

PROGRAMME:COMPUTER SCIENCE AND ENGINEERING	DEGREE: UG	A.Y: 2016-17	SEMESTER: 01
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	I / I	HS6151 - TECHNICAL ENGLISH - I	C101.1	Understand clearly, confidently, comprehensibly, and communicate with one or many listeners using appropriate communicative strategies.	K2
			C101.2	Construct cohesively and coherently and flawlessly avoiding grammatical errors, using a wide vocabulary range, organizing their ideas logically on a topic.	K6
			C101.3	Organize different genres of texts adopting various reading strategies.	K6
			C101.4	Distinguish and comprehend different spoken discourses/excerpts in different accents.	K2
			C101.5	Listen to different accents, speeches and presentations.	K2
2	I / I	MA6151 - MATHEMATICS - I	C102.1	Learn a clear idea of matrix algebra pertaining eigen values and eigen vectors in addition dealing with quadratic forms.	K2
			C102.2	Learn infinite series and their convergence and acquire the knowledge of with limitations of using infinite series approximations for solutions arising in mathematical modeling.	K2
			C102.3	Understand and characterize phenomena which evolve around circle of curvature and envelope.	K2



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			C102.4	Extend the function of a one variable to several variables. Multivariable functions of real variables arise inevitable in engineering.	K2
			C102.5	Exposed to double and triple integration so that they can handle integrals of higher order which are applied in engineering field.	K3
3	I / I	PH6151 - ENGINEERING PHYSICS - I	C103.1	Describe the crystal structures and various crystal growth techniques.	K1
			C103.2	Analyze the elastic nature of materials and thermal behaviour of materials.	K4
			C103.3	Apply the knowledge of quantum mechanics and classical mechanics in addressing the problems related to science and technology.	K3
			C103.4	Apply the knowledge about designing an auditorium with good acoustical properties and make use of Ultrasonics and its applications in various fields.	K3
			C103.5	Illustrate the advantages of optical communication using LASER.	K4
4	I / I	CY6151 - ENGINEERING CHEMISTRY - I	C104.1	Describe the methods of polymerization, types, Properties and uses of polymers.	K1
			C104.2	Illustrate the concepts of basic thermodynamics and problem solving skills in various disciplines of Engineering.	K4
			C104.3	Discuss the laws of photochemistry in recognizing the interaction of light with matter and its applications in luminescence and spectroscopy	K2
			C104.4	Review the use of phase rule in identifying its applications in metallurgy and alloys.	K4



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			C104.5	Summarize the basic knowledge in Nanochemistry and distinguish the existing technology with nanotechnology.	K2
5	I / I	GE6151 - COMPUTER PROGRAMMING	C105.1	Elaborate the organization of digital computer and design the solution for simple computing problems using algorithm, flowchart and pseudo code.	K6
			C105.2	Apply the different looping structure to solve simple scientific and statistical problems.	K3
			C105.3	Devise the solutions for simple problems using arrays and strings	K6
			C105.4	Demonstrate the usage of dynamic memory allocation and pointer variables.	K3
			C105.5	Illustrate the concepts of structure and union with an example programs.	K4
6	I / I	GE6152 - ENGINEERING GRAPHICS	C106.1	Sketch the conic sections, special curves, and draw orthographic views from pictorial views and models.	K4
			C106.2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.	K3
			C106.3	Sketch the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures.	K4
			C106.4	Practice the sectional views of solids like cube, prisms, pyramids, cylinders & cones and extend its lateral surfaces	K3
			C106.5	Sketch the perspective projection of simple solids, truncated prisms, pyramids, cone and cylinders and sketch the isometric projection of simple machine parts.	K4
7	I / I	GE6161 - COMPUTER	C107.1	Describe the usage of office automation tools	K1



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		PRACTICES LABORATORY	C107.2	Apply the good programming methods for program development.	K3
			C107.3	Design and implement the C program for simple application	K4
			C107.4	Develop and implement the recursive programs	K4
			C107.5	Implement the C program with the help of Structures and Union	K5
8	I / I	GE6162 - ENGINEERING PRACTICES LABORATORY	C108.1	Construct Electrical and Electronic circuits.	K6
			C108.2	Examine different types of electronic circuits and components.	K3
			C108.3	Recognize electrical safety rules, grounding, general house wiring.	K6
			C108.4	Explore soldering practices.	K3
9	I / I	GE6163 - PHYSICS AND CHEMISTRY LABORATORY	C109.1	Apply physics principles of optics and thermal physics to evaluate engineering properties of materials.	K3
			C109.2	Perform the quantitative chemical analysis of chloride and dissolved oxygen.	K5
			C109.3	Determine the amount of acids by using the instruments of conductivity meter and pH meter.	K5

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	I / II	HS6251 - TECHNICAL	C110.1 Speak convincingly, express their opinions clearly, initiate a discussion, negotiate, argue using appropriate communicative	K2



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		ENGLISH II		strategies..	
			C110.2	Write effectively and persuasively and produce different types of writing such as narration, description, exposition and argument as well as creative, critical, analytical and evaluative writing.	K5
			C110.3	Read different genres of texts, infer implied meanings and critically analyse and evaluate them for ideas as well as for method of presentation.	K1
			C110.4	Listen/view and comprehend different spoken excerpts critically and infer unspoken and implied meanings.	K2
			C110.5	Read and write effectively for a variety of professional and social settings	K2
2	I / II	MA6251 - MATHEMATICS - II	C111.1	Solve ordinary differential equations that model most of the engineering problems .	K3
			C111.2	Acquainted with the concepts of vector calculus-like Gradient, Divergence, Curl, Directional derivative, Irrotational vector and Solenoidal vector. The course gives an understanding of Vector integration, needed for problems in all engineering disciplines.	K2
			C111.3	Make to appreciate the purpose of using transforms to create new domain in which it is easier to handle the problem that is being investigated.	K6
			C111.4	Develop an understanding of the standard techniques of complex variable and mapping so as to enable the student to apply them with confidence, in application areas such as heat conduction, elasticity, fluid dynamics and flow of electric current .	K4



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			C111.5	Exposed to the concept of Cauchy's integral theorem, Taylor and Laurent expansions, Singular points, Application of residue theorem to evaluate complex integrals.	K3
3	I / II	PH6251 - ENGINEERING PHYSICS - II	C112.1	Describe the conducting materials and their properties.	K1
			C112.2	Analyze the semiconductors and able to differentiate various types of semiconductors.	K4
			C112.3	Apply the knowledge of magnetic and superconducting materials for modern day to day applications.	K3
			C112.4	Understand the properties and applications of dielectrics.	K6
			C112.5	Apply the knowledge about the modern engineering materials for various applications.	K3
4	I / II	CY6251 - ENGINEERING CHEMISTRY - II	C113.1	Describe water technology in the purification of water in domestic and industrial applications.	K1
			C113.2	Understand the principles of electrochemistry, the factors affecting corrosion and the prevention of corrosion	K6
			C113.3	Classify the different alternative sources of energy and the generation processes.	K3
			C113.4	Enumerate the different types of engineering materials and their applications	K3
			C113.5	Discuss the industrial techniques of petroleum processing and the determination of calorific values and combustion parameters.	K2
5	I / II	CS6201 - DIGITAL	C114.1	Analyze different methods used for simplification of Boolean expressions.	K4



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		PRINCIPLES AND SYSTEM DESIGN	C114.2	Use Boolean simplification techniques to design a combinational hardware circuit and write HDL code for circuits.	K3
			C114.3	Design and analysis of a given synchronous sequential circuit.	K4
			C114.4	Implement an asynchronous sequential circuit design.	K5
			C114.5	Design digital circuits using PLD	K4
6	I / II	CS6202 - PROGRAMMING AND DATA STRUCTURES I	C115.1	Summarize the concept of arrays and pointers in C language.	K2
			C115.2	Illustrate the process of handling files and heterogeneous data types using C programs	K4
			C115.3	Discuss about the various Linear Data Structure Operations and applications using ADT	K6
			C115.4	Analyze the various algorithms for sorting and searching	K3
			C115.5	Demonstrate the indexing techniques in data structures	K4
7	I / II	GE6262 and PHYSICS AND CHEMISTRY LABORATORY - II	C116.1	Ability to test materials by using their knowledge of applied physics principles in optics and properties of matter.	K5
			C116.2	Determine the hardness, alkalinity and metal ion content in the water samples by volumetric titration.	K5
			C116.3	Estimate the water quality parameters by potentiometer, conductometer and flame photometer.	K2
8	I / II	CS6211 - DIGITAL LABORATORY	C117.1	Summarize simplified combinational circuits using basic logic gates	K2
			C117.2	Understand combinational circuits using	K2



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			MSI devices	
			C117.3 Build sequential circuits like registers and counters	K3
			C117.4 Construct combinational and sequential circuits using HDL	K3
			C117.5 Design and implement simple digital system	K6
9	I / II	CS6212 - PROGRAMMING AND DATA STRUCTURES LABORATORY I	C118.1 Develop simple C Programs using pointers and Functions	K4
			C118.2 Develop C program for Linear data structure operations and its applications	K3
			C118.3 Apply the File Manipulation concepts	K3
			C118.4 Develop programs using various sorting algorithms	K4
			C118.5 Develop programs using different searching methods	K4

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	II / III	MA6351- TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS	C201.1 Solve Linear Partial differential equations of first and second order.	K3
			C201.2 Associate the concepts of Fourier series expansion for even and odd functions.	K2
			C201.3 Apply the concepts of Fourier series in solving boundary value problems.	K3
			C201.4 Discuss the Fourier transform, Fourier Sine and Cosine transform techniques.	K2



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			C201.5	Discuss the concepts of Z-Transform techniques for discrete time systems.	K2
2	II / III	CS6301 - PROGRAMMING AND DATA STRUCTURES II	C202.1	Understand the basic concepts of Object Oriented programming.	K2
			C202.2	Apply the concepts of polymorphism, inheritance and virtual functions for problem solutions.	K3
			C202.3	Outline the concepts of Exception handling and templates	K6
			C202.4	Summarize about tree preliminaries and other tree structures	K2
			C202.5	Apply the non-linear data structure graph in solving the real world problems.	K3
3	II / III	CS6302 - DATABASE MANAGEMENT SYSTEM	C203.1	Explore the basic concepts of Database Management system.	K6
			C203.2	Create database using query languages.	K6
			C203.3	Apply concurrency control & recovery mechanism for database problems.	K2
			C203.4	Explore and gain the knowledge on internal storage Structure and indexing techniques.	K6
			C203.5	Relate security concepts to databases.	K6
4	II / III	CS6303- COMPUTER ARCHITECTURE	C204.1	Describe the computer organization components, instructions and addressing modes	K1
			C204.2	Model arithmetic and logic unit including Floating Point Multiplication and Division Algorithms.	K6
			C204.3	Develop MIPS architecture by building pipelined data path and control path.	K4
			C204.4	Analyze pipelined control units with Instruction Level Parallelism	K4



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			C204.5	Classify the performance of different Memory and Input-Output systems.	K3
5	II / III	CS6304 - ANALOG AND DIGITAL COMMUNICATION	C205.1	Apply analog communication techniques.	K2
			C205.2	Apply digital communication techniques.	K2
			C205.3	Use data and pulse communication techniques.	K3
			C205.4	Analyze Source and Error control coding.	K3
			C205.5	Utilize multi-user radio communication.	K3
6	II / III	GE6351 - ENVIRONMENTAL SCIENCE AND ENGINEERING	C206.1	Summarize the importance of public awareness on environment and nature of biodiversity	K2
			C206.2	Describe the various causes, effect and control measures of environmental pollution.	K1
			C206.3	Discuss the human development that leads to environmental disasters, the value of natural resources and their conservation.	K2
			C206.4	Understand the value of public participation in environmental protection, Environmental Management and Legislation Acts and sustainable development.	K6
			C206.5	Review the problems related to population and their remedial measures.	K5
7	II / III	CS6311 - PROGRAMMING AND DATA STRUCTURES LABORATORY II	C207.1	Develop C++ programs using the concepts of abstraction, encapsulation, constructor, polymorphism, overloading and inheritance for solving problems.	K4
			C207.2	Design and implement C++ programs for manipulating stacks, queues, linked list, tress and graphs.	K4
			C207.3	Develop C++ programs for handling	K4



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				exceptions.	
			C207.4	Apply the different data structures for realizing solutions to practical problems.	K3
			C207.5	Develop recursive programs using trees and graphs.	K4
8	II / III	CS6312 - DATABASE MANAGEMENT SYSTEMS LABORATORY	C208.1	Infer database language commands to create simple database	K4
			C208.2	Analyze the database using queries to retrieve records	K6
			C208.3	Applying PL/SQL for processing database	K6
			C208.4	Analyze front end tools to design forms, reports and menus	K5
			C208.5	Develop solutions using database concepts for real time requirements.	K4

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	II / IV	MA6453 - PROBABILITY AND QUEUING THEORY	C209.1	Identify the functions of discrete and continuous random variables, moments and moment generating function	K1
			C209.2	Solve problems in marginal conditional distribution, using the concepts of correlation, regressions and transformation of two dimensional random variables.	K3
			C209.3	Determine the process is either SSS or WSS, find the TPM of Markov chain and its classifications.	K5
			C209.4	Analyze the concepts of queuing models	K4
			C209.5	Apply non Markovian queues to open and	K3



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				closed networks.	
2	II / IV	CS6551- COMPUTER NETWORKS	C210.1	Describe the Network fundamentals and terminology	K1
			C210.2	Recognize the different internetworking devices and their functions	K6
			C210.3	Demonstrate various types of routing techniques	K6
			C210.4	Outline the mechanisms involved in transport layer	K6
			C210.5	Analyze the features and operations of various application layer protocols such as HTTP, DNS, and SMTP.	K4
3	II / IV	CS6401 - OPERATING SYSTEM	C211.1	Summarize the basic concepts, System call, structure and functions of Operating Systems.	K2
			C211.2	Design the various Scheduling algorithms, Deadlock prevention, Deadlock avoidance algorithms and apply the principles of concurrency.	K4
			C211.3	Demonstrate the usage of various memory management schemes.	K3
			C211.4	Encapsulate the concepts of Mass Storage Structure, File System Structure and I/O Systems.	K6
			C211.5	Implement administrative tasks on Linux servers	K5
4	II / IV	CS6402 - DESIGN AND ANALYSIS OF ALGORITHM	C212.1	Describe the fundamentals of algorithmic problem solving and able to analyse recursive and non-recursive algorithms.	K1
			C212.2	Design algorithms for various computing problems using brute force and divide-and-conquer technique.	K4



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			C212.3	Analyze the time and space complexity of various algorithms using dynamic programming and greedy technique.	K4
			C212.4	Analyze the different algorithm design techniques for a given problem using iterative improvement.	K4
			C212.5	Modify existing algorithms to improve efficiency.	K3
5	II / IV	EC6504 - MICROPROCESSOR AND MICROCONTROLLER	C213.1	Design and implement programs on 8086 microprocessor.	K3
			C213.2	Extend system bus structure of 8086 microprocessor.	K2
			C213.3	Design I/O circuits.	K3
			C213.4	Design Memory Interfacing circuits.	K3
			C213.5	Design and implement 8051 microcontroller based systems	K3
6	II / IV	CS6403 - SOFTWARE ENGINEERING	C214.1	Describe the purpose and facts of different software development process models and project management	K1
			C214.2	Identify the functional and non-functional requirements for software development by preparing IEEE Software Requirements Document.	K1
			C214.3	Express software design activities using data flow diagrams and architectural diagrams.	K6
			C214.4	Develop a testing framework by understanding the purposes and stages of software testing and test-driven development.	K4
			C214.5	Create the project management activities involved in developing a framework including planning, scheduling, risk	K6



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				assessment/management.	
7	II / IV	CS6411 -NETWORKS LABORATORY	C215.1	Demonstrate the socket program using TCP & UDP	K1
			C215.2	Develop simple applications using TCP & UDP	K5
			C215.3	Develop the code for Data link layer protocol simulation	K4
			C215.4	Examine the performances of Routing protocol	K5
			C215.5	Experiment with congestion control algorithm using network simulator	K5
8	II / IV	CS6412 - MICROPROCESSOR AND MICROCONTROLLER LABORATORY	C216.1	Develop an ALP for fixed and Floating Point and Arithmetic	K3
			C216.2	Develop an ALP for Interface different I/Os with processor	K3
			C216.3	Develop an ALP to Generate waveforms using Microprocessors	K3
			C216.4	Develop an ALP using 8051 microcontroller	K3
			C216.5	Understand the difference between simulator and Emulator	K2
9	II / IV	CS6413 - OPERATING SYSTEMS LABORATORY	C217.1	Use the basics of shell programming.	K3
			C217.2	Use the System calls and implement in C programming.	K3
			C217.3	Apply the file system related system calls.	K3
			C217.4	Identify the performance of various page replacement algorithms	K6
			C217.5	Develop algorithm for deadlock avoidance, detection and file allocation strategies	K5



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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	III / V	MA6566 - DISCRETE MATHEMATICS	C301.1 Summarize the concept of elementary mathematical logical arguments.	K2
			C301.2 Apply basic counting techniques to solve combinatorial problems.	K3
			C301.3 Associate the applications of Graph theory models and data structures.	K2
			C301.4 Describe the concepts and properties of algebraic structures such as groups, rings and fields.	K1
			C301.5 Extend the concepts of Boolean algebra in the area of lattices.	K2
2	III / V	CS6501 - INTERNET PROGRAMMING	C302.1 Implement the concepts of Control Statements, I/O Applet and Threading	K5
			C302.2 Create a basic website using HTML and Cascading Style Sheets.	K6
			C302.3 Design and implement client side programs using JavaScript and server side programs using Servlets and JSP.	K4
			C302.4 Design and implement simple web page in PHP, and to present data in XML format.	K4
			C302.5 Design rich client presentation using AJAX and implement web services.	K4
3	III / V	CS6502 - OBJECT ORIENTED ANALYSIS AND DESIGN	C303.1 Use the OOAD concepts and various UML diagrams	K3
			C303.2 Interpret and use the GRASP design patterns and GoF Design patterns.	K2



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			C303.3	Analyze and design use case modeling and domain modeling.	K4
			C303.4	Apply appropriate design patterns.	K3
			C303.5	Design and implement projects using Object Oriented concepts and compare various testing techniques	K4
4	III / V	CS6503 -THEORY OF COMPUTATION	C304.1	Construct a minimized finite automaton to recognize a given regular language.	K6
			C304.2	Describe formal relationships among machines, languages and grammars.	K1
			C304.3	Construct the pushdown automata for all the context free language.	K6
			C304.4	Discuss the basic properties of Turing Machines and Techniques for turing machine construction.	K2
			C304.5	Create the decidability or Un-decidability of various problems.	K6
5	III / V	CS6504 - COMPUTER GRAPHICS	C305.1	Describe the graphics hardware devices, software used and different drawing algorithms.	K1
			C305.2	Apply two dimensional transformations and clipping techniques to graphical objects.	K3
			C305.3	Design three-dimensional graphical objects and apply three- dimensional transformations into graphical objects.	K4
			C305.4	Create the illumination and color models.	K6
			C305.5	Design an animation sequences.	K4
6	III / V	CS6511 - CASE TOOLS LABORATORY	C306.1	Design and implement projects using Object Oriented concepts.	K5
			C306.2	Use the UML analysis and design diagrams.	K3



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			C306.3	Apply appropriate design patterns	K3
			C306.4	Create code from design	K6
			C306.5	Compare and contrast various testing techniques.	K5
7	III / V	CS6512 - INTERNET PROGRAMMING LABORATORY	C307.1	Illustrate web pages using HTML/XML and style sheets	K4
			C307.2	Analyze user interfaces using Java frames and applets	K4
			C307.3	Compare and contrast dynamic web pages using server side scripting	K4
			C307.4	Develop a Client Server application and use the frameworks JSP Strut, Spring	K3
			C307.5	Create applications with AJAX and web services.	K6
8	III / V	CS6513 - COMPUTER GRAPHICS LABORATORY	C308.1	Make use of algorithms to draw 2D and 3D objects	K2
			C308.2	Show transformations and projections for 2D and 3D objects	K6
			C308.3	Manipulate a graphical object using clipping algorithms and viewing technique	K5
			C308.4	Use an image editing tool for image manipulation and enhancement	K6
			C308.5	Utilize the authoring tool to develop a 3D scene and to perform 2D animation	K6

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	III/VI	CS6601 - DISTRIBUTED	C309.1 Describe the trends and challenges in distributed system	K1



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		SYSTEMS	C309.2	Apply network virtualization, remote method invocation and objects.	K3
			C309.3	Demonstrate peer-to-peer services and distributed file system	K3
			C309.4	Analyze the issues related to scalability, synchronization, transaction processing, concurrency and reliability in distributed system.	K4
			C309.5	Design process and resource management systems.	K4
2	III/VI	IT6601- MOBILE COMPUTING	C310.1	Describe the basic concepts of mobile computing and MAC protocol.	K1
			C310.2	Choose the required functionality at each layer for given application.	K4
			C310.3	Classify different types of mobile telecommunication systems	K2
			C310.4	Design the Adhoc networks concepts and its routing protocols	K4
			C310.5	Make use of mobile operating systems in developing mobile applications	K4
3	III/VI	CS6660 - COMPILER DESIGN	C311.1	Summarize the basic concepts of compiler and its phases.	K6
			C311.2	Implement the functionalities of lexical analysis phase like conversion of regular expression to DFA and minimization of DFA.	K5
			C311.3	Design the parsing table using different parsing techniques and different compiler construction tools.	K4
			C311.4	Use the translation process and run time environment issues.	K6
			C311.5	Apply the various optimization techniques for effectively generating machine code.	K3



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4	III/VI	IT6502 -DIGITAL SIGNAL PROCESSING	C312.1	Understand the basics of signals and systems	K1
			C312.2	Perform frequency transforms for the signals.	K2
			C312.3	Design IIR filters.	K5
			C312.4	Design FIR filters.	K5
			C312.5	Analyze the finite word length effects in digital filters	K4
5	III/VI	CS6659 - ARTIFICIAL INTELLIGENCE	C313.1	Identify appropriate AI methods to solve a problem using search technique.	K1
			C313.2	Demonstrate the knowledge in predicate and propositional logic and their roles in logic programming.	K3
			C313.3	Formalise a given problem in the language / framework of different AI methods.	K3
			C313.4	Apply the machine learning techniques in solving the real- world problems.	K3
			C313.5	Elucidate the idea of Knowledge Acquisition and Expert Systems	K5
5	III/VI	GE6757 -TOTAL QUALITY MANAGEMENT	C314.1	Outline the dimensions and barrier regarding quality.	K1
			C314.2	Illustrate the TQM Principles	K4
			C314.3	Demonstrate the tools utilization for quality improvement.	K3
			C314.4	Build the various types of techniques that are used to measure quality	K2
			C314.5	Apply various quality systems and auditing on implementation of TQM	K3
6	III/VI	CS6611 - MOBILE APPLICATION DEVELOPMENT	C315.1	Build a native application using GUI components and Mobile application development framework	K2



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		LABORATORY	C315.2	Choose the required architecture based upon the mobile application to be developed.	K4
			C315.3	Design mobile applications using various layout and widgets.	K4
			C315.4	Implement various mobile applications using emulators.	K5
			C315.5	Deploy applications to hand-held devices	K3
7	III/VI	CS6612 - COMPILER LABORATORY	C316.1	Apply different compiler writing tools to implement the different Phases	K3
			C316.2	Implement the different Phases of compiler using tools.	K5
			C316.3	Analyze the control flow and data flow of a typical program.	K4
			C316.4	Design the back end of a compiler for 8086 assembler	K4
			C316.5	Generate an assembly language program equivalent to a source language program.	K6
8	III/VI	GE6674 - COMMUNICATION AND SOFT SKILLS - LABORATORY BASED	C317.1	Apply appropriate communications skills across setting purposes and audiences	K2
			C317.2	Demonstrate Knowledge of communication theory and applications.	K6
			C317.3	Organize different genres of texts adopting various reading strategies.	K6
			C317.4	Distinguish and comprehend different spoken discourses/excerpts in different accents.	K2
			C317.5	Listen to different accents, speeches and presentations.	K2



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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	IV / VII	CS6701 - CRYPTOGRAPHY AND NETWORK SECURITY	C401.1 Interpret the basic concepts, OSI security architecture, finite fields and number theory.	K5
			C401.2 Compare the various Cryptographic techniques.	K5
			C401.3 Determine the usage of hash functions and digital signature	K5
			C401.4 Demonstrate different types of security systems and applications.	K4
			C401.5 Discuss different levels of security and services.	K6
2	IV / VII	CS6702 -GRAPH THEORY AND APPLICATIONS	C402.1 Define basic concepts & terminologies of Graph, Isomorphism, Trees and its properties	K1
			C402.2 Analyse solution for Konigsberg bridge problem using Eulers graph.	K4
			C402.3 Analyse a solution for a maximum flow in network using Network Flow Graph theory.	K4
			C402.4 Understand the principles of Inclusion and Exclusion, Binomial theorem and traffic problem.	K2
			C402.5 Apply permutation and Combination and solve seating arrangement problem.	K3
3	IV / VII	CS6703 - GRID AND CLOUD COMPUTING	C403.1 Describe the architecture of Grid and Cloud Computing.	K1
			C403.2 Apply the knowledge to solve the large-	K3



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				scale problem in grid computing.	
			C403.3	Explore the concepts of Virtualization.	K6
			C403.4	Develop the web services using the grid and cloud technologies.	K4
			C403.5	Apply security mechanism in grid and cloud computing.	K3
4	IV / VII	CS6704 - RESOURCE MANAGEMENT TECHNIQUES	C404.1	Solve the linear programming problems using Graphical method and Simplex method.	K3
			C404.2	Solve specialized Linear programming problems like transportation and assignment problems.	K3
			C404.3	Using Branch & Bound technique solve real world problems.	K3
			C404.4	Compute critical path analysis to solve real life project schedule time & timely delivery.	K3
			C404.5	Understand the role & applications of PERT/COST/CPM for project scheduling.	K6
5	IV / VII	IT6801 - SERVICE ORIENTED ARCHITECTURE	C405.1	Develop a simple XML document coding and XML Schema.	K4
			C405.2	Create an application based on XML and database.	K6
			C405.3	Compare the characteristics and principles of Service oriented architecture with client server and distributed architecture.	K5
			C405.4	Describe the web services using WSDL, SOAP and UDDI.	K1
			C405.5	Build a Service oriented architecture based applications for intra-enterprise and	K6



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				inter- enterprise applications using J2EE.	
6	IV / VII	CS6007 - INFORMATION RETRIEVAL	C406.1	Apply information retrieval models	K3
			C406.2	Design Web Search Engine.	K4
			C406.3	Use Link Analysis	K3
			C406.4	Use Hadoop and Map Reduce	K3
			C406.5	Apply document text mining techniques.	K3
7	IV / VII	CS6711 - SECURITY LABORATORY	C407.1	Apply the cryptographic algorithms for data communication	K5
			C407.2	Compare the performance of various security algorithms	K4
			C407.3	Apply the Digital signature for secure data transmission	K3
			C407.4	Utilize the different open source tools for network security and analysis	K4
			C407.5	Demonstrate intrusion detection system using network security tool.	K4
8	IV / VII	CS6712 - GRID AND CLOUD COMPUTING LABORATORY	C408.1	Develop application using Globus toolkit.	K4
			C408.2	Develop web services/application using Grid framework	K4
			C408.3	Run Virtual machine and install software on it.	K5
			C408.4	Setup a private cloud using OpenStack / Open Nebula / Eucalyptus	K5
			C408.5	Implement applications using MapReduce approach in Hadoop environment.	K5



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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	IV / VIII	CS6801- MULTICORE ARCHITECTURE &PROGRAMMING	C409.1 Describe the parallel architecture and parallel programming model	K1
			C409.2 Analyze the issues related to various challenges in parallel programming	K4
			C409.3 Develop parallel programming applications using openMP	K4
			C409.4 Design and develop distributed programming application using openMPI	K3
			C409.5 Compare and analyze the programming model for serial processor and parallel processor implementation.	K5
2	IV / VIII	CS6008 - HUMAN COMPUTER INTERACTION	C410.1 Understand the basic foundations of Human Computer Interaction.	K2
			C410.2 Design effective HCI for individuals and persons with disabilities.	K3
			C410.3 Simplify the issues in the HCI Models and assess the importance of user feedback	K2
			C410.4 State the Mobile HCI implications for designing multimedia/ ecommerce/ e-learning Web sites.	K4
			C410.5 Develop the meaningful user interface.	K4
3	IV / VIII	GE6075 - PROFESSIONAL ETHICS IN ENGINEERING	C411.1 Apply ethics, morals and human values in society.	K3
			C411.2 Understand about engineering ethics.	K2
			C411.3 Describe the responsibilities of engineers as experimenters.	K1



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			C411.4	Recognize the safety, risks, risk benefit analysis and rights of an engineer.	K1
			C411.5	Discuss the importance of the global issues, moral leadership and code of conduct.	K2
4	IV / VIII	CS6811 - PROJECT WORK	C412.1	Apply the fundamental knowledge and skills, Which are acquired within the technical area, to a given problem	K3
			C412.2	Identify and summarize an appropriate list of literature review, analyze previous researchers' Work and relate them to the project.	K1
			C412.3	Design engineering solutions to complex problems in a systematic approach.	K4
			C412.4	Document and present one's own work, for a given target group, with strict requirements on structure, format, and language usage.	K6
			C412.5	Present the project outlining the approach and expected results using good oral and written presentation skills.	K6



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COURSE OUTCOME REGULATION 2017

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	I / I	HS8151 - COMMUNICATIVE ENGLISH	C101.1	Communicate clearly both in the written form and orally using appropriate vocabulary and comprehend written texts to make inferences.	K2
			C101.2	Speak persuasively in different social contexts and write biographical details and technical documents cohesively, coherently and flawlessly using appropriate words.	K2
			C101.3	Speak, read and write effectively for a variety of professional and social settings.	K2
			C101.4	Read descriptive, narrative, expository and interpretive texts and write using creative, critical, analytical and evaluative methods.	K6
			C101.5	Listen, comprehend and respond to different spoken and written discourses/excerpts in different accents and write different genres of texts adopting various writing strategies.	K6
2	I / I	MA8151 - ENGINEERING MATHEMATICS - I	C102.1	Use both the limit definition and rules of differentiation to differentiate functions.	K3
			C102.2	Apply differentiation to solve maxima and minima problems	K3



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			C102.3	Evaluate integrals both by using Reimann sums and by using the fundamental theorem of convergent improper integrals. Evaluate integrals using techniques of integration, such as substitution, partial Fractions, integration by parts and improper integrals.	K5
			C102.4	Apply integration to compute multiple integrals, area, volume, integrals in polar Coordinates, in addition to change of order and change of variables.	K3
			C102.5	Apply various techniques in solving differential equations.	K3
3	I / I	PH8151 - ENGINEERING PHYSICS	C103.1	Discuss the Young's modulus and Rigidity modulus of elasticity of materials and its determination through experimental methods .	K2
			C103.2	Describe the characteristics of laser light and their application in semiconductor laser .	K2
			C103.3	Discuss the principle behind the propagation of light through an optical fibre and its application in sensors.	K2
			C103.4	Summarize the different modes of heat transfer.	K2
			C103.5	Describe the unit cell characteristics and the growth of crystals	K2
4	I / I	CY8151 - ENGINEERING CHEMISTRY	C104.1	Summarize the water related problems in boilers and their treatment techniques.	K2
			C104.2	Discuss the applications of adsorption in the field of water and air pollution abatement.	K1



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			C104.3	Discuss the types of catalysis and the mechanism of enzyme catalysis.	K2
			C104.4	Associate phase rule in the alloying and the behavior of one component and two component systems using phase diagram.	K2
			C104.5	Summarize the principles and generation of energy in batteries, nuclear reactors, solar cells, wind mills and fuel cells.	K2
5	I / I	GE8151- PROBLEM SOLVING AND PYTHON PROGRAMMING	C105.1	Discuss the logical solutions through Flowcharts, Algorithms and Pseudo code	K2
			C105.2	Understand the syntax for python programming constructs.	K2
			C105.3	Compute the flow of the program to obtain the programmatic solution.	K2
			C105.4	Examine the programs with sub problems using 'Python' language	K3
			C105.5	Compute the compound data using Python lists, tuples, and dictionaries	K2
6	I / I	GE8152- ENGINEERING GRAPHICS	C106.1	Sketch the conic sections, special curves, and draw orthographic views from pictorial views and models.	K4
			C106.2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.	K3
			C106.3	Sketch the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures.	K4
			C106.4	Practice the sectional views of solids like cube, prisms, pyramids, cylinders & cones and extend its lateral surfaces	K3



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			C106.5	Sketch the perspective projection of simple solids, truncated prisms, pyramids, cone and cylinders and sketch the isometric projection of simple machine parts.	K4
7	I / I	GE8161- PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY	C107.1	Write, test, and debug simple Python programs	K1
			C107.2	Apply the concept of conditionals and loops in Python programs.	K3
			C107.3	Develop the Python programs step-wise by defining functions and calling them.	K4
			C107.4	Use Python lists, tuples, dictionaries for representing compound data.	K3
			C107.5	Read and write data from/to files in Python.	K2
8	I / I	BS8161 - PHYSICS AND CHEMISTRY LABORATORY	C108.1	Apply physics principles of optics and thermal physics to evaluate engineering properties of materials.	K3
			C108.2	Ability to test materials by using their knowledge of applied physics principles in optics and properties of matter.	K5
			C108.3	Perform the quantitative chemical analysis of chloride and dissolved oxygen.	K5
			C108.4	Determine the amount of acids by using the instruments of conductivity meter and pH meter.	K5
			C108.5	Determine the hardness, alkalinity and metal ion content in the water samples .	K5



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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	I / II	HS8251 - TECHNICAL ENGLISH	C109.1	Read technical texts and write area specific texts effortlessly.	K2
			C109.2	Listen and comprehend lectures and talks in their areas of specialization and write effectively for a variety of professional and social settings	K2
			C109.3	Speak and write appropriately and effectively in varied formal and informal contexts.	K6
			C109.4	Write effectively and persuasively and produce different types of writing such as letters, minutes, reports and winning job applications.	K6
			C109.5	Communicate clearly using technical vocabulary in their professional correspondences	K2
2	I / II	MA8251 - ENGINEERING MATHEMATICS - II	C110.1	Calculate the Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices	K3
			C110.2	Evaluate the line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification	K5
			C110.3	Determine Analytic functions, Conformal mapping and Bilinear transformation	K3
			C110.4	Evaluate the Cauchy's integrals, Taylor's and Laurent's and residue	K5



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				theorem for evaluation for real integrals using circular and semicircular, contour	
			C110.5	Evaluate Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.	K5
			C110.6	Discuss Laplace Transform methods to solve initial value problems for constant coefficient linear ODEs.	K2
3	I / II	PH8252 - PHYSICS FOR INFORMATION SCIENCE	C111.1	Discuss about Wiedemann Franz law and the conduction in solids.	K2
			C111.2	Associate the concept of quantum electron theories with energy band structures.	K2
			C111.3	Discuss the carrier concentration in semiconducting materials.	K2
			C111.4	Understand the origin of magnetism and the properties of magnetic materials.	K2
			C111.5	Discuss the working of Opto-electronic devices.	K2
			C111.6	Summarize the basics of quantum structures and their applications in nano devices.	K2
4	I / II	BE8255 - BASIC ELECTRICAL ELECTRONICS AND MEASUREMENT ENGINEERING	C112.1	Illustrate the behavior of electric circuits using fundamental laws and techniques	K2
			C112.2	Understand the operation of DC, AC and Special machines	K2
			C112.3	Summarize different energy sources,	K2



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				protective devices and its applications	
			C112.4	Outline the characteristics and applications of semiconductor diodes.	K2
			C112.5	Summarize the characteristics and errors of the instruments	K2
			C112.6	Understand the working of different types of Analog Instruments and transducers	K2
5	I / II	GE8291- ENVIRONMENTAL SCIENCE AND ENGINEERING	C113.1	Summarize the values, threats, conservation of biodiversity and ecosystems.	K2
			C113.2	Discuss the sources, effects, control measures of different types of pollution, and solid waste management.	K1
			C113.3	Associate the effects of exploitation of Natural resources on environment	K3
			C113.4	Summarize the water conservation methods and various environmental acts for environmental sustainability	K2
			C113.5	Discuss scientific, technological, economic and social solutions to environmental problems	K1
6	I / II	CS8251 – PROGRAMMING IN C	C114.1	Understand the syntax for C programming	K2
			C114.2	Associate the programs in 'C' for real world situation	K2
			C114.3	Apply the concepts of Arrays, Strings in 'C' language for user defined problems.	K3
			C114.4	Apply the concept of functions and pointers.	K3



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			C114.5	Associate the programs with structure using 'C' language.	K2
			C114.6	Discuss to read and write data from/to files in 'C' Programs.	K2
7	I / II	GE8261 - ENGINEERING PRACTICES LABORATORY	C115.1	Fabricate carpentry components and pipe connections including plumbing works.	K2
			C115.2	Use welding equipments to join the structures.	K2
			C115.3	Carry out the basic machining operations	K2
			C115.4	Make the models using sheet metal works	K4
			C115.5	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundary and fittings	K4
			C115.6	Carry out basic home electrical works and appliances	K2
8	I / II	CS8261 – C PROGRAMMING LABORATORY	C116.1	Develop C programs for simple applications making use of basic constructs	K4
			C116.2	Apply the concept of conditionals and loops in C programs.	K3
			C116.3	Develop the C programs with arrays and strings.	K4
			C116.4	Apply the concept of functions, recursion in C programs	K3
			C116.5	Analyze the concept of pointers, and structures in C	K4
			C116.6	Examine the use of sequential and random access file processing	K3



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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	II / III	MA8351 – DISCRETE MATHEMATICS	C201.1 Summarize the concept of elementary mathematical logical arguments.	K2
			C201.2 Apply basic counting techniques to solve combinatorial problems.	K2
			C201.3 Associate the applications of Graph theory models and data structures.	K3
			C201.4 Describe the concepts and properties of algebraic structures such as groups, rings and fields.	K3
			C201.5 Extend the concepts of Boolean algebra in the area of lattices.	K3
			C201.6 Apply the knowledge of argumental discrete mathematical problems.	K2
2	II / III	CS8351 – DIGITAL PRINCIPLES AND SYSTEM DESIGN	C202.1 Apply the Boolean functions using K-Map	K3
			C202.2 Interpret Combinational circuits for a given functions using logic gates.	K3
			C202.3 Recognise Synchronous Sequential circuits for the given condition	K3
			C202.4 Recognise Asynchronous Sequential circuits for the given condition.	K3
			C202.5 Apply Programmable Logic towards memory management	K3
			C202.6 Solve codes for the design of digital circuits.	K2



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3	II / III	CS8391 – DATA STRUCTURES	C203.1	Describe linear data structures using array and linked list.	K1
			C203.2	Apply data structures like stacks, queues in linear data structure.	K4
			C203.3	Discuss non-linear data structures tree and its application.	K6
			C203.4	Apply various algorithms in graph.	K2
			C203.5	Solve searching, sorting and hashing techniques in data structures.	K3
			C203.6	Interpret sorting algorithms for a given problem.	K2
4	II / III	CS8392 – OBJECT ORIENTED PROGRAMMING	C204.1	Develop Java programs using OOP principles	K3
			C204.2	Develop Java programs with the concepts in inheritance and interfaces	K3
			C204.3	Build Java applications using exceptions and I/O streams	K2
			C204.4	Relate Java applications with threads and generics classes	K6
			C204.5	Develop interactive Java programs using swings	K3
			C204.6	Demonstrate simple Graphical User Interfaces	K6
5	II / III	EC8395 COMMUNICATION ENGINEERING	C205.1	Describe the concepts of analog modulation systems.	K2
			C205.2	Illustrate pulse communication techniques	K2
			C205.3	Summarize the concepts of digital modulation systems.	K2
			C205.4	Implement the source coding techniques.	K2
			C205.5	Understand the basic principles in the	K2



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				generation of spread spectrum signals.	
			C205.6	Understand the methods of multiple access in communication systems.	K2
6	II / III	CS8381 – DATA STRUCTURES LABORATORY	C206.1	Enumerate functions to implement linear and non-linear data structure operations	K2
			C206.2	Design and develop appropriate linear / non-linear data structure operations for solving a given problem	K3
			C206.3	Apply the linear / non-linear data structure operations for a given problem based on the user needs	K3
			C206.4	Design new solutions for programming problems or improve existing code using learned algorithms and data structures	K3
			C206.5	Apply appropriate hash functions that result in a collision free scenario for data storage and retrieval	K3
7	II / III	CS8383 - OBJECT ORIENTED PROGRAMMING LABORATORY	C207.1	Develop and implement Java programs for simple applications that make use of classes	K3
			C207.2	Develop and implement Java programs with arraylist	K3
			C207.3	Design applications using file processing	K3
			C207.4	Build software development skills using java programming for real-world applications	K3
			C207.5	Apply the concepts of classes, packages, interfaces, exception handling	K3
			C207.6	Develop applications using generic	K3



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				programming and event handling	
8	I / II	CS8382 – DIGITAL SYSTEMS LABORATORY	C208.1	Interpret Combinational circuits Using Logic gates.	K3
			C208.2	Illustrate Combinational circuits Using MSI Devices.	K3
			C208.3	Practice various counters using Flip-flops.	K3
			C208.4	Practice shift registers using Flip-flops	K3
			C208.5	Solve codes for the design of digital circuits.	K3
			C208.6	Demonstrate simple digital system	K3
9	I / II	HS8381 - INTERPERSONAL SKILLS/LISTENING & SPEAKING	C209.1	Speak effectively on various academic topics and respond to questions.	K2
			C209.2	Converse effectively with the use of conversation starters and discourse markers.	K6
			C209.3	Listen and respond to various academic dialogues and discussions	K2
			C209.4	Participate confidently and appropriately in informal and formal conversations and group discussions.	K6
			C209.5	Use a range of presentation tools like PPT, Videos, and Charts etc. to make an engaging presentation.	K6



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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	II / IV	MA8402 – PROBABILITY AND QUEUEING THEORY	C210.1 Identify the functions of discrete and continuous random variables, moments and moment generating function	K2
			C210.2 Solve problems in marginal conditional distribution, using the concepts of correlation, regressions and transformation of two dimensional random variables.	K2
			C210.3 Determine the process is either SSS or WSS, find the TPM of Markov chain and its classifications.	K2
			C210.4 Analyze the concepts of queuing models	K2
			C210.5 Apply non Markovian queues to open and closed networks.	K2
2	II / IV	CS8491 – COMPUTER ARCHITECTURE	C211.1 Describe the basic structures of a computer system.	K2
			C211.2 Understand the various arithmetic operations for computers.	K2
			C211.3 Analyze pipelined control units and the different types of hazards in the instructions.	K3
			C211.4 Interpret the concepts of parallel processing architecture	K2
			C211.5 Summarize the fundamentals of memory system.	K2
			C211.6 Describe the concepts of I/O system	K2



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3	II / IV	CS8492 – DATABASE MANAGEMENT SYSTEMS	C212.1	Discuss the fundamental concepts of relational database and SQL	K2
			C212.2	Use ER model for Relational model mapping to perform database design effectively	K3
			C212.3	Summarize the properties of transactions and concurrency control mechanisms	K2
			C212.4	Outline the various storage and optimization techniques	K2
			C212.5	Compare and contrast various indexing strategies in different database systems	K2
			C212.6	Understand the different advanced databases	K2
4	II / IV	CS8451 – DESIGN AND ANALYSIS OF ALGORITHMS	C213.1	Discuss the fundamental concepts problem solving algorithm, its types and the parameters to analyze those algorithms	K2
			C213.2	Understand the Brute Force method and Divide and Conquer method to solve computing problems.	K2
			C213.3	Understand the dynamic programming and greedy techniques to solve computing problems	K2
			C213.4	Describe how scientific problems can be solved using iterative method and how to cope with limitations of algorithm power	K2
			C213.5	Critically analyze the different algorithm design techniques for a given problem based on its time and space complexity.	K3
			C213.6	Modify existing algorithms to improve efficiency	K3



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5	II / IV	CS8493 – OPERATING SYSTEMS	C214.1	Understand the overall view of the computer system and operating system	K2
			C214.2	Identify various scheduling algorithm and deadlock prevention and avoidance algorithm	K2
			C214.3	Compare and contrast various memorymanagement schemes and file system functionalities	K2
			C214.4	Discuss the performance of the various page replacement algorithms and interpret the file system implementation, sharing and protection mechanisms.	K2
			C214.5	Demonstrate administrative tasks on Linux servers and to be familiar with the basics of Mobile OS.	K3
			C214.6	Make use of various algorithms to solve computing problems	K3
6	II / IV	CS8494 - SOFTWARE ENGINEERING	C215.1	Identify the key activities in managing a software project and recognize different process model	K2
			C215.2	Understand the concepts of requirements engineering and Analysis Modeling	K2
			C215.3	Outline the systematic procedures for software design and deployment	K2
			C215.4	Compare various testing and maintenance methods	K2
			C215.5	Interpret the project schedule, estimate project cost and effort required.	K2
			C215.6	Develop a software using the software engineering principles	K3



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7	II / IV	CS8481 - DATABASE MANAGEMENT SYSTEMS LABORATORY	C216.1	Use typical data definitions and manipulation commands.	K3
			C216.2	Design applications to test Nested and Join Queries	K3
			C216.3	Implement simple applications that use Views	K3
			C216.4	Make use of ER modeling and normalization to design and implement database	K3
			C216.5	Implement applications that require a Front-end Too	K3
			C216.6	Critically analyze the use of Tables, Views, Functions and Procedures	K4
8	II / IV	CS8461 – OPERATING SYSTEMS LABORATORY	C217.1	Illustrate the various CPU scheduling algorithms.	K3
			C217.2	Implement deadlock avoidance and detection algorithms.	K3
			C217.3	Implement semaphore concepts.	K3
			C217.4	Create processes and implement IPC.	K3
			C217.5	Analyze the performance of the various page replacement algorithms.	K3
			C217.6	Implement file organization and file allocation strategies.	K3
9	II / IV	HS8461 ADVANCED READING AND WRITING LAB	C218.1	Strengthen the reading skills	K2
			C218.2	Enhance the technical writing skills	K3
			C218.3	Develop proposal writing skills	K6
			C218.4	Write winning job applications.	K2



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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	III / V	MA8551 – Algebra And Number Theory	C301.1 Summarize the notations and properties of algebraic structures such as groups, rings and fields	K2
			C301.2 Understand the concepts of finite fields and polynomials to solve problems in advanced algebra.	K2
			C301.3 Associate the applications of divisibility theory and canonical decompositions.	K2
			C301.4 Describe the concept of Diophantine equations and congruences and exhibit the efficient use of advanced algebraic techniques in number theory	K2
			C301.5 Extend the concepts of multiplicative functions and classical theorems.	K2
			C301.6 Associate the knowledge of integrated approach to Number theory and abstract algebra.	K2
2	III / V	CS8591 – COMPUTER NETWORKS	C302.1 Identify various layers of network and discuss the functions of physical layer	K2
			C302.2 Discuss how data flows from one node to another node with regard to data link layer	K2
			C302.3 Understand the different services of network layer	K2



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			C302.4	Compare the different transport layer protocols and their applicability based on user requirements	K3
			C302.5	Describe the working of various application layer protocols	K2
			C302.6	Evaluate the performance of network and analyze routing algorithms	K3
3	III / V	EC8691 – MICROPROCESSORS AND MICROCONTROLLERS	C303.1	Understand the architecture and instruction set of Microprocessor	K2
			C303.2	Discuss about System Bus Structure for Multiprocessor Configuration	K2
			C303.3	Infer the functions of various interfacing integrated chips	K2
			C303.4	Understand the architectures and instruction set of Microcontroller	K2
			C303.5	Illustrate the functions of various interfacing devices with Microcontroller	K2
			C303.6	Build an assembly language program for interfacing	K3
4	III / V	CS8501 – THEORY OF COMPUTATION	C304.1	Define the mathematical principles and design automata for any given pattern.	K3
			C304.2	Specify the regular expression of string pattern.	K2
			C304.3	Understand the concepts of context free grammar of any language.	K2
			C304.4	Design and propose computational solutions for turing machine.	K4



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			C304.5	Identify decidable and Undecidable problems.	K1
			C304.6	Correlate the different types of automata to realworld applications	K5
5	II / IV	CS8592 OBJECT ORIENTED ANALYSIS AND DESIGN	C305.1	Express the software design concepts with UML diagram.	K2
			C305.2	Construct the domain model and design model to various use case scenarios.	K3
			C305.3	Identify various scenarios based on software requirements	K3
			C305.4	Design software applications using object oriented concepts.	K2
			C305.5	Transform UML based software design into pattern based design using design patterns.	K3
			C305.6	Understand the various testing methodologies for object oriented software	K2
6	III / V	OMD551 – BASIC OF BIOMEDICAL INSTRUMENTATION	C306.1	Learn the different bio potential and its propagation	K2
			C306.2	Get Familiarize the different electrode placement for various physiological recording	K2
			C306.3	Design bio amplifier for various physiological recording	K2
			C306.4	Understand various technique non electrical physiological measurements	K2
			C306.5	Understand the different biochemical measurements	K2



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7	III / V	EC8681 - MICROPROCESSORS AND MICROCONTROLLERS LABORATORY	C307.1	Interpret the architecture and operation of microprocessor (8086).	K2
			C307.2	Implement simple assembly language programs using instruction sets of microprocessor and microcontroller.	K3
			C307.3	Compare instruction sets of 8086 microprocessor and 8051 microcontroller.	K3
			C307.4	Implement assembly language programs using instruction sets of microcontroller.	K3
			C307.5	Develop applications using instructions of microprocessors and microcontroller.	K3
			C307.6	Interpret the architecture and operation of microcontroller(8051)	K2
8	III / V	CS8582 OBJECT ORIENTED ANALYSIS AND DESIGN LABORATORY	C308.1	Make use of object oriented and design concepts to solve a given problem specifications	K3
			C308.2	Identify and map basic software requirements in UML mapping.	K2
			C308.3	Apply design patterns to improve the software quality	K3
			C308.4	Test the compliance of the software with SRS	K3
			C308.5	Map the object oriented design to the developed code	K3
			C308.6	Apply object oriented design to develop a software	K3



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9	III / V	CS8581 - NETWORKS LABORATORY	C309.1	Implement various protocols using TCP and UDP	K3
			C309.2	Compare the performance of different transport layer protocols	K3
			C309.3	Use simulation tools to analyze the performance of various network protocols	K3
			C309.4	Analyze various routing algorithms	K3
			C309.5	Implement error correction codes	K3
			C309.6	Understand Network simulator (NS) and Simulate Congestion Control Algorithms using NS	K3

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	III / VI	CS8651 – INTERNET PROGRAMMING	C310.1	Demonstrate simple website using HTML and CSS.	K2
			C310.2	Build dynamic web pages with validation using Java Script objects and apply different event handling mechanisms.	K3
			C310.3	Illustrate server side programs using Servlet and JSP.	K2
			C310.4	Demonstrate simple web pages in PHP and to represent data in XML format.	K2
			C310.5	Illustrate AJAX and web services to develop interactive web applications.	K2
			C310.6	Develop interactive web applications for	K3



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				real world problems.	
2	III / VI	CS8691 – ARTIFICIAL INTELLIGENCE	C311.1	List the characteristics and types of intelligent agents	K2
			C311.2	Interpret search algorithms for any AI problem	K2
			C311.3	Illustrate a problem using first order and predicate logic	K2
			C311.4	Understand the appropriate agent strategy to solve a given problem	K2
			C311.5	Develop software agents to solve a problem	K2
			C311.6	Demonstrate applications for NLP that use Artificial Intelligence	K2
3	III / VI	CS8601 – MOBILE COMPUTING	C312.1	Understand the basic concepts of mobile computing	K2
			C312.2	Understand the basics of mobile telecommunication systems	K2
			C312.3	Illustrate the generations of telecommunication systems in wireless networks	K2
			C312.4	Demonstrate the functionality of MAC, network layer and Identify a routing protocol for a given Ad hoc network	K2
			C312.5	Understand the functionality of Transport and Application layers	K2
			C312.6	Develop a mobile application using android/blackberry/ios/Windows SDK	K3
4	III / VI	CS8602 – COMPILER DESIGN	C313.1	Illustrate a lexical analyzer for a sample language.	K2
			C313.2	Understand different parsing algorithms to develop the parsers for a given	K2



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			grammar.	
			C313.3 Understand syntax-directed translation and run-time environment.	K2
			C313.4 Understand intermediate code generation and run-time environment	K2
			C313.5 Apply code optimization techniques for programming construct	K3
			C313.6 Develop a scanner and a parser using LEX and YACC tools	K3
5	III / VI	CS8603 – DISTRIBUTED SYSTEMS	C314.1 Elucidate the foundations and issues of distributed systems	K2
			C314.2 Understand the various synchronization issues and global state for distributed systems.	K2
			C314.3 Comprehend the Mutual Exclusion and Deadlock detection algorithms in distributed systems	K2
			C314.4 Show the use of agreement protocols and fault tolerance mechanisms in distributed systems.	K2
			C314.5 Relate the features of peer-to-peer and distributed shared memory systems	K2
			C314.6 Interpret the real-time distributed system applications	K2
6	III / VI	IT8076 - SOFTWARE TESTING	C315.1 Demonstrate knowledge of the fundamentals of software testing and competence in using software designed to assist in the software testing life cycle for given portions of the testing cycle.	K2
			C315.2 Evaluate the limitations of a given testing process.	K3
			C315.3 Analyze the design of test cases for different testing techniques.	K3



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			C315.4	Create test strategies and plans, design test cases, prioritize and execute them.	K6
			C315.5	Apply a wide variety of software testing activities in an effective and efficient manner.	K3
			C315.6	Understand the significance of software testing in web and Object orient techniques.	K2
7	III / VI	CS8661 – INTERNET PROGRAMMING LABORATORY	C316.1	Construct web pages using HTML/XML and style sheets.	K3
			C316.2	Build dynamic web pages with validation using javascript objects and apply different event handling mechanisms.	K3
			C316.3	Develop dynamic web pages using server side scripting.	K3
			C316.4	Use PHP programming to develop web applications.	K3
			C316.5	Construct web applications using AJAX and web services.	K3
			C316.6	Develop interactive web applications for real world problems	K3
8	III / VI	CS8662 – MOBILE APPLICATION DEVELOPMENT LABORATORY	C317.1	Illustrate mobile applications using GUI and Layouts.	K3
			C317.2	Demonstrate mobile applications using Event Listener.	K3
			C317.3	Experiment with mobile applications using Databases.	K3
			C317.4	Make use of mobile applications using RSS Feed, Internal/External Storage, SMS, Multithreading and GPS.	K3
			C317.5	Build own mobile app for simple needs.	K3



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			C317.6	Model various mobile applications using different application development frameworks.	K3
9	III / VI	CS8611 – MINI PROJECT	C318.1	Choose problems with technical importance and societal contribution	K3
			C318.2	Identify and survey the relevant literature for getting exposed to related solutions.	K3
			C318.3	Build project plans with feasible requirements	K3
			C318.4	Analyse, design and develop adaptable and reusable solutions	K4
			C318.5	Implement and test solutions to trace against the user requirements	K4
			C318.6	Deploy the solutions for better manageability and provide scope for improvability	K4
10	III / VI	HS8581 PROFESSIONAL COMMUNICATION	C319.1	Summarize various skills such as Soft Skills, Hard skills, employability and career Skills and demonstrate values such as Time Management and general awareness of current affairs.	K2
			C319.2	Demonstrate oneself before the audience by making effective presentations on introducing oneself, answering questions and visual presenting.	K3
			C319.3	Demonstrate oneself by participating in group discussions, brainstorming sessions and question sessions. Develop activities to improve GD Skills	K6
			C319.4	Develop interview skills so as to be successful in them.	K6
			C319.5	Develop adequate Soft Skills required for	K6



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				the workplace and long-term career.	
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PROGRAMME:COMPUTER SCIENCE AND ENGINEERING	DEGREE: UG	A.Y: 2020-21	SEMESTER: 07
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	IV / VII	MG8591 – PRINCIPLES OF MANAGEMENT	C401.1 Discuss the evolution of management thoughts and the challenges of managerial activities in a global business environment.	K2
			C401.2 Understand the types of Planning and Decision making methodologies in Organizations	K2
			C401.3 Summarize various types of Organization structure and associated Human Resources activities for man-power utilization.	K2
			C401.4 Understand about motivation theories, behavior, leadership theories and communication for effective directing.	K2
			C401.5 Understand various Controlling techniques to maintain standards in Organizations.	K2
			C401.6 Associate managerial functions and knowledge on international aspect for Organizational growth	K2
2	IV / VII	CS8792 – CRYPTOGRAPHY AND NETWORK SECURITY	C402.1 Describe the fundamentals of networks security, security architecture, threats and vulnerabilities	K2
			C402.2 Discuss the mathematical support for both symmetric and asymmetric key cryptography	K2
			C402.3 Make use of symmetric key cryptographic algorithms to perform cryptographic	K3



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				operations	
			C402.4	Solve cryptographic operations using public key cryptographic algorithms	K3
			C402.5	Apply the various Authentication schemes to simulate different applications.	K3
			C402.6	Understand various Security practices and System security standards	K2
3	IV / VII	CS8791 – CLOUD COMPUTING	C403.1	Articulate the main concepts, key technologies, strengths and limitations of cloud computing	K2
			C403.2	Understand the key and enabling technologies that help in the development of cloud.	K2
			C403.3	Make use of NIST cloud computing architecture to solve architecture design challenges	K3
			C403.4	Understand the core issues of cloud computing such as resource management and security.	K2
			C403.5	Install and use current cloud technologies.	K3
			C403.6	Illustrate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud.	K3
4	IV / VII	OIE751 - ROBOTICS	C404.1	Understand the functions of the basic components of a Robot.	K2
			C404.2	Use of various types of End of Effectors and Sensors	K2
			C404.3	Impart knowledge in Robot Kinematics and Programming	K2
			C404.4	Learn Robot safety issues and economics.	K2
			C404.5	Apply the basic engineering knowledge	K3



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				for the design of robotics	
5	IV / VII	GE8077 – TOTAL QUALITY MANAGEMENT	C405.1	Outline the Dimensions and Barriers regarding with Quality.	K2
			C405.2	Illustrate the TQM Principles.	K2
			C405.3	Demonstrate Tools utilization for Quality improvement	K2
			C405.4	Understand the various types of Techniques are used to measure Quality.	K2
			C405.5	Apply various Quality Systems and Auditing on implementation of TQM.	K3
			C405.6	Apply the tools and techniques of quality management to manufacturing and services processes	K3
6	IV / VII	CS8079 – HUMAN COMPUTER INTERACTION	C406.1	Learn the foundations of Human Computer Interaction.	K2
			C406.2	Design effective dialog for HCI.	K3
			C406.3	Design effective HCI for individuals and persons with disabilities.	K3
			C406.4	Assess the importance of user feedback.	K3
			C406.5	Understand the HCI implications for designing multimedia / ecommerce / e-learning Web Sites	K2
			C406.6	Develop meaningful user interface.	K3
7	IV / VII	CS8711 – CLOUD COMPUTING LABORATORY	C407.1	Configure various virtualization tools such as Virtual Box, VMware workstation.	K2
			C407.2	Design and deploy a web application in a PaaS environment link layer	K2
			C407.3	Learn how to simulate a cloud environment to implement new schedulers	K2



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			C407.4	Demonstrate generic cloud environment that can be used as a private cloud	K2
			C407.5	Manipulate large data sets in a parallel environment.	K3
			C407.6	Apply Hadoop single node cluster and run simple applications	K2
8	IV / VII	IT8761 - SECURITY LABORATORY	C408.1	Develop code for classical Encryption Techniques to solve the problems.	K3
			C408.2	Build cryptosystems by applying symmetric and public key encryption algorithms.	K3
			C408.3	Construct code for authentication algorithms	K3
			C408.4	Develop a signature scheme using Digital signature standard.	K2
			C408.5	Demonstrate the network security system using open source tools	K3
			C408.6	Develop code for classical Encryption Techniques to solve the problems.	K3



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COURSE OUT COME FOR REGULATION - 2013

PROGRAMME: ELECTRONICS AND COMMUNICATION ENGG	DEGREE: UG	A.Y: 2016-2017	SEMESTER: 01
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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)		Knowledge Level
1.	I / I	HS6151 - TECHNICAL ENGLISH I	C101.1	Explain clearly, confidently, comprehensibly, and communicate with one or many listeners using appropriate communicative strategies.	K2
			C101.2	Construct cohesively and coherently and flawlessly avoiding grammatical errors, using a wide vocabulary range, organizing their ideas logically on a topic.	K6
			C101.3	Organize different genres of texts adopting various reading strategies.	K6
			C101.4	Distinguish and comprehend different spoken discourses/excerpts in different accents.	K2
			C101.5	Listen to different accents, speeches and presentations.	K2
2.	I / I	MA6151 - MATHEMATICS I	C102.1	The students will have a clear idea of matrix algebra pertaining eigen values and eigen vectors in addition dealing with quadratic forms.	K2
			C102.2	The students will learn infinite series and their convergence and acquire the knowledge of with limitations of using infinite series approximations for solutions arising in mathematical modeling.	K2
			C102.3	Understand and characterize phenomena which evolve around circle of curvature and envelope.	K2



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			C102.4	Students will have the idea of extension of a function of a one variable to several variables. Multivariable functions of real variables arise inevitable in engineering.	K2
			C102.5	The student will be exposed to double and triple integration so that they can handle integrals of higher order which are applied in engineering field.	K3
3.	I / I	PH6151 - ENGINEERING PHYSICS I	C103.1	Classify the Bravais lattices, and different types of crystal structures & growth techniques.	K1
			C103.2	Demonstrate the properties of elasticity and heat transfer of objects.	K2
			C103.3	Explain Black body Radiation and properties of matter waves and Schrodinger wave equations.	K3
			C103.4	Illustrate the acoustic requirements, production and application of ultrasonic.	K1
			C103.5	Examine the characteristics of laser and optical fiber.	K2
4.	I / I	CY6151 - ENGINEERING CHEMISTRY I	C104.1	Classify the polymers and their utility in the industries and describe the techniques of polymerization and properties of polymers.	K1
			C104.2	Relate various thermodynamic functions such as enthalpy, entropy, free energy and their importance and equilibrium constants and its significance.	K2
			C104.3	Explain the photo physical processes such as fluorescence and phosphorescence and various components of UV and IR spectrophotometer.	K1
			C104.4	Illustrate the phase transitions of one component and two component systems	K3



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				and the types of alloys and their applications in industries.	
			C104.5	Outline the synthesis, characteristics and the applications of nano-materials.	K1
5.	I / I	GE6151- COMPUTER PROGRAMMING	C105.1	Elaborate the organization of digital computer and design the solution for simple computing problems using algorithm, flowchart and pseudo code.	K6
			C105.2	Apply the different looping structure to solve simple scientific and statistical problems.	K3
			C105.3	Devise the solutions for simple problems using arrays and strings	K6
			C105.4	Demonstrate the usage of dynamic memory allocation and pointer variables.	K3
			C105.5	Illustrate the concepts of structure and union with an example programs.	K4
6.	I / I	GE6152- ENGINEERING GRAPHICS	C106.1	Sketch the conic sections, special curves, and draw orthographic views from pictorial views and models.	K4
			C106.2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.	K3
			C106.3	Sketch the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures.	K4
			C106.4	Practice the sectional views of solids like cube, prisms, pyramids, cylinders & cones and extend its lateral surfaces	K3
			C106.5	Sketch the perspective projection of simple solids, truncated prisms, pyramids, cone and cylinders and sketch the isometric projection of simple machine parts.	K4



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7.	I / I	GE6161- COMPUTER PRACTICES LABORATORY	C107.1	Describe the usage of office automation tools	K1
			C107.2	Apply the good programming methods for program development.	K3
			C107.3	Design and implement the C program for simple application	K4
			C107.4	Develop and implement the recursive programs	K4
			C107.5	Implement the C program with the help of Structures and Union	K5
8.	I / I	GE6162 - ENGINEERING PRACTICES LABORATORY	C108.1	Construct Electrical and Electronic	K6
			C108.2	Examine different types of electronic circuits and components.	K3
			C108.3	Recognize electrical safety rules, grounding, general house wiring.	K6
			C108.4	Explore soldering practices.	K3
9.	I / I	GE6163 - PHYSICS AND CHEMISTRY LABORATORY - I	C109.1	Apply physics principles of optics and thermal physics to evaluate engineering properties of materials.	K3
			C109.2	Perform the quantitative chemical analysis of chloride and dissolved	K5
			C109.3	Determine the amount of acids by using the instruments of conductivity meter and pH meter.	K5

PROGRAMME: ELECTRONICS AND COMMUNICATION ENGG	DEGREE: UG	A.Y: 2016-2017	SEMESTER: 02
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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
1.	I / II	HS6251 - TECHNICAL ENGLISH II	C110.1	Speak convincingly, express their opinions clearly, initiate a discussion, negotiate, argue using appropriate communicative strategies..	K2
			C110.2	Write effectively and persuasively and produce different types of writing such as narration, description, exposition and	K5



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				argument as well as creative, critical, analytical and evaluative writing.	
			C110.3	Read different genres of texts, infer implied meanings and critically analyze and evaluate them for ideas as well as for method of presentation.	K1
			C110.4	Listen/view and comprehend different spoken excerpts critically and infer unspoken and implied meanings.	K2
			C110.5	Read and write effectively for a variety of professional and social settings	K2
2.	I / II	MA6251 - MATHEMATICS II	C111.1	The students were imbued with techniques in solving ordinary differential equations that model most of the engineering problems .	K3
			C111.2	The student were acquainted with the concepts of vector calculus-like Gradient, Divergence, Curl, Directional derivative, Irrotational vector and Solenoidal vector. The course gives an understanding of Vector integration, needed for problems in all engineering disciplines.	K2
			C111.3	To make the students to appreciate the purpose of using transforms to create new domain in which it is easier to handle the problem that is being investigated.	K6
			C111.4	To develop an understanding of the standard techniques of complex variable and mapping so as to enable the student to apply them with confidence, in application areas such as heat conduction, elasticity, fluid dynamics and flow of electric current .	K4
			C111.5	The student will be exposed to the concept of Cauchy's integral theorem,	K3



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				Taylor and Laurent expansions, Singular points, Application of residue theorem to evaluate complex integrals.	
3.	I / II	PH6251 - ENGINEERING PHYSICS II	C112.1	Illustrate Classical and Quantum free electron theory & calculate carrier concentration in metals.	K2
			C112.2	Describe the carrier concentration in semiconductors and identify the P-type & N-type semiconductor using Hall Effect.	K2
			C112.3	Classify the different types of magnetic and superconducting materials	K2
			C112.4	Explain the dielectrics, types of polarization, losses and breakdowns	K2
			C112.5	Discuss the properties, preparation and applications of Metallic Alloys, SMA, Nanomaterials, NLO, and Biomaterials.	K2
4.	I / II	CY6251 - ENGINEERING CHEMISTRY II	C113.1	Describe water technology in the purification of water in domestic and industrial applications.	K1
			C113.2	Design the electro chemical cells and to identify the types of corrosion and the methods of prevention	K2
			C113.3	Illustrate the methods of harnessing energy from non-conventional energy sources.	K2
			C113.4	Classify various engineering materials and their important.	K1
			C113.5	Relate the significance of solid, liquid and gaseous fuel and to calculate the calorific values of fuels and the requirement of air for combustion in furnaces.	K3.
5.	I / II	EC6201- Electronic	C114.1	Describe the theory, construction and operation of semiconductor diodes.	K2



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		Devices	C114.2	Explain the operation and characteristics of bipolar junction devices	K3
			C114.3	Explain field effect transistor characteristics and their operations.	K5
			C114.4	Illustrate working of various types of special semiconductor devices	K2
			C114.5	Explain the construction, operation and applications of power and display devices.	K6
6.	I / II	EE6201 - Circuit Theory	C115.1	Examine the electrical circuits	K4
			C115.2	Apply circuit theorems	K3
			C115.3	Analyze AC and DC Circuits	K4
			C115.4	Analyze coupled circuits and the transient response of circuits	K4
			C115.5	Analyze Phasor diagrams and analysis of three phase circuits	K4
7.	I / II	GE6262 - Physics and Chemistry Laboratory - II	C116.1	Ability to test materials by using their knowledge of applied physics principles in optics and properties of matter.	K5
			C116.2	Determine the hardness, alkalinity and metal ion content in the water samples by volumetric titration.	K5
			C116.3	Estimate the water quality parameters by potentiometer, conductometer and flame photometer.	K2
8.	I / II	EC6211 - Circuits and Devices Laboratory	C117.1	Describe the characteristics of basic electronic devices	K2
			C117.2	Demonstrate the RL and RC circuits	K2
			C117.3	Demonstrate the Thevinin & Norton theorem	K2



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			C117.4	Test for KVL & KCL, and Super Position Theorems	K4
			C117.5	Test for maximum power transfer & reciprocity theorems	K4

PROGRAMME: ELECTRONICS AND COMMUNICATION ENGG	DEGREE: UG	A.Y: 2017-2018	SEMESTER: 03
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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)		Knowledge Level
1.	II / III	MA6351 - Transforms and Partial Differential Equations	C201.1	Solve Linear Partial differential equations of first and second order.	K3
			C201.2	Associate the concepts of Fourier series expansion for even and odd functions.	K2
			C201.3	Apply the concepts of Fourier series in solving boundary value problems.	K3
			C201.4	Discuss the Fourier transform, Fourier Sine and Cosine transform techniques.	K2
			C201.5	Discuss the concepts of Z-Transform techniques for discrete time systems.	K2
2.	I / I	EE6352 - Electrical Engineering and Instrumentation	C202.1	Three phase supply and power measurement	K2
			C202.2	Explain the concepts in electrical generators, motors and transformers	K2
			C202.3	Apply the basic measurement and instrumentation based devices.	K2
			C202.4	Conclude the digital instruments in measurements	K2
			C202.5	Demonstrate the power generation, transmission and distribution concepts	K2
3.	I / I	EC6301 - Object Oriented Programming	C203.1	Summarize the object oriented features like data abstraction and overloading to solve various computing problems.	K6



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		and Data Structures	C203.2	Illustrate the concepts of inheritance and polymorphism in various applications.	K4
			C203.3	Make use of linear data structure concepts for problem solving.	K3
			C203.4	Experiment with various non-linear data structures such as trees and graphs.	K5
			C203.5	Analyze standard algorithms for searching and sorting techniques.	K4
4.	I / I	EC6302 - Digital Electronics	C204.1	Illustrate the concept of Boolean algebra and Boolean minization	K2
			C204.2	Construct various methods used for simplification of Boolean expressions	K3
			C204.3	Interpret and implement Combinational circuits.	K2
			C204.4	Demonstrate the synchronous and asynchronous sequential circuits	K2
			C204.5	Create a simple HDL codes for the circuits	K2
5.	I / I	EC6303- Signals and Systems	C205.1	Make use of the properties of signals & systems	K3
			C205.2	Apply Laplace transform, Fourier transform, Z transform and DTFT in signal analysis	K3
			C205.3	Build the continuous time LTI systems using Fourier and Laplace Transforms	K3
			C205.4	Build discrete time LTI systems using Z transform and DTFT	K3
			C205.5	Apply the transforms in designing the systems	K3
6.	I / I	EC6304 - Electronic Circuits-I	C206.1	Design electronic circuits with transistor biasing	K3
			C206.2	Design simple amplifier circuits.	K3



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			C206.3	Analyze the small signal equivalent circuits of transistors.	K3
			C206.4	Design large signal amplifiers.	K3
			C206.5	Analyze different IC MOSFET amplifiers.	K3
7.	I / I	EC6311- Analog and Digital Circuits Laboratory	C207.1	Distinguish cascade and cascade amplifier	K4
			C207.2	Analyze the limitation in bandwidth of single stage amplifier	K4
			C207.3	Analyze the limitation in bandwidth of mult stage amplifier	K4
			C207.4	Develop and Simulate amplifiers using Spice	K2
			C207.5	Measure CMRR in differential amplifier	K5
8.	I / I	EC6312 - OOPS and Data Structures Laboratory	C208.1	Design and implement various concepts in C++ programming language	K6
			C208.2	Apply good programming design methods for program development.	K3
			C208.3	Apply the different data structures like stacks, queues, linked lists, trees and graphs for implementing solutions to practical problems.	K3

PROGRAMME: ELECTRONICS AND COMMUNICATION ENGG	DEGREE: UG	A.Y: 2017-2018	SEMESTER: 04
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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
1.	II / IV	MA6451- Probability and Random Processes	C209.1	Identify the functions of discrete and continuous random variables, moments and moment generating function	K1
			C209.2	Solve problems in marginal conditional distribution, using the concepts of correlation, regressions and transformation of two dimensional	K2



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				random variables.	
			C209.3	Determine the process is either SSS or WSS, find the TPM of Markov chain and its classifications.	K3
			C209.4	Explain the correlation and spectral densities.	K3
			C209.5	Solve the linear system and compute the linear time invariant inputs.	K2
2.	II / IV	EC6401- Electronic Circuits II	C210.1	Describe the concepts of feedback amplifiers	K3
			C210.2	Classify the various types of oscillators.	K3
			C210.3	Design different types of tuned amplifiers and analyze its performance.	K4
			C210.4	Discuss various types of wave shaping circuits and multivibrators.	K3
			C210.5	Explain the blocking oscillator and time base generator circuits.	K2
3.	II / IV	EC6402- Communication Theory	C211.1	Design AM communication systems.	K1
			C211.2	Design Angle modulated communication systems	K2
			C211.3	Apply the concepts of Random Process to the design of Communication systems	K3
			C211.4	Analyze the noise performance of AM and FM systems	K4
			C211.5	Apply the concept of information theory and coding	K3
4.	II / IV	EC6403 Electromagnetic Fields	C212.1	Demonstrate the basic mathematical concepts related to electromagnetic vector fields	K2
			C212.2	Acquire the knowledge in potential,	K2



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				energy density and their applications	
			C212.3	Knowledge in magneto static fields, magnetic flux density, vector potential and its applications	K2
			C212.4	Different methods of emf generation and Maxwell's equations	K4
			C212.5	Summarize the basic concepts electromagnetic waves and characterizing parameters	K2
5.	II / IV	EC6404 Linear Integrated Circuits	C213.1	Basic's of Opamp and also AC and DC Performance	K3
			C213.2	Design the linear and non linear applications of op-amps.	K3
			C213.3	Analyze the applications using analog multiplier and PLL	K2
			C213.4	Conversion of ADC and DAC using op-amps.	K2
			C213.5	Analyze the Special Functions ICs	K4
6.	II / IV	EC6405 Control System Engineering	C214.1	Basic elements of control system and their modeling using different techniques	K2
			C214.2	Construct a time domain analysis of control systems required for stability analysis	K3
			C214.3	Build frequency domain analysis of control systems required for stability analysis	K3
			C214.4	Construct the compensation technique that can be used to stabilize control systems	K3
			C214.5	Find the state variable analysis methods	K1
7.	II / IV	EC6411 Circuit and Simulation	C215.1	Design and Analyze the various types of feedback amplifiers	K4



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		Integrated Laboratory	C215.2	Design and Analyze Oscillator and Tuned Amplifier	K6
			C215.3	Design and Analyze Wave-shaping circuits	K6
			C215.4	Model the different Multivibrator circuits	K3
			C215.5	Design and simulate feedback amplifiers, oscillators, tuned amplifiers, wave-shaping circuits and multivibrators using SPICE Tool	K6
8.	II / IV	EC6412 Linear Integrated Circuit Laboratory	C216.1	Design oscillators and amplifiers using operational amplifiers	K6
			C216.2	Design filters using Opamp and perform experiment on frequency response.	K6
			C216.3	Analyse the working of PLL and use PLL as frequency multiplier.	K4
			C216.4	Design DC power supply using ICs	K6
			C216.5	Analyse the performance of oscillators and multivibrators using SPICE	K4
9.	II / IV	EE6461 Electrical Engineering and Control System Laboratory	C217.1	Design an experiments to study the load characteristics of DC motors / generators	K2
			C217.2	Build a bridge network circuit to measure the values of passive component	K6
			C217.3	Examine the stability of linear system through simulation software.	K2
			C217.4	Design an experimens to transfer function of DC generators.	K3
			C217.5	Behavior of linear system through simulation	K3



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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)		Knowledge Level
1.	III/V	EC6501 Digital Communication	C301.1	Design PCM systems	K2
			C301.2	Design and implement base band transmission schemes	K2
			C301.3	Design and implement band pass signaling schemes	K2
			C301.4	Analyze the spectral characteristics of band pass signaling schemes and their noise performance	K3
			C301.5	Design error control coding schemes	K4
2.	III/V	EC6502 Principles of Digital Signal Processing	C302.1	Interpret the transformation of discrete data between time and frequency domains and also apply mathematical tool for accelerating calculations in signal processing applications	K2
			C302.2	Construct IIR filtering for undesired signal and learn the frequency response characteristics of IIR filter	K3
			C302.3	Construct FIR filtering for undesired signal and know the linear phase response characteristics of FIR filter	K3
			C302.4	Classify the concept of quantization and also analyze how its affect in digital filters	K2
			C302.5	Explain various approach for changing the sampling rate of a digital signal is to convert it back into analog and then to re-digitize it at the new rate	K2
3.	III/V	EC6503 Transmission Lines and Wave Guides	C303.1	Vector algebra related to electromagnetic model.	K2
			C303.2	Discuss the propagation of signals through	K2



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				transmission lines and analyze impedance matching using smith chart.	
			C303.3	Illustrate uniform plane wave propagation in different mediums	K3
			C303.4	Describe the transmission and reflection characteristics of plane waves at boundaries.	K3
			C303.5	Analyze the propagation of waves in waveguides and resonators.	K4
4.	III/V	EC6504 Microprocessor and Microcontroller	C304.1	Describe the architecture of 8086 and write its assembly language programs.	K2
			C304.2	Discuss about the 8086 system bus structure and multiprocessor configurations	K2
			C304.3	Explain memory and I/O interfacing with applications such as traffic light controller, display interface and alarm controller.	K3
			C304.4	Describe the architecture of 8051 microcontroller and write its assembly language programs.	K4
			C304.5	Experiment the interfacing programs such as ADC, DAC, stepper motor and waveform generation with the help of 8051 microcontroller.	K2
5.	III/V	GE6351 Environmental Science and Engineering	C305.1	Implement scientific, technological, economic and political solutions to environmental problems	K3
			C305.2	Interrelationship between living organism and environment.	K1
			C305.3	Importance of environment by assessing its impact on the human world; envision the surrounding environment, its functions and its value.	K2



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			C305.4	Dynamic processes and understand the features of the earth's interior and surface.	K2
			C305.5	Integrated themes and biodiversity, natural resources, pollution control and waste management	K3
6.	III/V	EC6511 Digital Signal Processing Laboratory	C306.1	Develop various types of continuous signal and discrete signal.	K3
			C306.2	Demonstrate their abilities towards DSP processor based implementation of DSP system.	K2
			C306.3	Analyze a continuous and discrete signals using FFT algorithm.	K4
			C306.4	Analyze Finite word length effect on DSP systems.	K4
			C306.5	Construct adaptive filters for various applications of DSP.	K3
7.	III/V	EC6512 Communication System Laboratory	C307.1	Simulate end-to-end Communication Link	K5
			C307.2	Demonstrate their knowledge in base band signaling schemes through implementation of FSK, PSK and DPSK	K2
			C307.3	Apply various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of communication system	K3
			C307.4	To implement Equalization algorithms and Error control coding schemes	K5
			C307.5	Simulate & validate the various functional modules of a communication system	K4
8.	III/V	EC6513 Microprocessor and Microcontroller Laboratory	C308.1	Implement the ALP Programs for fixed point arithmetic circuits.	K6
			C308.2	Demonstrate the interfacing circuits for different I/Os.	K2



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			C308.3	Compile the ALP for generating waveforms such as square wave and triangular wave using microprocessors.	K3
			C308.4	Implement the programs in 8051 microcontroller.	K6
			C308.5	Analyze the performance in simulator and emulator	K4

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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)		Knowledge Level
1.	III/VI	MG6851 Principles of Management	C309.1	Enable the students to study the evolution of Management,	K2
			C309.2	study the functions and principles of management	K4
			C309.3	learn the application of the principles in an organization .	K5
			C309.4	able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling	K5
			C309.5	same basic knowledge on international aspect of management	K2
2.	III/VI	CS6303 Computer Architecture	C310.1	Describe data representation, instruction formats and the operation of a digital computer	K3
			C310.2	Illustrate the arithmetic and logic unit	K3
			C310.3	Discuss about implementation schemes of control unit and pipeline performance.	K5
			C310.4	Illustrate the parallel processing architectures.	K2
			C310.5	Explain the performance of memory and I/O systems.	K2



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3.	III/VI	CS6551 Computer Networks	C311.1	Describe the Network fundamentals and terminology	K1
			C311.2	Recognize the different internetworking devices and their functions	K1
			C311.3	Explore the network with routing and multicasting	K3
			C311.4	Explain the detailed inner workings of TCP/IP protocol suit.	K2
			C311.5	Analyze the features and operations of various application layer protocols such as HTTP, DNS, and SMTP.	K4
4.	III/VI	EC6601 VLSI Design	C312.1	Basics of CMOS circuits and the CMOS manufacturing process.	K2
			C312.2	Design and Analysis of combinational logic circuits.	K3
			C312.3	Design and analysis of sequential logic circuits.	K3
			C312.4	Construct and realization of adder circuits and multipliers.	K3
			C312.5	Implementation of Full custom and Semicustom ICs.	K3
5.	III/VI	EC6602 Antenna and Wave propagation	C313.1	Define the fundamentals of antenna parameters, impedance matching and dipole antennas.	K2
			C313.2	Define the concepts of aperture antennas and understand its design procedures.	K2
			C313.3	Explain and analyze the various types of antenna arrays, N element antenna arrays and pattern multiplication.	K4
			C313.4	Design and explain the principles of special antennas, EBG structures, antenna measurement procedure for radiation	K5



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				pattern, gain.	
			C313.5	Classify the various propagation methods and understand the structure of ionosphere and its electrical properties due to the magnetic field of earth.	K3
6.	III/VI	EC6001 Medical Electronics	C314.1	To gain knowledge about the various physiological parameters both electrical and non electrical and the methods of recording and also the method of transmitting these parameters.	K2
			C314.2	Discuss the application of electronics in diagnostic and therapeutic area.	K3
			C314.3	Measure biochemical and various physiological information	K4
			C314.4	To study about the various assist devices used in the hospitals	K2
			C314.5	To gain knowledge about equipment used for physical medicine and the various recently developed diagnostic and therapeutic techniques	K2
7.	III/VI	EC6611 Computer Networks Laboratory	C315.1	Perform client-server communication between two desktop computers using Socket Programming	K3
			C315.2	Implement the different protocols.	K6
			C315.3	Simulate various network topologies like Star, Bus and Ring	K2
			C315.4	Implement and compare the different routing algorithms.	K6
			C315.5	Simulate the algorithms with the help of Network Simulator tool	K2
8.	III/VI	EC6612 VLSI Design	C316.1	Develop the HDL code for basic as well as advanced digital integrated circuits.	K2



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		Laboratory	C316.2	Develop the logic modules into FPGA Boards.	K2
			C316.3	Perform the Synthesization, Place and Route the digital IPs.	K2
			C316.4	Design, Simulate and Extract the layouts of Analog IC Blocks using EDA tools.	K6
			C316.5	Design and Simulate the modern chip manufacturing software tools.	K6
9.	III/VI	GE6674 Communication and Soft Skills - Laboratory	C317.1	Apply appropriate communications skills across setting purpose and audiences	K2
			C317.2	Demonstrate Knowledge of communication theory and applications	K6
			C317.3	Organize different genres of texts adopting various reading strategies.	K6
			C317.4	Distinguish and comprehend different spoken discourses/excerpts in different accents.	K2
			C317.5	Listen to different accents, speeches and presentations.	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
1.	IV/VII	EC6701 RF and Microwave Engineering	C401.1	Analyze the different low frequency parameters and S parameters and describe the RF component basics	K4
			C401.2	Analyze the amplifiers by means of stability, noise figures and study of various matching networks.	K4
			C401.3	Explain the operation of passive and active microwave devices	K2



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			C401.4	Define about the working principle of various microwave tubes and the limitations of conventional tubes	K1
			C401.5	Compare the principle of operation of measuring instruments and various microwave measuring procedures	K2
2.	IV/VII	EC6702 Optical Communication and Networks	C402.1	Basic elements of optical fiber communication and types of fiber modes and configurations.	K2
			C402.2	Different kind of losses, distortion and degradation associated with optical fiber transmission.	K2
			C402.3	Various optical sources, optical detectors and fiber joints.	K5
			C402.4	Receiver operation and different fiber parameter measurements.	K3
			C402.5	Interpret the optical networks in real time application.	K4
3.	IV/VII	EC6703 Embedded and Real Time Systems	C403.1	Describe the architecture and programming of ARM processor.	K2
			C403.2	Outline the concepts program level in embedded processor computing.	K6
			C403.3	Explain the basic concepts of real time Operating system.	K6
			C403.4	Explain the concept of design methodologies techniques for embedded system	K2
			C403.5	Describe Model real-time applications using embedded-system concepts.	K6
4.	IV/VII	EC6004 Satellite Communication	C404.1	To understand the basics of satellite orbits.	K2
			C404.2	To understand the satellite segment and	K2



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				earth segment.	
			C404.3	To analyze the various methods of satellite access.	K4
			C404.4	To analyze the various Multiple access techniques for satellite communication.	K4
			C404.5	To understand the applications of satellites	K2
5.	IV/VII	EC6009 Advanced Computer Architecture	C405.1	Outline the fundamentals of Computer design.	K1
			C405.2	Demonstrate the performance of instruction level parallelism	K2
			C405.3	Classify the different data level parallelism.	K4
			C405.4	Compare the performance of different architectures.	K3
			C405.5	Illustrate the hardware features involved in memory and I/O.	K4
6.	IV/VII	EC6013 Advanced Microprocessor and Microcontroller	C406.1	Concept of high performance cisc architecture – pentium	K2
			C406.2	Concept of high performance risc architecture – ARM	K2
			C406.3	Design ARM application development	K3
			C406.4	Design and implement motorola 68HC11 microcontrollers	K4
			C406.5	Design and implement interfacing microcontroller	K4
7.	IV/VII	EC6711 Embedded Laboratory	C407.1	Practice to write the programs for ARM based applications.	K6
			C407.2	Demonstrate the memory operations, A/D & D/A convertors using ARM system	K4



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			C407.3	Analyze the interrupt functions in ARM based systems.	K4
			C407.4	Demonstrate the keyboard, display, motor and sensor interfacing units	K4
			C407.5	Design an ARM based system as a mini project.	K5
8.	IV/VII	EC6712 Optical and Microwave Laboratory	C408.1	Analyze the performance of simple optical communication link	K4
			C408.2	Test microwave components	K6
			C408.3	Analyse the mode characteristics of fiber	K4
			C408.4	Analyse the Radiation Pattern of antenna	K4
			C408.5	Measure the various parameters of Numerical Aperture, Connector & Bending loss	K5

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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
1.	IV/VIII	EC6801 Wireless Communication	C409.1	Know the characteristic of wireless channel	K2
			C409.2	Learn the various cellular architectures	K2
			C409.3	Understand the concepts behind various digital signaling schemes for fading channels	K2
			C409.4	Be familiar about the various multipath mitigation techniques	K5
			C409.5	Design and implement systems with transmit/receive diversity and MIMO systems and analyze their performance	K5
2.	IV/VIII	EC6802	C410.1	Contrast with the latest 3G/4G networks	K4



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		Wireless Networks	C410.2	Illustrate the Wi-MAX networks and its architecture	K2
			C410.3	Apply wireless network environment for any application using latest wireless protocols and standards	K3
			C410.4	Distinguish applications for smart phones and mobile devices with latest network strategies	K4
			C410.5	Classify the evolution of 4G Networks, its architecture and applications	K2
3.	IV/VIII	CS6003 Ad hoc and Sensor Networks	C411.1	Explain the concepts, network architectures and applications of ad hoc and wireless sensor networks	K2
			C411.2	Analyze the protocol design issues of ad hoc and sensor networks	K4
			C411.3	Design routing protocols for ad hoc and wireless sensor networks with respect to some protocol design issues	K5
			C411.4	Learn the architecture and protocols of wireless sensor networks.	K2
			C411.5	Evaluate the QoS related performance measurements of ad hoc and sensor networks	K3
4.	IV/VIII	GE6757 Total Quality Management	C412.1	Outline the Dimensions and Barriers regarding with Quality.	K2
			C412.2	Illustrate the TQM Principles	K4
			C412.3	Demonstrate Tools utilization for Quality improvement.	K6
			C412.4	Explain the various types of Techniques are used to measure Quality.	K2
			C412.5	Apply various Quality Systems and Auditing on implementation of TQM.	K3



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5.	IV/VIII	EC6811 Project Work	C413.1	To develop the ability to solve a specific problem right from its identification .	K3
			C413.2	To Analysis the literature review till the successful solution of the same	K4
			C413.3	On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology	K3
			C413.4	To train the students in preparing project reports.	K6
			C413.5	To train the students to face reviews and viva voce examination	K3



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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level
1.	I/I	HS8151 - Communicative English	C101.1 Communicate clearly both in the written form and orally using appropriate vocabulary and comprehend written texts to make inferences.	K2
			C101.2 Speak persuasively in different social contexts and write biographical details and technical documents cohesively, coherently and flawlessly using appropriate words.	K2
			C101.3 Speak, read and write effectively for a variety of professional and social settings.	K2
			C101.4 Read descriptive, narrative, expository and interpretive texts and write using creative, critical, analytical and evaluative methods.	K6
			C101.5 Listen, comprehend and respond to different spoken and written discourses/excerpts in different accents and write different genres of texts adopting various writing strategies.	K6
2.	I/I	MA8151 - Engineering Mathematics - I	C102.1 Use both the limit definition and rules of differentiation to differentiate functions.	K3
			C102.2 Apply differentiation to solve maxima and minima problems	K3
			C102.3 Evaluate integrals both by using Reimann sums and by using the fundamental theorem of convergent improper integrals. Evaluate integrals using techniques of integration, such as substitution, partial Fractions, integration by parts and improper integrals.	K5
			C102.4 Apply integration to compute multiple integrals, area, volume, integrals in polar	K3



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			Coordinates, in addition to change of order and change of variables.	
			C102.5 Apply various techniques in solving differential equations.	K3
3.	I/I	PH8151 - Engineering Physics	C103.1 Discuss the Young's modulus and Rigidity modulus of elasticity of materials and its determination through experimental methods .	K2
			C103.2 Describe the characteristics of laser light and their application in semiconductor laser .	K2
			C103.3 Discuss the principle behind the propagation of light through an optical fibre and its application in sensors.	K2
			C103.4 Summarize the different modes of heat transfer.	K2
			C103.5 Describe the unit cell characteristics and the growth of crystals	K2
4.	I/I	CY8151 - Engineering Chemistry	C104.1 Summarize the water related problems in boilers and their treatment techniques.	K2
			C104.2 Discuss the applications of adsorption in the field of water and air pollution abatement.	K1
			C104.3 Discuss the types of catalysis and the mechanism of enzyme catalysis.	K2
			C104.4 Associate phase rule in the alloying and the behaviour of one component and two component systems using phase diagram.	K2
			C104.5 Summarize the principles and generation of energy in batteries ,nuclear reactors, solar cells, wind mills and fuel cells.	K2
5.	I/I	GE8151- Problem Solving and Python	C105.1 Discuss the logical solutions through Flowcharts, Algorithms and Pseudo code	K2
			C105.2 Understand the syntax for python	K2



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				programming constructs.	
			C105.3	Compute the flow of the program to obtain the programmatic solution.	K2
			C105.4	Examine the programs with sub problems using 'Python' language	K3
			C105.5	Compute the compound data using Python lists, tuples, and dictionaries	K2
6.	I/I	GE8152- Engineering Graphics	C106.1	Sketch the conic sections, special curves, and draw orthographic views from pictorial views and models.	K4
			C106.2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.	K3
			C106.3	Sketch the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures.	K4
			C106.4	Practice the sectional views of solids like cube, prisms, pyramids, cylinders & cones and extend its lateral surfaces	K3
			C106.5	Sketch the perspective projection of simple solids, truncated prisms, pyramids, cone and cylinders and sketch the isometric projection of simple machine parts.	K4
7.	I/I	GE8161- Problem Solving and Python	C107.1	Write, test, and debug simple Python programs	K1
			C107.2	Apply the concept of conditionals and loops in Python programs.	K3
			C107.3	Develop the Python programs step-wise by defining functions and calling them.	K4
			C107.4	Use Python lists, tuples, dictionaries for representing compound data.	K3
			C107.5	Read and write data from/to files in Python.	K2



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8.	I/I	Physics and Chemistry Laboratory	C108.1	Apply physics principles of optics and thermal physics to evaluate engineering properties of materials.	K3
			C108.2	Ability to test materials by using their knowledge of applied physics principles in optics and properties of matter.	K5
			C108.3	Perform the quantitative chemical analysis of chloride and dissolved oxygen.	K5
			C108.4	Determine the amount of acids by using the instruments of conductivity meter and pH meter.	K5
			C108.5	Determine the hardness, alkalinity and metal ion content in the water samples by volumetric titration.	K5

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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
9.	I/II	HS8251 - Technical English	C109.1	Read technical texts and write area specific texts effortlessly.	K2
			C109.2	Listen and comprehend lectures and talks in their areas of specialization and write effectively for a variety of professional and social settings	K2
			C109.3	Speak and write appropriately and effectively in varied formal and informal contexts.	K6
			C109.4	Write effectively and persuasively and produce different types of writing such as letters, minutes, reports and winning job applications.	K6



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			C109.5 Communicate clearly using technical vocabulary in their professional correspondences	K2
10.	I/II	MA8251 - Engineering Mathematics - II	C110.1 Calculate the Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices	K3
			C110.2 Evaluate the line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification	K5
			C110.3 Determine Analytic functions, Conformal mapping and Bilinear transformation	K3
			C110.4 Evaluate the Cauchy's integrals, Taylor's and Laurent's and residue theorem for evaluation for real integrals using circular and semicircular, contour	K5
			C110.5 Evaluate Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.	K5
			C110.6 Discuss Laplace Transform methods to solve initial value problems for constant coefficient linear ODEs.	K2
11.	I/II	PH8253 - Physics for Electronics Engineering	C111.1 Gain knowledge on classical and quantum electron theories and energy band structures.	K2
			C111.2 Acquire knowledge on basis of semiconductor physics and its applications in various devices.	K2
			C111.3 Get knowledge on magnetic and dielectric properties of materials.	K2
			C111.4 Have the necessary understanding on the functioning of optical materials for opto	K2



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			electronics.	
			Understand the basics of quantum structures and their applications in spintronics	K2
12.	I/II	BE8254 - Basic Electrical and Instrumentation Engineering	C112.1 Predict the behavior of any electrical and magnetic circuits.	K3
			C112.2 Formulate and solve complex AC, Dc circuits	K4
			C112.3 Identify the type of electrical machine used for that particular application.	K3
			C112.4 Realize the requirement of transformers in transmission and distribution of electric power and other applications.	K5
			C112.5 Function on multi-disciplinary teams.	K2
13.	I/II	EC8251- Circuit Analysis	C113.1 To analyze electrical circuits	K4
			C113.2 Apply the Circuit theorems in real time	K3
			C113.3 To analyze resonance and coupled circuits	K4
			C113.4 To analyze the transient circuits	K4
			C113.5 To analyze the two port networks	K4
14.	I/II	EC8252 - Electronic Devices	C114.1 Describe the theory, construction and operations of semiconductor diodes.	K2
			C114.2 Explain the operation and characteristics of bipolar junction devices	K3
			C114.3 Explain field effect transistor characteristics and their operations..	K1
			C114.4 Illustrate working of various types of special semiconductor devices	K2
			C114.5 Explain the construction, operation and applications of power and display devices	K6
15.	I/II	EC8261 -	C115.1 Describe the characteristics of basic	K2



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		Circuits and Devices Laboratory		electronic devices	
			C115.2	Demonstrate the RL and RC circuits	K2
			C115.3	Demonstrate the Thevinin & Norton theorem	K2
			C115.4	Test for KVL & KCL, and Super Position Theorems	K4
			C115.5	Test for maximum power transfer & reciprocity theorems	K4
16.	I/II	GE8261 - Engineering Practices Laboratory	C116.1	Fabricate carpentry components and pipe connections including plumbing works.	K2
			C116.2	Use welding equipments to join the structures.	K2
			C116.3	Carry out the basic machining operations	K2
			C116.4	Make the models using sheet metal works	K4
			C116.5	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundary and fittings	K4
			C116.6	Carry out basic home electrical works and appliances	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
1.	II/III	MA8352 - Linear Algebra and Partial Differential Equations	C201.1	Compute basic objects associated with vector areas and linear transformation.	K2
			C201.2	Concepts on Eigenvalues and Eigenvectors of a matrix.	K2
			C201.3	Understand the Concepts of inner product spaces	K2



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			C201.4	The essential principles of partial differential equations and the various answer processes for solving the First order non-linear partial differential equations.	K2
			C201.5	Analytical methods for solving better order partial differential equations and the application of Fourier series for solving the initial and boundary value issues in a one dimensional wave and heat equations and boundary price problems in elliptic equations	K2
2.	II/III	EC8393 - Fundamentals of Data Structures In C	C202.1	Develop the programs in C using basic constructs.	K4
			C202.2	Develop the programs in C using function, pointers, structures and unions.	K4
			C202.3	Suggest and Implement appropriate linear data structure operations for any given data set in C.	K6
			C202.4	Suggest and Implement appropriate non-linear data structure operations for a given application in C.	K6
			C202.5	Appropriately choose the sorting algorithms and also apply hashing concepts for a given problem.	K5
3.	II/III	EC8351 - Electronic Circuits- I	C203.1	Explain various methods of transistor biasing.	K1
			C203.2	Design of single stage and multistage BJT amplifiers	K5
			C203.3	Analyze the single stage FET, MOSFET amplifiers	K4
			C203.4	Discuss the frequency of amplifiers	K2
			C203.5	Design and testing of power supplies	K5
4.	II/III	EC8352 - Signals and	C204.1	Make use of the properties of signals & systems	K3



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		Systems	C204.2	Apply Laplace transform, Fourier transform, Z transform and DTFT in signal analysis	K3
			C204.3	Build the continuous time LTI systems using Fourier and Laplace Transforms	K3
			C204.4	Build discrete time LTI systems using Z transform and DTFT	K3
			C204.5	Apply the transforms in designing the systems	K3
5.	II/III	EC8392- Digital Electronics	C205.1	Concept of Boolean algebra and Boolean minimization using K-Map and Tabulation Method	K2
			C205.2	Compose the digital combinational circuits	K6
			C205.3	Design of synchronous sequential circuits	K6
			C205.4	Design of asynchronous sequential circuits	K6
			C205.5	Illustrate the classifications of memories and programmable logic devices	K2
6.	II/III	EC8391 - Control Systems Engineering	C206.1	Categorize the various control systems by using various techniques.	K2
			C206.2	Attain the time response and steady state error of control systems.	K5
			C206.3	Study the various frequency response plots and its system.	K2
			C206.4	Apply the concepts of various system stability criterions.	K3
			C206.5	Analyse and obtain state space models using state variables.	K4
7.	II/III	EC8381- Fundamentals of Data Structures in C Laboratory	C207.1	Develop C programs for simple applications making use of basic constructs.	K4
			C207.2	Apply basic data structures for a given problem using C.	K3



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			C207.3	Implement linear and non-linear data structures using C	K6
			C207.4	Implement functions and recursive functions in C.	K6
			C207.5	Choose appropriate searching, sorting and hashing algorithm for an application and implement it in a modularized way.	K4
8.	II/III	EC8361 - Analog and Digital Circuits Laboratory	C208.1	Analyze the rectifiers, filters and regulated power supplies.	K4
			C208.2	Demonstrate the response of BJT and JFET amplifiers.	K2
			C208.3	Design a Cascode and Cascade amplifiers.	K6
			C208.4	Design a Combinational and Sequential Circuit using Logic Gates & Flip-flop	K6
			C208.5	Simulate the Circuit using Pspice Model	K5
9.	II/III	HS8381 - Interpersonal Skills/Listening & Speaking	C209.1	Speak effectively on various academic topics and respond to questions.	K2
			C209.2	Converse effectively with the use of conversation starters and discourse markers.	K6
			C209.3	Listen and respond to various academic dialogues and discussions	K2
			C209.4	Participate confidently and appropriately in informal and formal conversations and group discussions.	K6
			C209.5	Use a range of presentation tools like PPT, Videos, and Charts etc. to make an engaging presentation.	K6



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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level
1.	II/IV	MA8451- Probability and Random Processes	C210.1 Identify the functions of discrete and continuous random variables, moments and moment generating function	K1
			C210.2 Solve problems in marginal conditional distribution, using the concepts of correlation, regressions and transformation of two dimensional random variables	K3
			C210.3 Determine the process is either SSS or WSS, find the TPM of Markov chain and its classifications.	K2
			C210.4 Explain the correlation and spectral densities.	K2
			C210.5 Solve the linear system and compute the linear time invariant inputs.	K3
2.	II/IV	EC8452- Electronic Circuits II	C211.1 Explain the concepts of feedback amplifiers	K1
			C211.2 Classify the various types of oscillators.	K3
			C211.3 Design different types of tuned amplifiers and analyze its performance.	K5
			C211.4 Discuss wave shaping circuits and multivibrators	K3
			C211.5 To study about Power amplifiers, Power MOSFET, MOSFET, buck boost er and DC-DC converter	K2
3.	II/IV	EC8491 Communication Theory	C212.1 Design AM communication systems	K2
			C212.2 Design Angle modulated communication systems	K2
			C212.3 Apply the concepts of Random Process to the design of Communication systems	K3



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			C212.4	Analyze the noise performance of AM and FM systems	K4
			C212.5	Gain knowledge in sampling and quantization	K4
4.	II/IV	EC8451 Electromagnetic Fields	C213.1	Basic vector algebra concepts related to electromagnetic model in different co-ordinate system.	K2
			C213.2	Electric field, potential, energy density and their applications.	K2
			C213.3	Magnetic field, potential, energy density, forces, torques and their applications.	K2
			C213.4	Analyze the relation between electric fields and magnetic fields using Maxwell's equations.	K4
			C213.5	Wave propagation in lossless and in lossy media	K2
5.	II/IV	EC8453 Linear Integrated Circuits	C214.1	Fundamentals of Opamp and also AC and DC Performance	K3
			C214.2	Design the linear and non linear applications of op-amps.	K3
			C214.3	Analyze the applications using analog multiplier and PLL	K4
			C214.4	Conversion of ADC and DAC using op-amps.	K6
			C214.5	Analyze the Special Functions ICs	K4
6.	II/IV	GE8291 Environmental Science and Engineering	C215.1	Summarize the values, threats, conservation of biodiversity and ecosystems.	K2
			C215.2	Discuss the sources, effects, control measures of different types of pollution, and solid waste management.	K1
			C215.3	Associate the effects of exploitation of Natural resources on environment	K3



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			C215.4	Summarize the water conservation methods and various environmental acts for environmental sustainability	K2
			C215.5	Discuss scientific, technological, economic and social solutions to environmental problems	K1
7.	II/IV	EC8461 Circuits Design and Simulation Laboratory	C216.1	Design and Analyze the various types of feedback amplifiers	K4
			C216.2	Design and Analyze Oscillator and Tuned Amplifier	K6
			C216.3	Design and Analyze Wave-shaping circuits	K6
			C216.4	Model the different Multivibrator circuits	K3
			C216.5	Design and simulate feedback amplifiers, oscillators, tuned amplifiers, wave-shaping circuits and multivibrators using SPICE Tool	K6
8.	II/IV	EC8462 Linear Integrated Circuits Laboratory	C217.1	Design oscillators and amplifiers using operational amplifiers	K6
			C217.2	Design filters using Opamp and perform experiment on frequency response.	K6
			C217.3	Analyse the working of PLL and use PLL as frequency multiplier.	K4
			C217.4	Design DC power supply using ICs	K6
			C217.5	Analyse the performance of oscillators and multivibrators using SPICE	K4

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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level
1.	III/V	EC8501 Digital	C301.1 Design PCM systems	K2



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		Communication	C301.2	Design and implement base band transmission schemes	K2
			C301.3	Design and implement band pass signaling schemes	K2
			C301.4	Analyze the spectral characteristics of band pass signaling schemes and their noise performance	K3
			C301.5	Design error control coding schemes	K4
2.	III/V	EC8553 Discrete-Time Signal Processing	C302.1	Apply DFT for the analysis of digital signals and systems	K3
			C302.2	Design IIR filters	K6
			C302.3	Design FIR filters	K6
			C302.4	Analyze the effects of finite precision representation on digital filters	K4
			C302.5	Study Digital signal Processors	K2
3.	III/V	EC8552 Computer Architecture and Organization	C303.1	Describe data representation, instruction formats and the operation of a digital computer	K3
			C303.2	Illustrate the fixed point and floating-point arithmetic for ALU operation	K3
			C303.3	Discuss about implementation schemes of control unit and pipeline performance	K5
			C303.4	Explain the concept of various memories, interfacing and organization of multiple processors	K2
			C303.5	Discuss parallel processing technique and unconventional architectures	K2
4.	III/V	EC8551 Communication Networks	C304.1	Describe the Internet architecture and link layer services	K1
			C304.2	Compare various media access and internetworking protocols	K5



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			C304.3	Apply various routing protocols and algorithms for a given network along with IP addresses	K3
			C304.4	Demonstrate the flow of information from one process to another process in the network	K3
			C304.5	Summarize the various Application requirements	K6
5.	III/V	EC8073 Medical Electronics	C305.1	Human body electro- physiological parameters and recording of bio-potentials	K1
			C305.2	Comprehend the non-electrical physiological parameters and their measurement – body temperature, blood pressure, pulse, blood cell count, blood flow meter etc	K2
			C305.3	Interpret the various assist devices used in the hospitals viz. pacemakers, defibrillators, dialyzers and ventilators	K4
			C305.4	Comprehend physical medicine methods eg. ultrasonic, shortwave, microwave surgical diathermies , and bio-telemetry principles and methods	K2
			C305.5	Recent trends in medical instrumentation	K2
6.	III/V	OMD551 Basic of Biomedical Instrumentation	C306.1	Learn the different bio potential and its propagation.	K2
			C306.2	get Familiarize the different electrode placement for various physiological recording	K4
			C306.3	design bio amplifier for various physiological recording	F4
			C306.4	various technique non electrical physiological measurements	K2
			C306.5	physiological measurements CO5: Understand	K2



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7.	III/V	EC8562 Digital Signal Processing Laboratory	C307.1	Analyze the various types of continuous signal and discrete signal.	K4
			C307.2	Demonstrate their abilities towards DSP processor based implementation of DSP system.	K2
			C307.3	Demonstrate the continuous and discrete signals using FFT algorithm.	K2
			C307.4	Analyze Finite word length effect on DSP systems.	K4
			C307.5	Construct an adaptive filters for various applications of DSP.	K3
8.	III/V	EC8561 Communication Systems Laboratory	C308.1	Simulate end-to-end Communication Link	K4
			C308.2	Demonstrate their knowledge in base band signaling schemes through implementation of FSK, PSK and DPSK	K5
			C308.3	Apply various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of communication system	K6
			C308.4	To implement Equalization algorithms and Error control coding schemes	K4
			C308.5	Simulate & validate the various functional modules of a communication system	K4
9.	III/V	EC8563 Communication Networks Laboratory	C309.1	Perform client-server communication between two desktop computers using Socket Programming.	K3
			C309.2	Implement the different protocols.	K6
			C309.3	Simulate various network topologies like Star, Bus and Ring.	K2
			C309.4	Implement and compare the various routing	K6



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			algorithms	
		C309.5	5 Simulate the algorithms with the help of Network Simulator tool	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level
1.	III/VI	EC8691 Microprocessors and Microcontrollers	C310.1 Architecture of 8086 microprocessor	K1
			C310.2 Execute programs based on 8086 microprocessor.	K1
			C310.3 Design Memory Interfacing circuits.	K6
			C310.4 Design and interface I/O circuits.	K6
			C310.5 Design and implement 8051 microcontroller based systems.	K6
2.	III/VI	EC8095 VLSI Design	C311.1 knowledge of digital building blocks using MOS transistor.	K2
			C311.2 design and construct combinational MOS circuits and power strategies.	K6
			C311.3 design and construct Sequential Circuits and Timing systems.	K6
			C311.4 design arithmetic building blocks and memory subsystems.	K6
			C311.5 apply the knowledge and implement FPGA design flow and testing.	K4
3.	III/VI	EC8652 Wireless Communication	C312.1 Characteristic of wireless channel	K2
			C312.2 Design of a cellular system	K4
			C312.3 Various digital signaling techniques and multipath mitigation techniques	K4



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			C312.4	Concepts of multiple antenna techniques	K2
			C312.5	Identify suitable signaling and multipath mitigation techniques for the wireless channel and system under consideration	K3
4.	III/VI	MG8591 Principles of Management	C313.1	Enable the students to study the evolution of Management,	K2
			C313.2	study the functions and principles of management	K4
			C313.3	learn the application of the principles in an organization .	K5
			C313.4	able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling	K5
			C313.5	same basic knowledge on international aspect of managemen	K2
5.	III/VI	EC8651 Transmission Lines and RF Systems	C314.1	Explain the characteristics of transmission lines and its losses.	K2
			C314.2	Explain the measurements of power, impedance, VSWR and wavelength	K2
			C314.3	Analyze impedance matching by stubs using smith charts.	K3
			C314.4	Analyze the characteristics of TE and TM waves.	K3
			C314.5	Design a RF transceiver system for wireless communication	K4
6.	III/VI	EC8004 Wireless Networks	C315.1	Conversant with the latest 3G/4G networks and its architecture	K2
			C315.2	Study about mobile network layer	K2
			C315.3	Design and implement wireless network environment for any application using latest wireless protocols and standards	K6



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			C315.4	Ability to select the suitable network depending on the availability and requirement	K4
			C315.5	Implement different type of applications for smart phones and mobile devices with latest network strategies	K5
7.	III/VI	EC8681 Microprocessors and Microcontrollers Laboratory	C316.1	Write ALP Programmes for fixed and Floating Point and Arithmetic operations	K6
			C316.2	Interface different I/Os with processor	K4
			C316.3	Generate waveforms using Microprocessors	K6
			C316.4	Execute Programs in 8051	K6
			C316.5	Explain the difference between simulator and Emulator	K2
8.	III/VI	EC8661 VLSI Design Laboratory	C317.1	Write HDL code for basic as well as advanced digital integrated circuit	K6
			C317.2	Design the logic modules into FPGA Boards	K5
			C317.3	Design and Synthesize Place and Route the digital IPs	K4
			C317.4	Design, Simulate and Extract the layouts of Digital IC Blocks using EDA Tools	K4
			C317.5	Design, Simulate and Extract the layouts of Analog IC Blocks using EDA Tools	K4
9.	III/VI	EC8611 Technical Seminar	C318.1	Research papers for understanding of a new field, in the absence of a textbook , to summarise and review them.	K4
			C318.2	Identify promising new directions of various cutting edge technologies	K4
			C318.3	Impart skills in preparing detailed report describing the project and	K4



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			C318.4	To effectively communicate by making an oral presentation before an evaluation committee	K3
			C318.5	Inculcate the ability to synthesize the results of the detailed analytical studies conducted	K4
10.	III/VI	HS8581 Professional Communication	C319.1	Summarize various skills such as Soft Skills, Hard skills, employability and career Skills and demonstrate values such as Time Management and general awareness of current affairs.	K2
			C319.2	Demonstrate oneself before the audience by making effective presentations on introducing oneself, answering questions and visual presenting.	K3
			C319.3	Demonstrate oneself by participating in group discussions, brainstorming sessions and question sessions. Develop activities to improve GD Skills	K6
			C319.4	Develop interview skills so as to be successful in them.	K6
			C319.5	Develop adequate Soft Skills required for the workplace and long-term career.	K6

PROGRAMME: ELECTRONICS AND COMMUNICATION ENGG	DEGREE: UG	A.Y: 2020-2021	SEMESTER: 07
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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
1.	IV/VII	EC8701 Antennas and Microwave Engineering	C401.1	To enable the student to understand the basic principles in antenna and microwave system design.	K2
			C401.2	To enhance the student knowledge in the area of various antennas.	K4
			C401.3	To enhance the student knowledge in the	K4



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			area of antenna arrays	
			To enhance the student knowledge in the area of microwave passive and active components	K4
			To design a microwave system for a given specifications and its application.	K6
2.	IV/VII	EC8702 Ad hoc and Wireless Sensor Networks	Know the basics of Ad hoc networks and Wireless Sensor Networks	K2
			Apply this knowledge to identify the suitable routing algorithm based on the network and user requirement	K3
			Apply the knowledge to identify appropriate physical and MAC layer protocols	K3
			Understand the transport layer and security issues possible in Ad hoc and sensor networks	K2
			Be familiar with the OS used in Wireless Sensor Networks and build basic modules	K5
3.	IV/VII	EC8751 Optical Communication	Elements of optical fiber communication and types of fiber fabrication techniques	K2
			Various kind of losses, distortion and degradation associated with optical fiber cable	K2
			Various optical sources, optical detectors and fiber joints.	K5
			Receiver operation and different fiber parameter measurements.	K3
			Interpret the optical networks in real time application.	K4
4.	IV/VII	EC8791	C404.1 Outline the concepts of embedded systems	K2



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		Embedded and Real Time Systems	C404.2	Describe the architecture and programming of ARM processor	K4
			C404.3	Explain the basic concepts of embedded programming	K4
			C404.4	Explain the basic concepts of real time operating system design	K4
			C404.5	To enhance the Model real-time applications using embedded-system concepts.	K4
5.	IV/VII	EC8092 Advanced Wireless Communication	C405.1	Importance of improving capacity of wireless channel using MIMO	K2
			C405.2	Channel impairment mitigation using space-time block and Trellis codes	K4
			C405.3	Advanced MIMO system like layered space time codes, MU-MIMO System and MIMO-OFDM systems	K5
			C405.4	Comprehend and appreciate the significance and role of this course in the present contemporary world	K3
			C405.5	Appreciate the various methods for improving the data rate of wireless communication system	K5
6.	IV/VII	OIC751 Transducer Engineering	C406.1	how physical quantities are measured and how they are converted to electrical or other forms.	K2
			C406.2	apply an adequate knowledge in resistance, transducers.	K3
			C406.3	develop the knowledge of inductance and capacitance transducers	K5
			C406.4	study the characteristics of Transducers	K2
			C406.5	knowledge on various types of transducers	K3



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7.	IV/VII	EC8711 Embedded Laboratory	C407.1	Write programs in ARM for a specific Application	K3
			C407.2	Interface memory, A/D and D/A convertors with ARM system	K4
			C407.3	Analyze the performance of interrupt	K4
			C407.4	Write program for interfacing keyboard, display, motor and sensor.	K3
			C407.5	Formulate a mini project using embedded system	K6
8.	IV/VII	EC8761 Advanced Communication Laboratory	C408.1	working principle of optical sources, detector, fibers	K2
			C408.2	Analyze the performance of simple optical link by measurement of losses and Analyzing the mode characteristics of fiber	K5
			C408.3	Analyze the Eye Pattern, Pulse broadening of optical fiber and the impact on BER	K5
			C408.4	Estimate the Wireless Channel Characteristics and Analyze the performance of Wireless Communication System	K5
			C408.5	Intricacies in Microwave System design	K2



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COURSE OUT COME FOR REGULATION - 2013

PROGRAMME: ELECTRICAL AND ELECTRONICS ENGG	DEGREE: UG	A.Y: 2016-2017	SEMESTER: 01
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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level
10.	I / I	HS6151 - TECHNICAL ENGLISH I	C101.1 Apply the collaborative and social aspects of research and writing processes	K2
			C101.2 Comprehend that research and writing is a series of data and information from sources that vary in content.	K2
			C101.3 Use appropriate technologies to organize, present and communicate information to address a range of audiences, purposes and genres.	K2
			C101.4 Explain the relationships among language, knowledge and power including social, cultural, historical and economic issues related to information, writing and technology.	K3
			C101.5 Demonstrate the role of a variety of technologies/ media in accessing, retrieving, managing and communicating information.	K3
11.	I / I	MA6151 - MATHEMATICS I	C102.1 Find the eigen values and eigen vectors to diagonalise and reduce a matrix to quadratic form	K3
			C102.2 Learn infinite series and their convergence and acquire the knowledge of with limitations of using infinite series approximations for solutions arising in mathematical modelling.	K3
			C102.3 Understand and characterize phenomena which evolve around circle of curvature and envelope.	K3
			C102.4 Students will have the idea of extension of a function of a one variable to several	K3



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				variables. Multivariable functions of real variables arise inevitable in engineering.	
			C102.5	The student will be exposed to double and triple integration so that they can handle integrals of higher order which are applied in engineering field.	K3
12.	I / I	PH6151 - ENGINEERING PHYSICS I	C103.1	Describe the crystal structures and various crystal growth techniques.	K2
			C103.2	Analyze the elastic nature of materials and thermal behaviour of materials.	K2
			C103.3	Apply the knowledge of quantum mechanics and classical mechanics in addressing the problems related to science and technology.	K2
			C103.4	Apply the knowledge about designing an auditorium with good acoustical properties and make use of Ultrasonics and its applications in various fields.	K2
			C103.5	Illustrate the advantages of optical communication using LASER.	K2
13.	I / I	CY6151 - ENGINEERING CHEMISTRY I	C104.1	Classify the polymers and their utility in the industries and describe the techniques of polymerization & properties of polymers.	K2
			C104.2	Relate various thermodynamic functions such as enthalpy, entropy, free energy and their importance and equilibrium constant and its significance.	K2
			C104.3	Characterize the photophysical processes such as fluorescence and phosphorescence and various components of UV & IR spectrophotometer.	K2
			C104.4	Analyze the phase transitions of one component and two component systems and the types of alloys and their application in industries.	K2



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			C104.5	Describe the synthesis, characteristics and the Applications of nano materials.	K2
14.	I / I	GE6151- COMPUTER PROGRAMMING	C105.1	Explain the basic organization of computers, the number systems and write the pseudo code for algorithms and flow chart.	K2
			C105.2	Apply different looping structures to solve simple scientific and statistical problems	K3
			C105.3	Design 'C' programs for arrays and strings.	K3
			C105.4	Demonstrate the usage of Dynamic memory allocation and pointer variables	K3
			C105.5	Illustrate the concepts of structures and unions with example programs	K3
15.	I / I	GE6152- ENGINEERING GRAPHICS	C106.1	Construct the conic sections and special curves and outline their practical applications and sketch the orthographic views from pictorial views and models	K2
			C106.2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.	K3
			C106.3	Draw the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures	K3
			C106.4	Practice the sectional views of solids like cube, prisms, pyramids, cylinders & cones and extend its lateral surfaces.	K3
			C106.5	Apply the principles of isometric projection and perspective projection of simple solids and truncated prisms, pyramids, cone and cylinders	K3
16.	I / I	GE6161- COMPUTER PRACTICES LABORATORY	C107.1	Understand the usage of office automation tools.	K2
			C107.2	Apply good programming design methods for program development.	K3



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			C107.3	Design and implement the C programs for simple applications	K3
			C107.4	Develop and implement the recursive programs.	K3
			C107.5	Implement the C program with the help of Structures and Union	K5
17.	I / I	GE6162 - ENGINEERING PRACTICES LABORATORY	C108.1	Demonstrate wiring for a simple residential	K2
			C108.2	Calculate the different Electrical quantities, measure the energy consumption	K3
			C108.3	Measure the resistance to earth of an electrical Equipment, analyze AC signal parameters using CRO.	K3
			C108.4	Verify the Truth tables of Logic gates AND,	K3
			C108.5	Develop soldering in a PCB, measure ripple	K3
18.	I / I	GE6163 - PHYSICS AND CHEMISTRY LABORATORY - I	C109.1	The hands on exercises undergone by the students will help them to apply physics principles of optics and thermal physics to evaluate engineering properties of materials.	K3
			C109.2	Perform the quantitative chemical analysis of chloride and dissolved oxygen.	K3
			C109.3	Determine the amount of acids by using the instruments of conductivity meter and pH	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
9.	I / II	HS6251 - TECHNICAL ENGLISH II	C110.1	Speak clearly, confidently, comprehensibly, and communicate with one or many listeners using appropriate communicative strategies	K2
			C110.2	Write cohesively and coherently and flawlessly avoiding grammatical errors, using a wide vocabulary range, organizing their ideas logically on a topic.	K2
			C110.3	Read different genres of texts adopting various reading strategies.	K2



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			C110.4	listen/view and comprehend different spoken discourses/excerpts in different accents	K3
			C110.5	Recognize, understand, and analyze the context within which language, information, and knowledge are produced, managed, organized, and disseminated	K3
10.	I / II	MA6251 - MATHEMATICS II	C111.1	The students were imbibed with techniques in solving ordinary differential equations that model most of the engineering problems .	K3
			C111.2	The student were acquainted with the concepts of vector calculus-like Gradient, Divergence, Curl, Directional derivative, Irrotational vector and Solenoidal vector. The course gives an understanding of Vector integration, needed for problems in all engineering disciplines.	K3
			C111.3	To make the students to appreciate the purpose of using transforms to create new domain in which it is easier to handle the problem that is being investigated.	K3
			C111.4	To develop an understanding of the standard techniques of complex variable and mapping so as to enable the student to apply them with confidence, in application areas such as heat conduction, elasticity, fluid dynamics and flow of electric current .	K3
			C111.5	The student will be exposed to the concept of Cauchy's integral theorem, Taylor and Laurent expansions, Singular points, Application of residue theorem to evaluate complex integrals.	K3
11.	I / II	PH6251 - ENGINEERING PHYSICS II	C112.1	Illustrate classical and quantum free electron theory and calculate carrier concentration in metals.	K2



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			C112.2	Describe the carrier concentration in semi conductors and identify the p-type and n-type semi conductor using hall effect.	K2
			C112.3	Classify the different types of magnetic and super conducting materials.	K2
			C112.4	Explain the dielectrics, types of polarization, losses and breakdown.	K2
			C112.5	Discuss the properties, preparation and applications of metallic alloys, SMA, nano materials, NLO, Bio-materials.	K2
12.	I / II	CY6251 - ENGINEERING CHEMISTRY II	C113.1	Comprehend the importance of water technology in the purification of water and its domestic and industrial applications	K2
			C113.2	Explain the principles of electrochemistry, the factors affecting corrosion and The prevention of corrosion.	K3
			C113.3	Understand the fundamentals of different alternative sources of energy and the generation processes.	K2
			C113.4	Acquire the knowledge on different types of engineering materials and their applications.	K2
			C113.5	Learn the know-how of industrial techniques of petroleum processing and the determination of calorific values and combustion parameters.	K2
13.	I / II	GE6251- BASIC CIVIL AND MECHANICAL ENGINEERING	C114.1	Explain the working principles of various power plants and differentiate the pumps and turbines.	K1
			C114.2	State the functions of IC engine and classify the various types of boilers.	K2
			C114.3	Apply the principles of vapour absorption and compression systems and Explain the Operation of air conditioner	K2



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			C114.4	Apply the principles of surveying and use various measurements for surveying and study about various engineering materials and leveling instruments.	K2
			C114.5	Classify the types of bridges, foundation, floorings, roofs, plasters and R.C.C structural members and state the purpose of dam.	K2
14.	I / II	EE6201 - Circuit Theory	C115.1	Analyze circuits with ideal, independent, and controlled voltage and current sources.	K3
			C115.2	Apply ohm's law, Kirchoff's laws, Network theorems to the analysis of AC and DC circuits.	K3
			C115.3	Solve first and second order AC and DC Circuits for Steady – State and transient response in the time domain and frequency domain.	K3
			C115.4	Evaluate the response of the coupled circuits and two port networks	K3
			C115.5	Estimate the power consumed by the three phase balanced and unbalanced circuits.	K2
15.	I / II	GE6262 - Physics and Chemistry Laboratory - II	C116.1	Appraise the Young's modulus of the beam by uniform and non uniform bending method, the moment of inertia and Rigidity Modulus for thin wire using Torsion Pendulum.	K4
			C116.2	Use Poiseuille's method for determining the coefficient of viscosity of the liquid.	K3
			C116.3	Evaluate the refractive index of spectral lines for determining the dispersive power of a prism	K4
			C116.4	Determine the type, amount of alkalinity , hardness in a given water sample and evaluate the amount of copper using EDTA	K4



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				method	
			C116.5	Examine the potentiometric redox titration and Conductometric precipitation titration.	K3
8.	I/II	GE6263 – Computer Programming Laboratory	C117.1	Know the Structure of Unix Operating System and practice basic commands in Unix Shell	K2
			C117.2	Devise solutions for simple problems using conditional statements and loops in Unix shell	K3
			C117.3	Illustrate the concepts of Dynamic Memory Allocation, Pointers and File Allocation in C programming under Unix	K2
9.	I / II	EE6211 – Electric Circuits Laboratory	C118.1	Apply KCL, KVL and Network Theorems to Simple and Complex circuits.	K3
			C118.2	Demonstrate the working of CRO and Determine the Time Constant of RC circuit.	K4
			C118.3	Determine frequency response of RLC circuits and Use MATLAB to simulate series, parallel resonant circuit, low pass, high pass filter.	K3
			C118.4	Use MATLAB to simulate three phase balanced, unbalanced circuit and Measure power in three phase circuits by two wattmeter methods.	K3
			C118.5	Determine h-parameters of Two port networks and Calibrate single phase energy meter.	K3

PROGRAMME: ELECTRICAL AND ELECTRONICS ENGG	DEGREE: UG	A.Y: 2017-2018	SEMESTER: 03
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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level
9.	II / III	MA6351 - Transforms and	C201.1 Solve Linear Partial differential equations of first and second order.	K3



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		Partial Differential Equations	C201.2	Associate the concepts of Fourier series expansion for even and odd functions.	K3
			C201.3	Apply the concepts of Fourier series in solving boundary value problems.	K3
			C201.4	Discuss the Fourier transform, Fourier Sine and Cosine transform techniques.	K3
			C201.5	Discuss the concepts of Z-Transform techniques for discrete time systems.	K3
10.	I / I	EE6301 – Digital Logic Circuits	C202.1	Solve the problems in number systems and can examine the important characteristics of the digital logic family circuits.	K3
			C202.2	Develop combinational logic circuits with minimal hardware complexity.	K2
			C202.3	Construct various synchronous and asynchronous circuits with its application.	K3
			C202.4	Apply the concepts of asynchronous sequential circuits and PLAs.	K2
			C202.5	Perform a software platform for numerous digital circuits using VHDL.	K3
11.	I / I	EE6302 – Electromagnetic Theory	C203.1	Explain the different coordinate systems, and apply Gauss’s law	K2
			C203.2	Interpret the concepts of Electrostatic fields and apply boundary conditions on Electrostatic field	K2
			C203.3	Develop concepts of Magnetostatic fields and apply boundary conditions.	K2
			C203.4	Analyze the Maxwell's equations for electromagnetic fields	K2
			C203.5	Derive Electromagnetic wave equation and apply the Poynting expression.	K2
12.	I / I	GE6351 –	C204.1	Understand the importance of public awareness on environment and nature of	K2



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		Environmental Science and Engineering		biodiversity.	
			C204.2	Know about the various causes, effect and control measures of environmental pollution.	K2
			C204.3	Comprehend the human development that leads to environmental disasters, the value of natural resources and their conservation.	K2
			C204.4	Recognize the value of public participation in environmental protection, Environmental Management and Legislation Acts and sustainable development.	K2
			C204.5	Learn the problems related to population and their remedial measures.	K2
13.	I / I	EC6202- Electronic Devices and Circuits	C205.1	Draw the characteristics of various types of Diodes, design half and full wave Rectifiers.	K2
			C205.2	Compare the different configurations of BJT, draw its characteristics.	K3
			C205.3	Calculate the FET parameters, draw its frequency response characteristics.	K2
			C205.4	Design Amplifier circuits and draw frequency response characteristics	K3
			C205.5	Develop the parameters of feedback amplifier circuit, describe different types of oscillator circuits.	K2
14.	I / I	EE6303 - Linear Integrated Circuits and Applications	C206.1	Discuss the fabrication process of different IC's.	K2
			C206.2	Determine the DC and AC characteristics of op-amps.	K2
			C206.3	Construct linear and nonlinear applications of op-amps.	K3
			C206.4	Examine the operation of special function IC's.	K2



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			C206.5	Explain the operation of application IC's like voltage regulator and switching regulator.	K3
15.	I / I	EC6361- Electronics Laboratory	C207.1	Find the breakdown voltage of Diode, draw the V-I characteristics of BJT.	K2
			C207.2	Draw the equivalent circuit of JFET and develop the saw tooth waveform generation using UJT	K3
			C207.3	Design the Common Emitter amplifier and draw the V-I characteristics of photo diode & photo transistor	K3
			C207.4	Compare the theoretical and practical frequency value of oscillators and measure the ripple factor of rectifier	K2
			C207.5	Show the frequency response of filters, design the multivibrators	K2
16.	I / I	EE6311 – Linear and Digital Integrated Circuits Laboratory	C208.1	Solve boolean functions and develop adder, subtractor circuits.	K2
			C208.2	Use various code converters to understand the importance of code conversion	K2
			C208.3	Examine the operation of 4 - bit shift registers.	K2
			C208.4	Acquire knowledge on application of Op-Amp in various applications	K3
			C208.5	Construct counters using specific counter IC.	K3

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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
10.	II / IV	MA6459- Numerical Methods	C209.1	Determine the solution of algebraic and transcendental system of linear equations	K3
			C209.2	To interpolate the values of unknown	K3



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			functions using Newton's Formula	
			C209.3 Estimate the numerical values of the derivatives and integrals of unknown function	K3
			C209.4 Solve first and second order initial value problem	K3
			C209.5 Solve Numerically boundary value problem	K3
11.	II / IV	EE6401- Electrical Machines - I	C210.1 Apply techniques of magnetic-circuit analysis and introduce magnetic materials.	K3
			C210.2 Explore the operation and performance of single and three phase transformer.	K3
			C210.3 Demonstrate the concepts of electromechanical energy conversion and understand the concepts in rotating machines.	K2
			C210.4 Explain the working principles and performance of DC generator.	K2
			C210.5 Illustrate the working principles, starting, speed control and performance of DC motor.	K3
12.	II / IV	CS6456- Object Oriented Programming	C211.1 Explain the key attributes of C++ like native types and statements and implement ADT.	K2
			C211.2 Develop object oriented programs using polymorphism and data abstraction concepts.	K3
			C211.3 Design templates, construct generics and to handle exceptions.	K6
			C211.4 Develop the concept of java in creating classes, objects using arrays and control statements.	K3
			C211.5 Create packages, handle exceptions and develop multi-threaded programs	K3
13.	II / IV	EE6402 -	C212.1 Identify the basic elements of the electric power system and describe the role played by	K2



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		Transmission and Distribution		each element.	
			C212.2	Derive the expressions for the computation of transmission line parameters.	K3
			C212.3	Analyze the Performance of Transmission Lines.	K2
			C212.4	Solve the voltage distribution in insulator strings, cables and methods to improve the same.	K2
			C212.5	Design overhead lines both Mechanical and electrical aspects using Sag calculation.	K2
14.	II / IV	EE6403 - Discrete Time Systems and Signal Processing	C213.1	Analyze the properties of signals and systems.	K2
			C213.2	Analyze discrete time LTI systems using Z transform and DTFT.	K3
			C213.3	Apply the concepts of DFT and FFT to solve Electrical Engineering Problems.	K3
			C213.4	Design FIR and IIR digital filters.	K3
			C213.5	Describe the concepts of DSP Processors	K2
15.	II / IV	EE6404 - Measurements and Instrumentation	C214.1	Determine various types of errors present in measurements.	K2
			C214.2	Explain the various types of electrical and electronics instruments.	K2
			C214.3	Compare a suitable measuring instrument used for measuring different electrical quantities.	K2
			C214.4	Explain the operating principles of different storage and display devices.	K2
			C214.5	Classify and select transducer for application in an electrical system.	K2
16.	II / IV	CS6461 – object Oriented	C215.1	Design C++ programs using functions, classes with objects, member functions and constructors.	K3



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		Programming Laboratory	C215.2	Develop operator and function overloading and run time polymorphism using C++.	K2
			C215.3	Develop file handling techniques in C++ for sequential and random access also use Java code for strings.	K2
			C215.4	Construct packages and interfaces in Java.	K2
			C215.5	Create threads in Java and handle predefined and user defined exceptions	K2
17.	II / IV	EE6411 - Electrical Machines Laboratory - I	C216.1	Determine the performance of various D.C. Generators and understand the applications of it to power system	K3
			C216.2	Troubleshoot the operation of various D.C. Generators	K2
			C216.3	Draw the performance characteristics of various D.C. Motors and understand the applications of it to power system	K2
			C216.4	Predetermine the performance of DC motor by conducting suitable tests	K2
			C216.5	Calculate the voltage regulation and predetermine the performance of the single phase and three phase transformer	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
9.	III/V	EE6501 Power System Analysis	C301.1	Explain the operation of various power system components, Draw the per unit diagram and form the Y-bus matrix for the power system	K2
			C301.2	Develop the power flow equation for power system problems and Determine the line flows using G-S, N-R and F-D method	K3



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			C301.3	Illustrate the types of faults and their effects, Calculate the fault currents for symmetrical fault condition.	K3
			C301.4	Draw the sequence network for L-G, L-L and L-L-G fault of the power system and Determine the fault current incase of L-G, L-L and D-L-G fault	K3
			C301.5	Explain the concept of power system stability, Analyze the stability of single machine infinite bus system.	K3
10.	III/V	EE6502 - Microprocessor and Microcontroller	C302.1	Explain the function of 8085 microprocessor and memory organization.	K2
			C302.2	Write a program using 8085 microprocessor instructions	K3
			C302.3	Elaborate the operation of 8051 microcontroller architecture	K2
			C302.4	Describe the commonly used peripherals and interfacing.	K2
			C302.5	Develop an applications using 8051 microcontroller.	K3
11.	III/V	ME6701 - Power Plant Engineering	C303.1	Draw the layout of modern coal power plant and list the various components used in thermal power plant.	K1
			C303.2	Identify the components of diesel and gas turbine power plants and construct the integrated gasifier based combined cycle systems.	K2
			C303.3	Describe the layout of subsystems of various nuclear power plants and express safety measures for nuclear power plants.	K2
			C303.4	Distinguish different hydroelectric power plants and construct various renewable energy power plants such as wind, tidal, PV, solar, thermal, geo thermal, biogas	K2



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				and fuel cell.	
			C303.5	Calculate the per unit cost of electrical energy based on Power tariff, load factor, demand factor, diversity factor and plant safety factor.	K2
12.	III/V	EE6503 – Power Electronics	C304.1	Explain the basic operation and the characteristics of various Power Electronics devices like SCR, TRIAC, DIAC, IGBT, GTO etc.	K2
			C304.2	Apply the knowledge of aforesaid Power semiconductor devices for designing various applications related to rectifiers.	K2
			C304.3	Classify the chopper circuits and explain their applications in various fields	K2
			C304.4	Understand and analyze various inverter circuits and PWM techniques.	K2
			C304.5	Explore the single phase and three AC voltage-controllers and their applications	K2
13.	III/V	EE6504 – Electrical Machines II	C305.1	Draw the constructional details and explain the performance of salient and non – salient type synchronous generators.	K5
			C305.2	Draw and explain the Principle of operation and performance of synchronous motor.	K2
			C305.3	Draw and describe the construction, principle of operation and performance of induction machines.	K2
			C305.4	Describe the starting and speed control of three-phase induction motors.	K1
			C305.5	Explain the construction, principle of operation and performance of single phase induction motors and special machines.	K2
14.	III/V	IC6501 - Control Systems	C306.1	Develop transfer function models of electrical systems and mechanical systems.	K2
			C306.2	Derive the time response of systems and	K4



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				analyse the behaviour of the system.	
			C306.3	Draw the frequency response of the system and describe the effect of compensation on frequency response.	K4
			C306.4	Apply the concepts of system stability to analyse performance of closed loop systems.	K4
			C306.5	Explain the basic concepts of state variable analysis of systems and evaluate the solution	K4
15.	III/V	EE6511 - Control and Instrumentation Laboratory	C307.1	Determine the characteristics of P, PI and PID controllers experimentally and analyze the stability of the control system by (i) Bode plot (ii) Root Locus Plot and (iii) Nyquist plot using MATLAB.	K3
			C307.2	Compute the transfer function of a Field controlled DC motor experimentally and Design the Lag, Lead and Lag-Lead Compensators for the given specifications and hook up it using RC networks.	K3
			C307.3	Draw the transient response of Position Control system experimentally, Determine the Characteristics of Synchro-Transmitter-Receiver and Use the MATLAB for the Simulation of Control Systems.	K2
			C307.4	Calculate the unknown Capacitance, Inductance and Resistance using AC and DC Bridges experimentally and Analyze the Dynamics of Sensors/Transducers (a) Temperature (b) Pressure (c) Displacement (d) Optical (e) Strain and (f) Flow.	K6
			C307.5	Measure the Power and Energy experimentally; Analyze the Signal Conditioning units (a) Instrumentation Amplifier (b) ADC and DACs and Use the MATLAB for Process Simulation.	K4
16.	III/V	GE6674 -	C308.1	Identify and interpret visuals, communicate in formal and informal conversations, give	K2



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		Communication and Soft Skills- Laboratory Based		presentations, and participate in GD.	
			C308.2	Explain reading comprehension passages of higher levels, draft Resume, cover letter, reports, emails, and write blogs.	K3
			C308.3	Differentiate between IELTS & TOEFL and take placement oriented verbal ability tests.	K3
			C308.4	Demonstrate appropriate verbal, non-verbal and paralinguistic skills while attending job interviews.	K3
			C308.5	Show leadership traits, team skills and essential soft skills and efficiency to excel as a professional.	K2
17.	III/V	EE6512 - Electrical Machines Laboratory - II	C309.1	Determine the voltage regulation of three phase alternator in different methods and compare the results	K3
			C309.2	Determine the voltage regulation of salient pole synchronous machine and find negative & zero sequence components	K3
			C309.3	Explain the V and inverted V characteristics of three phase synchronous machine at different load condition	K2
			C309.4	Determine and pre determine performance characteristics of three phase induction motor	K6
			C309.5	Determine	
			C309.5	Determine and pre determine performance characteristics of single phase induction motor	K4



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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
10.	III/VI	EC6651 - Communication Engineering	C310.1	Explain the operation of Amplitude Modulation , draw the frequency spectrum and vector representation of AM	K2
			C310.2	Compare the different methods of QPSK, BFSK and GMSK	K4
			C310.3	Analyze how information is transmitted to receiver using the Huffman coding	K5
			C310.4	Discuss about the various types of multiple access techniques	K5
			C310.5	Distinguish between INTELSAT and INSAT	K2
11.	III/VI	EE6601 - Solid State Drives	C311.1	Explain the basics of dynamics and steady state stability of electric drive.	K2
			C311.2	Describe the operation of converter/chopper fed dc drive.	K4
			C311.3	Apply the control methods for the induction motor drives.	K2
			C311.4	Analyze the performance of synchronous motor drives.	K2
			C311.5	Design and apply the current and speed controllers for drives.	K6
12.	III/VI	EE6602 - Embedded Systems	C312.1	Analyze the basic build process of embedded systems, structural units in embedded processor and selection of processor and memory devices depending upon the applications.	K2
			C312.2	Classify the types of I/O device ports and buses and different interfaces for data transfer.	K1



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			C312.3	Model the Embedded Product Development Life Cycle (EDLC) by using different techniques like state machine model, sequential program model and concurrent model	K3
			C312.4	Analyze the basic concept of Real Time Operating Systems and plan to scheduling of different task and compare the features of different types of Real Time Operating Systems	K2
			C312.5	Apply the knowledge of programming concepts of Embedded Systems for various applications like Washing Machine automotive and Smart Card System applications	K1
13.	III/VI	EE6603 - Power System Operation and Control	C313.1	Demonstrate the basic concepts of power system operation and control and apply the concept of load forecasting to predict the future energy requirement.	K1
			C313.2	Construct the power-frequency controller to single area and two area systems.	K1
			C313.3	Employ the suitable control actions to maintain the voltage profile by controlling reactive power against various types of load.	K3
			C313.4	Schedule the generators in power system economically by means of unit commitment and economic dispatch solutions.	K1
			C313.5	Apply the concept of computer control of power system to improve the control of power system.	K1
14.	III/VI	EE6604 - Design of Electrical Machines	C314.1	Compare Electrical Engineering materials; determine heat dissipation due to Conduction, convection and radiation.	K2
			C314.2	Calculate mmf for slots and teeths, apparent flux density, main dimensions and winding	K5



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				details of DC machines.	
			C314.3	Design core, yoke, winding and cooling system of transformers.	K6
			C314.4	Develop output equation of AC machines, design stator and rotor of induction machines.	K6
			C314.5	Design stator and rotor of synchronous machines analyze their thermal behavior, design field systems for turbo alternators.	K6
15.	III/VI	EE6002 - Power System Transients	C315.1	Explore the source and effects of power system transients	K2
			C315.2	Explain the generation of switching transients and effects	K2
			C315.3	Explore the mechanism of lightning transients and lightning protection methods	K1
			C315.4	Analyze the travelling wave concepts	K2
			C315.5	Apply the travelling waves in integrated system	K2
16.	III/VI	EE6611 - Power Electronics and Drives Laboratory	C316.1	Draw the VI characteristics of SCR and generate the Gate Pulse using R, RC and UJT.	K4
			C316.2	Plot the characteristics of MOSFET and IGBT	K4
			C316.3	Simulate a single phase AC to DC half and fully controlled converter	K4
			C316.4	Draw the output response of step up and step down MOSFET based chopper and simulate a single phase IGBT based PWM inverter.	K4
17.	III/VI	EE6612 - Microprocessors and	C317.1	Apply the arithmetic operations, logic operations and sorting using 8085 microprocessor.	K4



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		Microcontrollers Laboratory	C317.2	Write a program for code conversion, finding the maximum and minimum numbers in a series.	K4
			C317.3	Analyze the operations of peripheral interfacing with 8085 microprocessor.	K4
			C317.4	Apply the arithmetic, logic operations and branching operation using 8051 microcontroller.	K5
			C317.5	Write a program for peripheral interfacing with 8051 microcontroller	K4
18.	III/VI	EE6613 - Presentation Skills and Technical Seminar	C318.1	Present seminar in the field of electrical and electronics engineering subjects studied.	K4
			C318.2	Solve objective type questions in the field of electrical and electronics engineering.	K4
			C318.3	Communicate effectively, the subjects learned in the form of seminar presentation	K4
			C318.4	Communicate effectively, the modern trends in the field of electrical and electronics engineering.	K5

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9.	IV/VII	EE6701 – High Voltage Engineering	C401.1	Identify the causes of over voltage and its effects in power system.	K2
			C401.2	Classify the breakdown Mechanisms in Solid, Liquid, gases and Composite dielectrics	K2
			C401.3	Design different type of Generating circuit for high voltage D.C and high voltage A.C	K2
			C401.4	Measure A.C and D.C high voltage and current using appropriate method	K2



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			C401.5	Test the transformer ,insulator , circuit breakers, surge diverters and cables also discuss the insulation coordination	K2
10.	IV/VII	EE6702 - Protection and Switchgear	C402.1	Analyze the knowledge on different protective schemes in power system.	K1
			C402.2	Explain various electromagnetic relays and its application	K2
			C402.3	Classify the protection scheme for various faults in motor, generator, transformer, bus bar, transmission line.	K2
			C402.4	Examine various static relays and numerical relays and its application.	K2
			C402.5	Describe concepts and principle of various circuit breakers.	K2
11.	IV/VII	EE6703 - Special Electrical Machines	C403.1	Explain the necessity to improve the saliency of synchronous reluctance motor and its characteristics	K2
			C403.2	Compare the various methods of excitation of different types of stepper motor and its driver circuits	K2
			C403.3	Describe the operation of switched reluctance motor with and without sensors	K2
			C403.4	Explain the electronic commutation of permanent magnet brushless D.C. motors and develop the torque equation	K2
			C403.5	Develop the expression for emf and torque of permanent magnet synchronous motors and discuss power controller for permanent magnet synchronous motors.	K3
12.	IV/VII	MG6851 - Principles of Management	C404.1	Explain the evolution of management and the functions and roles of managers.	K2
			C404.2	Exercise the different types of planning process and tools used for planning	K2



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			C404.3	Apply the concept of organization structures and the functions of human resource manager in a management system.	K2
			C404.4	Classify the different theories of motivation and leadership.	K2
			C404.5	Illustrate the fundamental elements of controlling	K2
13.	IV/VII	EI6703 - Fibre Optics and Laser Instruments	C405.1	Analyze the characteristics of optical fibres and working the light through the fibre	K2
			C405.2	Apply the gained knowledge of optical fibres and application of the fibre in industries for measurement system and units.	K2
			C405.3	Analyze the fundamentals concepts of laser operation and its characteristics of various types of lasers.	K2
			C405.4	Analyze the application of lasers in industrials for various units and working methods.	K2
			C405.5	Apply the level of laser in hologram and medical application.	K2
14.	IV/VII	EE6008 - Microcontroller Based System Design	C406.1	Describe the basic architecture of PIC16cxx and apply the instruction set for simple operations.	K2
			C406.2	Explain about the PIC micro controllers interrupts and write the interrupt programs	K2
			C406.3	Apply the program to interface I/O devices with controller like LCD, Keyboard, and Sensors etc.,	K2
			C406.4	Develop simple applications using ARM assembly language programs	K2
			C406.5	Analyze ARM Organization and ARM Coprocessor interface	K2
15.	IV/VII	EE6711 -	C407.1	Determine the bus impedance and	K1



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		Power System Simulation Laboratory		admittance matrices using C and MATLAB	
			C407.2	Apply numerical methods for solving load flow problems and verify using C and MATLAB	K2
			C407.3	Analyze small signal stability of Single Machine Infinite Bus (SMIB) system and draw the swing curve using AUPOWER Lab and MATLAB.	K2
			C407.4	Generate the coding for economic dispatch problems and load frequency dynamics problems using MATLAB.	K2
16.	IV/VII	EE6712 - Comprehension	C408.1	Describe the basic concepts of electrical and electronics subjects.	K1
			C408.2	Solve objective type questions in the field of electrical and electronics engineering	K2
			C408.3	Review, prepare and present technological developments	K2
			C408.4	Answer effectively during technical interviews.	K2

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6.	IV/VIII	EE6801 - Electric Energy Generation, Utilization and Conservation	C409.1	Evaluate tractive effort for the propulsion of train, name the traction motors, list the traction motor control, track equipment and collection gear.	K1
			C409.2	Categorize different light sources and design various illumination systems for the indoor lighting schemes, factory lighting, halls, outdoor lighting schemes, flood lighting, street lighting.	K2
			C409.3	Compare the different methods of electric heating and types of electric welding.	K2



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			C409.4	Estimate average solar radiation and illustrate the physical principles of the conversion of solar radiation into heat.	K5
			C409.5	Analyze aerodynamic forces acting on the blade and draw basic components of a WECS.	K4
7.	IV/VIII	EE6010 - High Voltage Direct Current Transmission	C410.1	Describe the concept, planning of DC power transmission and comparison with AC Power transmission	K1
			C410.2	Analyze HVDC converters	K4
			C410.3	Explain about HVDC control systems	K2
			C410.4	Analyze harmonics and design of filters.	K4
			C410.5	Analyse DC system under steady state	K4
8.	IV/VIII	GE6075 Professional Ethics in Engineering	C411.1	Apply ethics, morals and human values in society.	K2
			C411.2	Explain about engineering ethics.	K2
			C411.3	Realize the responsibilities of engineers as experimenters.	K2
			C411.4	Recognize the safety, risks, risk benefit analysis and rights of an engineer.	K2
			C411.5	Discuss the importance of the global issues, moral leadership and code of conduct.	K2
9.	IV/VIII	EE6811 - Project Work	C412.1	Apply the fundamentals of mathematics, science and engineering knowledge to identify , formulate , design and investigate complex engineering problems of electrical and electronics engineering and allied applications .	K2
			C412.2	Apply appropriate techniques and modern engineering hardware and software tools in electrical and electronics engineering and allied applications.	K2
			C412.3	Apply reasoning informed by the contextual knowledge to assess societal , health, safety,	K2



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			legal and cultural issues with societal and environmental context , applying ethical principles in the field of electrical and electronics engineering and allied applications.	
		C412.4	Function effectively as an individual and as a member or leader in diverse teams in multidisciplinary settings and make effective presentation, and communicate effectively.	K2



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COURSE OUT COME FOR REGULATION - 2017

PROGRAMME: ELECTRICAL AND ELECTRONICS ENGG	DEGREE: UG	A.Y: 2017-2018	SEMESTER: 01
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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
17.	I/I	HS8151 - Communicative English	C101.1	Communicate clearly both in the written form and orally using appropriate vocabulary and comprehend written texts to make inferences.	K2
			C101.2	Speak persuasively in different social contexts and write biographical details and technical documents cohesively, coherently and flawlessly using appropriate words.	K2
			C101.3	Speak, read and write effectively for a variety of professional and social settings.	K2
			C101.4	Read descriptive, narrative, expository and interpretive texts and write using creative, critical, analytical and evaluative methods.	K6
			C101.5	Listen, comprehend and respond to different spoken and written discourses/excerpts in different accents and write different genres of texts adopting various writing strategies.	K6
18.	I/I	MA8151 - Engineering Mathematics - I	C102.1	Use both the limit definition and rules of differentiation to differentiate functions.	K3
			C102.2	Apply differentiation to solve maxima and minima problems	K3
			C102.3	Evaluate integrals both by using Reimann sums and by using the fundamental theorem of convergent improper integrals. Evaluate integrals using techniques of integration, such as substitution, partial Fractions, integration by parts and improper integrals.	K5
			C102.4	Apply integration to compute multiple integrals, area, volume, integrals in polar Coordinates, in addition to change of order	K3



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				and change of variables.	
			C102.5	Apply various techniques in solving differential equations.	K3
19.	I/I	PH8151 - Engineering Physics	C103.1	Demonstrate the properties of elasticity and measure the different moduli of elasticity.	K2
			C103.2	Examine the characteristics of waves, Laser and optical fiber	K2
			C103.3	Illustrate different modes of heat transfer through objects.	K2
			C103.4	Explain the block body radiation, properties of matter waves and schrodinger equations.	K2
			C103.5	Classify the bravais lattices, crystal structures, crystal imperfections and crystal growth techniques	K2
20.	I/I	CY8151 - ENGINEERING CHEMISTRY I	C104.1	Explain the hardness of water, its types and estimation, boiler troubles and treatment of boiler feed water.	K2
			C104.2	Explain adsorption, types and theories of adsorption isotherm and its application in pollution abatement, theories of catalysis and applications	K2
			C104.3	Understand the basic concepts of phase rule and its application to one and two component systems, properties, significance and applications of alloys	K2
			C104.4	Relate the significance of solid, liquid and gaseous fuels and to calculate the calorific value of fuels	K2
			C104.5	Illustrate the methods of harvesting energy from non-conventional energy sources.	K2
21.	I/I	GE8151- Problem Solving	C105.1	Develop algorithmic solutions to simple computational problems .	K2



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		and Python Programming	C105.2	Demonstrate programs using simple Python statements and expressions.	K3
			C105.3	Explain control flow and functions concept in Python for solving problems.	K2
			C105.4	Use Python data structures- lists, tuples & dictionaries for representing compound data.	K3
			C105.5	Explain files, exception, modules and packages in Python for solving problems.	K2
22.	I/I	GE8152- Engineering Graphics	C106.1	Familiarize with the fundamentals and standards of engineering graphics.	K2
			C106.2	Perform freehand sketching of basic geometrical constructions and multiple views of objects.	K3
			C106.3	Project orthographic projections of lines and plane surfaces.	K2
			C106.4	Draw projections, solids and development of surfaces.	K3
			C106.5	Visualize and to project isometric and perspective sections of simple solids.	K3
23.	I/I	GE8161- Problem Solving and Python Programming Laboratory	C107.1	Develop solutions to simple computational problems using Python programs.	K2
			C107.2	Solve problems using conditionals and loops in Python.	K3
			C107.3	Develop Python programs by defining functions and calling them.	K3
			C107.4	Use Python lists, tuples & dictionaries for representing compound data.	k3
			C107.5	Develop Python programs using files.	K2
24.	I/I	BS8161 - Physics and Chemistry Laboratory	C108.1	Determine and estimate the types of alkalinity & hardness of a given water sample.	K2
			C108.2	Estimate the amount of copper content	K2



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			present in a given sample.	
		C108.3	Determine the strength of an acid by using pH meter.	K2
		C108.4	Determine the strength of a pure acid and mixture of acids by using conductivity meter.	K2
		C108.5	Estimate the amount of iron content present in a given solution by means of potentiometric titration.	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level
25.	I/II	HS8251 - Technical English	C109.1 Read technical texts and write area-specific texts effortlessly	K2
			C109.2 Listen and comprehend lectures and talks in their area of specialization successfully	K2
			C109.3 Speak appropriately and effectively in varied formal and informal contexts	K2
			C109.4 Write reports and winning job applications.	K3
			C109.5 Use appropriate technologies to organize, present, and communicate information to address a range of audiences, purposes, genres	K3
26.	I/II	MA8251 - MATHEMATICS II	C110.1 Calculate the eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices	K3
			C110.2 Evaluate the line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification	K5
			C110.3 Determine Analytic functions, conformal	K3



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			mapping and Bilinear transformation	
			Evaluate the Cauchy's integrals, Taylor's and Laurent's and residue theorem for evaluation for real integrals using circular and semicircular, contour	K5
			Evaluate Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.	K5
27.	I/II	PH8253 - PHYSICS FOR ELECTRONICS ENGINEERING	Gain knowledge on classical and quantum electron theories and energy band structures.	K2
			Acquire knowledge on basis of semiconductor physics and its applications in various devices.	K2
			Get knowledge on magnetic and dielectric properties of materials.	K2
			Have the necessary understanding on the functioning of optical materials for opto electronics.	K2
			Understand the basics of quantum structures and their applications in spintronics	K2
28.	I/II	BE8252 - BASIC CIVIL AND MECHANICAL ENGINEERING	State the scope of civil Engineering and Overview of Civil Engineering and Explain the scope of Mechanical Engineering and Overview of Mechanical Engineering.	K2
			State the functions of IC engine and differentiate the working principle of 2stroke, 4 stroke petrol and diesel engine, Types of power plant and classify the various types of boilers and conclude the use of boiler in power plant.	K3



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			C112.3	Apply the principles of vapour absorption and compression systems and Explain the Operation and type of air conditioner.	K3
			C112.4	Apply the principles of surveying and use various measurements for surveying and Explain about various engineering materials and leveling instruments	K3
			C112.5	Classify the types of bridges, foundation, floorings, roofs, plasters and R.C.C structural members and state the purpose of dam	K2
29.	I/II	EE8251-CIRCUIT THEORY	C113.1	Apply Kirchoff's current and voltage laws to simple circuits and Solve complex circuits using Mesh & Nodal Methods.	K3
			C113.2	Apply Network theorems to linear circuits and to solve simple and complex problems.	K3
			C113.3	Analyze the Transient response of RLC circuits under DC and AC excitation using Laplace Transform	K4
			C113.4	Analyze three phase balanced and unbalanced star, delta network	K4
			C113.5	Compute the frequency response of Series and Parallel resonance and analyze tuned circuits.	K2
30.	I/II	GE8291- ENVIRONMENTAL SCIENCE AND ENGINEERING	C114.1	Explain the values, threats and conservation of biodiversity and classify various ecosystems.	K2
			C114.2	Identify and implement technological and economical solution to environmental pollution.	K3
			C114.3	Develop the knowledge on various natural resources, their causes and their effects	K3
			C114.4	Explain various environmental acts and to	K2



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				explain various disaster management	
				Relate population growth and environment and the role of IT in environment and human health	K2
31.	I/II	GE8261- ENGINEERING PRACTICES LABORATORY	C114.5	Demonstrate wiring for a simple residential house; identify the ratings of various appliances like fluorescent tube	K4
			C115.2	Calculate the different electrical quantities	K3
			C115.3	Measure the resistance to earth of electrical equipment	K3
			C115.4	Verify the truth tables of logic gates AND	K5
			C115.5	Develop soldering in a PCB	K6
32.	I/II	EE8261- ELECTRIC CIRCUIT LABORATORY	C116.1	Apply Kirchhoff's voltage and current laws to solve simple and complex circuits.	K3
			C116.2	Apply network theorems to solve simple and complex circuits.	K3
			C116.3	Demonstrate the working of Analog and digital storage oscilloscopes.	K2
			C116.4	Determine frequency response of RLC circuits and Use MATLAB to simulate series, parallel resonant circuit.	K3
			C116.5	Apply MATLAB tool to simulate three phase balanced and unbalanced star, delta network circuit.	K3



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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level
10.	II/III	MA8353 TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS	C201.1 Solve First, Second order homogeneous and non homogeneous partial differential equations	K3
			C201.2 Find the Fourier series of a given function satisfying Dirchlet's condition.	K2
			C201.3 Apply Fourier series to solve one dimensional wave, one and two dimensional heat equations.	K3
			C201.4 Determine Fourier transform for a given function and use them to evaluate certain definite Integrals	K2
			C201.5 Determine z transforms of standard functions and use them to solve difference equations	K3
11.	II/III	EE8351 DIGITAL LOGIC CIRCUITS	C202.1 Analyze the various types of number system and compare the digital logic families.	K4
			C202.2 Apply K –Map for simplification and implementation of combinational logic circuit.	K3
			C202.3 Design the synchronous Sequential logic circuits, draw the block diagram of Shift Registers.	K3
			C202.4 Design of asynchronous sequential circuits and describe the operation of Programmable Logic Devices.	K3
			C202.5 Design the VHDL coding for combinational logic and Sequential circuits..	K3



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12.	II/III	EE8391- ELECTROMAGNETIC THEORY	C203.1	Apply the vector calculus to static electric-magnetic fields.	K3
			C203.2	Apply the principles of electrostatics related to electric field and electric potential, boundary conditions, energy density and capacitance of different configurations.	K3
			C203.3	Apply the principles of magnetostatics related to magnetic field and magnetic potential, boundary conditions, energy density and inductance of different configurations.	K3
			C203.4	Apply Maxwell's equations in differential and integral forms.	K3
			C203.5	Apply Maxwell's equations to solutions of problems relating to uniform plane wave propagation in different media and its interfaces	K3
13.	II/III	EE8301-ELECTRICAL MACHINES-1	C204.1	Apply the basic laws in the magnetic circuits, which are the foundation for all electrical machines.	K3
			C204.2	Build the equivalent circuit of transformers at different loading condition, thereby finding their voltage regulation and efficiency	K3
			C204.3	Interpret the electric and magnetic field interactions in electromechanical devices and machines	K2
			C204.4	Classify the DC machines based on their type of excitation	K2
			C204.5	Identify the type of speed control of DC motor in different application	K3
14.	II/III	EC8353-ELECTRON DEVICES AND	C205.1	Explain the structure and working operation of basic electronic devices.	K2



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		CIRCUITS	C205.2	Able to identify and differentiate both active and passive elements	K3
			C205.3	Analyze the characteristics of different electronic devices such as diodes and transistors	K3
			C205.4	Choose and adapt the required components to construct an amplifier circuit.	K2
			C205.5	Employ the acquired knowledge in design and analysis of oscillators	K2
15.	II/III	ME8792 POWER PLANT ENGINEERING	C206.1	Identify the various components of modern coal power plant and analyse the safety measures of environmental factors in thermal power plant.	K1
			C206.2	Apply the knowledge of various gas power cycles to analyse the construction and working of various liquid and gas Power Plants.	K2
			C206.3	Review the layout and working of the components of nuclear power plants and analyze the safety measures of the environment for the healthy society.	K2
			C206.4	Identify the various renewable energy resources of power generation and gain the knowledge for sustainable development.	K2
			C206.5	Formulate the cost of electrical energy based on Power tariff, analyse the Economics and discuss the safety aspects of power plant operation	K2
16.	II/III	EC8311- ELECTRONICS LABORATORY	C207.1	Analyze the PN junction diode acts as a perfect switch and Zener diode act as a voltage regulator. Design an experimental setup of a voltage buffer, current buffer and amplifier circuit	K4



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			using NPN transistor.	
			Analyze the characteristics of a voltage controlled device. Design an experimental setup of the relaxation oscillator using UJT.	K4
			Design a experiment and determine the frequency response of common emitter amplifier. Analyze the characteristics of photo sensitive semiconductor device and Light activated relay circuit.	K4
			Design an experimental setup of a Audio frequency oscillator and Radio frequency oscillator. Design and implement a circuit that converts AC voltage to DC voltage for the given input and calculate its ripple factor and percentage of regulation with and without capacitive and inductive filter.	K4
			Design an experimental setup of a differential amplifier using field effect transistor and determine its gain and CMRR. Analyze the sine, square and triangular waveforms Using Cathode ray oscilloscope and then measure its corresponding amplitude, frequency and phase respectively. Design the low pass filter and High pass filter using passive components with cutoff frequency of 1khz and determine its gain	K4
17.	II/III	E8351-ELECTRICAL MACHINES-1 LABORATORY	Investigate the voltage drop due to armature reaction effect in DC shunt and DC compound generators and Design Ampere turns for Inter poles and compensating winding. Examine critical resistance and critical speed.	K3



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			C208.2	Analyze load characteristics DC shunt, series and compound motor. Examine its maximum output and maximum efficiency	K3
			C208.3	Investigate the constant losses of the DC shunt motor predict the efficiency in different methods at different load condition	K3
			C208.4	Analyze load characteristics of single and three phase transformer. Examine the different losses and efficiency	K3
			C208.5	Investigate the the equivalent circuit parameters of single phase transformer to predetermine its voltage regulation and efficiency	K3

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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
9.	II/IV	MA8491 -Numerical Methods	C209.1	Determine the solution of algebraic and transcendental system of linear equations	K3
			C209.2	To interpolate the values of unknown functions using Newton's Formula	K3
			C209.3	Estimate the numerical values of the derivatives and integrals of unknown function.	K3
			C209.4	Solve first and second order initial value problem	K3
			C209.5	Solve Numerically boundary value problem	K3
10.	II/IV	EE8401-Electrical Machines - II	C210.1	Apply the Knowledge of Engineering fundamentals to the solutions of induced emf, voltage regulation,	K3



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				performance characteristics and analyzing the operation of synchronous generator	
			C210.2	Apply the Knowledge of Engineering fundamentals to the solutions of induced emf, torque developed, performance characteristics and analyzing the operation of synchronous motor	K3
			C210.3	Apply the Knowledge of Engineering fundamentals to the solutions of torque developed, performance characteristics and analyzing the operation of three phase induction motor	K3
			C210.4	Analyze the operations of starter used for AC motor, speed control of three phase induction motor.	K4
			C210.5	Apply the Knowledge of Engineering fundamentals to the solutions of torque developed, performance characteristics and analyzing the operation of single phase induction motor and Special Electrical Machines	K3
11.	II/IV	EE8402 TRANSMISSION AND DISTRIBUTION	C211.1	Explain the structure of Electrical power system and to analyze Transmission Line Parameters	K2
			C211.2	Analyze the equivalent circuits for the transmission lines based on distance and to analyze voltage regulation and efficiency.	K4
			C211.3	Analyze the mechanical design of transmission lines and the voltage distribution in insulator strings to improve the efficiency.	K4
			C211.4	Analyze the types and construction of cables and to review the methods of	K4



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			grading of cables	
			C211.5 Review about distribution systems, types of substations, methods of grounding, EHVAC, HVDC	K2
12.	II/IV	EE8403 MEASUREMENT AND INSTRUMENTATION	C212.1 Analyze the basic functional block elements in Different measuring Instruments and the errors in the measurement system	K4
			C212.2 Analyze construction and working of electrical and electronics instruments	K4
			C212.3 Design AC and DC bridge circuits to determine the values of resister, inductor and capacitors	K3
			C212.4 Review the knowledge on various types of storage and display devices.	K2
			C212.5 Analyze the concepts of various transducers and data acquisition systems	K4
13.	II/IV	EE8451-Linear Integrated Circuits and Applications	C213.1 Describe knowledge in IC fabrication process	K2
			C213.2 Infer the DC and AC characteristics of operational amplifiers and its effect on output and their compensation techniques.	K2
			C213.3 Elucidate and design the linear and non-linear applications of an opamp and special application Ics.	K3
			C213.4 Explain and compare the working of multivibrators using special application IC 555 and general purpose opamp	K2
			C213.5 Illustrate the function of application specific ICs such as Voltage regulators, PLL and its application in	K3



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				communication.	
14.	II/IV	C8451-Control Systems	C214.1	Develop mathematical models for physical system and simplify it using reduction techniques.	K3
			C214.2	Determine the time domain responses of first and second-order systems to test inputs.	K2
			C214.3	Analyze system's stability using different frequency domain methods.	K3
			C214.4	Design compensators and their selection to meet desired response.	K5
			C214.5	Develop and analyze state space models	K3
15.	II/IV	EE8411-Electrical Machines Laboratory - II	C215.1	Apply the Knowledge of Engineering fundamentals to the solutions of induced emf, voltage regulation, performance characteristics and analyzing the operation of synchronous generator	K3
			C215.2	Apply the Knowledge of Engineering fundamentals to the solutions of induced emf, torque developed, performance characteristics and analyzing the operation of synchronous motor	K3
			C215.3	Apply the Knowledge of Engineering fundamentals to the solutions of torque developed, performance characteristics and analyzing the operation of three phase induction motor	K3
			C215.4	Analyze the operations of starter used for AC motor, speed control of three phase induction motor.	K4
			C215.5	Apply the Knowledge of Engineering fundamentals to the solutions of torque developed, performance characteristics	K3



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				and analyzing the operation of single phase induction motor and Special Electrical Machines	
16.	II/IV	EE8461-Linear and Digital Integrated Circuits Laboratory	C216.1	Design and implement the experimental setup of combinational circuits like Boolean functions, code converters, parity generator, parity checker, encoders, decoders, multiplexer and demultiplexer.	K3
			C216.2	Design and implement the experimental setup of Counters and Shift registers using specific IC's.	K3
			C216.3	Design a experimental setup of Timer IC applications.	K3
			C216.4	Design an experimental setup of a Op-Amp applications like inverting and Non inverting amplifier, adder, comparator, integrator and differentiator	K3
			C216.5	Analyze the voltage to frequency characteristics of voltage controlled oscillator using NE/SE 566 IC and Design the variability voltage regulator using LM317 IC.	K4
17.	II/IV	EE8412-Technical Seminar	C217.1	Function effectively as an individual and Make effective presentation on Engineering/ technology	K2
			C217.2	Review, prepare and present technological developments in the field of electrical and electronics engineering.	K2
			C217.3	Design documentation and write effective reports on seminar topics	K2



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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level
10.	III/V	E8501-Power System Analysis	C301.1 Apply engineering knowledge to evaluate the per unit values and to formulate bus impedance, admittance matrices for the given power system network.	K3
			C301.2 Analyze load flow techniques using Newton – Raphson and Gauss Seidel methods for the power system networks and interpret the results	K4
			C301.3 Analyze the power system network under symmetrical fault condition using Thevenin’s theorem and bus impedance matrix	K4
			C301.4 Analyze the power system network under unsymmetrical fault condition using symmetrical components	K4
			C301.5 Analyze the transient stability of power system using equal area criterion and to apply Runge Kutta and Euler’s methods to solve the swing equation	K4
11.	III/V	EE8551- Microprocessors and Microcontrollers	C302.1 Analyze the functional building blocks of 8085 microprocessor	K4
			C302.2 Identify the instructions with the help of addressing modes of 8085 microprocessor and develop the assembly language program on addition	K3
			C302.3 Analyze the functional building blocks of 8051 microcontroller	K4
			C302.4 Analyze the architecture and functional modes of 8255	K4
			C302.5 Apply the instructions of 8051 microcontroller to develop the program for	K3



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				Closed loop control of servo motor	
12.	III/V	EE8552-Power Electronics	C303.1	Apply the knowledge on Different types of power semiconductor devices and their switching characteristics	K3
			C303.2	Analyze and compare the Operation, characteristics and performance parameters of various types controlled rectifiers and to design controlled rectifiers and interpret with their applications	K4
			C303.3	Analyze the Operation, switching techniques and basics topologies of different types DC-DC switching Regulators and design regulators that meet the appropriate applications	K4
			C303.4	Apply the modulation techniques for pulse width modulated inverters and analyze harmonic reduction methods. Infer the applications of inverter	K3
			C303.5	Apply the Operation of AC voltage controller and various configurations to design for their applications	K3
13.	III/V	EE8591-Digital SignalProcessing	C304.1	Apply the Mathematical knowledge to evaluate the different types of signals and systems and analyze the sampling process of continuous time signal.	K3
			C304.2	Analyze the discrete time systems using z-transform and inverse Z transform	K4
			C304.3	Apply the Radix-2 Decimation in Time (DIT) and Decimation in Frequency (DIF) FFT Algorithm to Compute the Discrete Fourier Transform	K3
			C304.4	Design of different types of Infinite Impulse Response (IIR) filters and Finite Impulse Response (FIR) filters.	K3



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			C304.5	Analyze the various architectures of Digital Signal Processors and addressing formats.	K4
14.	III/V	CS8392-Object Oriented Programming	C305.1	Develop Java programs using OOP principles	K2
			C305.2	Develop Java programs using the concepts of inheritance and interfaces	K2
			C305.3	Build Java applications using exceptions and I/O streams	K2
			C305.4	Develop Java applications with threads and generics classes	K2
			C305.5	Develop interactive Java programs using swings	K2
15.	III/V	OMD551-Basics of Biomedical Instrumentation	C306.1	Identify the functions of human nervous system, Basic Components of a biomedical system and able to analyze the functions of different transducers used in biomedical system.	K2
			C306.2	Apply the knowledge of medical science to analyse the different non-electrical parameter measurements	K3
			C306.3	Analyse the different electrodes and amplifiers used in physiological measurements like EEG, ECG, EMG etc.,	K4
			C306.4	Analyse the different imaging techniques and biotelemetry system	K4
			C306.5	Analyse the different life assisting, Therapeutic and robotic devices used in Biomedical field.	K4
16.	III/V	EE8511-Control and Instrumentation Laboratory	C307.1	Analyze the characteristics of P, PI and PID controllers experimentally and analyze the stability of the control system using MATLAB	K4
			C307.2	Compute the transfer function of a Field controlled DC motor experimentally and analyze the response of Lag, Lead and Lag-	K3



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			Lead Compensators	
			C307.3 Analyze the transient response of Position Control system experimentally and analyze the Characteristics of Synchro- Transmitter-Receiver and to Use MATLAB for the Simulation of Control Systems	K4
			C307.4 Ability to analyze the basic concepts of bridge networks and to analyze the Dynamics of Sensors/Transducers	K4
			C307.5 Measure the Power and Energy experimentally and analyze signal conditioning circuits and to Use MATLAB for Process Simulation	K4
17.	III/V	HS8581- Professional Communication	C308.1 Summarize various skills such as Soft Skills, Hard skills, employability and career Skills and demonstrate values such as Time Management and general awareness of current affairs.	K2
			C308.2 Demonstrate oneself before the audience by making effective presentations on introducing oneself, answering questions and visual presenting	K3
			C308.3 Demonstrate oneself by participating in group discussions, brainstorming sessions and question sessions. Develop activities to improve GD Skills	K3
			C308.4 Develop interview skills so as to be successful in them	K2
			C308.5 Develop adequate Soft Skills required for the workplace and long-term career	K2
18.	III/V	CS8383 Object Oriented Programming Laboratory	C309.1 Design C++ programs using functions, classes with objects, member functions and constructors.	K3
			C309.2 Develop operator and function overloading	K3



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			and run time polymorphism using C++.	
		C309.3	Develop file handling techniques in C++ for sequential and random access also use Java code for strings.	K3
		C309.4	Construct packages and interfaces in Java.	K2
		C309.5	Create threads in Java and handle predefined and user defined exceptions.	K6

PROGRAMME: ELECTRICAL AND ELECTRONICS ENGG	DEGREE: UG	A.Y: 2019-2020	SEMESTER: 06
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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
11.	III/VI	EE8601 - Solid State Drives	C310.1	Understand the types of drives and load torque characteristics for motors.	K2
			C310.2	understand the operation of the converter / chopper fed dc drive and to solve simple problems	K2
			C310.3	understand the operation of both classical and modern induction motor drives	K2
			C310.4	Operate and maintain solid state drives for speed control of Synchronous motor.	K2
			C310.5	Apply these skills to design the current and speed controllers for a closed loop solid-state DC motor drive.	K3
12.	III/VI	EE8602- Protection and Switchgear	C311.1	Analyze the causes and effects of faults and ungrounded system	K4
			C311.2	Analyze the characteristics and functions of Electromagnetic type protective relays	K4
			C311.3	Analyze the various abnormal conditions in power system apparatus and to select a suitable protection scheme	K4



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			C311.4	Synthesize the static relays using comparators and numerical relays.	K5
			C311.5	Analyze arc interruption and to select a suitable circuit breaker	K4
13.	III/VI	EE8691 - Embedded Systems	C312.1	Analyze the basic build process of embedded systems, structural units in embedded processor and selection of processor and memory devices depending upon the applications.	K2
			C312.2	Analyze the different types of I/O device ports, buses and different interfaces for data transfer in embedded networking	K1
			C312.3	Apply the different techniques like state machine model, sequential program model and concurrent model in Embedded Product Development Life Cycle (EDLC).	K3
			C312.4	Analyze the basic concept of Real Time Operating Systems and scheduling of different task and compare the features of different types of Real Time Operating Systems	K2
			C312.5	Apply the knowledge of programming concepts of Embedded Systems for various applications like Washing Machine automotive and Smart Card System applications	K1
14.	III/VI	EE8004-Modern Power Converters	C313.1	Understand the overview of different types loads with single phase thyristor controlled converter.	K2
			C313.2	To understand the operation, characteristics and performance parameters three phase thyristor controlled converter	K2
			C313.3	Analyze the different types of dc-dc converters	K4



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			C313.4	Understand the single-phase bi-directional controllers with R, L and R-L loads & 3-phase controllers	K2
			C313.5	Understand the Principle of operation, single phase and three phase Cycloconverters	K2
15.	III/VI	EE8005-Special Electrical Machines	C314.1	Apply the magnetic circuit concept to increase the saliency ratio of synchronous reluctance motor and compare improvement of the saliency ratio for the different rotor constructions	K3
			C314.2	Apply the magnetic circuit concept in stepper motor for various methods of excitation and compare its static and dynamic performance	K3
			C314.3	Apply basic engineering knowledge to compare the performance of switched reluctance motor with and without sensors	K3
			C314.4	Apply the concept of D.C motor for brushless operation with electronic commutation in brushless D.C. motor and to develop the torque .	K3
			C314.5	Apply basic engineering knowledge in permanent magnet synchronous motor to design power controller for permanent magnet synchronous motors.	K3
16.	III/VI	EE8661-Power Electronics and Drives Laboratory	C315.1	Analyze the VI characteristics of SCR, TRIAC and Generation of Gate Pulse using R, RC and UJT.	K4
			C315.2	Analyze the characteristics of MOSFET, IGBT, GTO and IGCT	K4
			C315.3	Design a single phase AC to DC half controlled converter, AC to DC fully controlled converter, step down chopper and step up MOSFET, Switched Mode Power Converter and analyze the output response.	K4



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			C315.4	Analyze the output waveforms of single phase and three phase IGBT based PWM inverter, AC Voltage controller and the characteristic of PMLDC motor	K4
			C315.5	Analyze the Simulation of output waveform PE circuits (1Φ & 3Φ semi converters, 1Φ & 3Φ fullconverters, DC-DC converters, AC voltage controllers).	K4
17.	III/VI	EE8681- Microprocessors and Microcontrollers Laboratory	C316.1	Design a program for arithmetic operation, Ascending/ Descending order, finding Maximum/Minimum numbers, rotate instruction and code conversions and execute using 8085 processor	K4
			C316.2	Identify and convert Analog to Digital , Digital to Analog numbers and implement the traffic light controller with 8085	K4
			C316.3	Design a code to display the given words using keyboard display controller for serial communication and programming practices with simulator/Emulator /open source	K4
			C316.4	Analyze a program using read key to interface with display units and demonstrate conditional jumps ,loops and calling subroutines with 8051 Microcontroller	k4
			C316.5	Create program using I/O port ,8051 timer , A/D & D/A interface with DC & AC motors and develop a program for hardware application using embedded processors	K6
18.	III/VI	EE8611-Mini Project	C317.1	Apply practical knowledge within the chosen area of expertise for project development	K3
			C317.2	Identify, analyze, design and handle prototype projects with a complete and organized approach	K4
			C317.3	Contribute as an individual or in a team in development of technical projects	K2



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			C317.4	Develop effective communication skills for presentation of project related activities and prepare mini project reports and examination	K2
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PROGRAMME: ELECTRICAL AND ELECTRONICS ENGG	DEGREE: UG	A.Y: 2020-2021	SEMESTER: 07
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S.No	Year/ Sem	Course Name	Course Outcomes (The students will be able to understand the)	Knowledge Level	
9.	IV/VII	EE8701-High Voltage Engineering	C401.1	Apply the knowledge of Engineering fundamentals to identify the causes of different over voltages in Electrical Power System and select the protection system according to the types of over voltages.	K3
			C401.2	Identify the factors that leads the breakdown mechanism of different dielectric materials and Compare dielectric strength of the different dielectric materials (Gas, Oil, Vacuum and solid)	K2
			C401.3	Apply the knowledge of Engineering fundamentals to identify the generating circuits to produce different high voltages and High currents	K3
			C401.4	Apply the knowledge of Engineering fundamentals to identify the measuring instrument to measure the different over voltages and currents in Electrical Power System	K3
			C401.5	Analyse the testing of different Electrical power apparatus and the insulation coordination	K4
10.	IV/VII	E8702-Power System Operation and Control	C402.1	Outline the voltage, frequency regulation and load forecasting methods	K2
			C402.2	Analyze the real – power frequency control for single area and two area power system	K4
			C402.3	Analyze reactive power – voltage control and select a suitable controller to improve the	K4



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			voltage profile	
			C402.4 Analyze the Energy Management System and Design a SCADA system	K4
			C402.5 Prepare a comprehensive report on micro turbine modelling	K2
11.	IV/VII	EE8703- Renewable Energy Systems	C403.1 Analyze the challenges and problems associated with the use of various energy sources, including fossil fuels, with regard to future supply and the environment	K4
			C403.2 Formulate the power in wind energy, classify the types of WPPs, select the site for WPPs and analyze the grid integration issues of WPPs.	K2
			C403.3 Apply the knowledge of engineering for harnessing thermal and electrical energy from solar energy	K3
			C403.4 Apply the knowledge of engineering for harnessing electrical energy from biomass, geothermal and hydro power energy	K3
			C403.5 Apply the knowledge of engineering for harnessing electrical energy from ocean energy, fuel cell, hybrid energy systems and production with storage of the hydrogen	K3
12.	IV/VII	OML751- Testing of Materials	C404.1 Identify suitable testing technique to inspect industrial component	K2
			C404.2 Ability to use the different technique and know its applications and limitations	K2
			C404.3 Utilize information about elastic and plastic deformation to predict loads or strains that lead to yielding, necking, or fracture	K3
			C404.4 Understand and identify the stress-strain response of ceramics, metals, and polymers, and know generally how these are altered by strengthening/hardening mechanisms,	K5



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			alloying, etc.	
			C404.5 Know types of dislocation, how they move, what strain-fields occur and how dislocations interact, what effects are created in crystals when they move, and how they lead to plastic deformation.	K2
13.	IV/VII	EI8075-Fibre Optics and Laser Instrumentation	C405.1 Analyze the characteristics of optical fibres and working the light through the fibre	K4
			C405.2 Apply the gained knowledge of optical fibres and application of the fibre in industries for measurement system and units.	K3
			C405.3 Analyze the fundamentals concepts of laser operation and its characteristics of various types of lasers.	K4
			C405.4 Analyze the application of lasers in industrials for various units and working methods.	K4
			C405.5 Apply the level of laser in hologram and medical application.	K3
			14.	IV/VII
C406.2 Identify the importance of switching transients and illustrate the concept of resistance switching, load switching and capacitance switching	K4			
C406.3 Recall the concept of lightning mechanism and analyze the interaction between lightning and power system	K4			
C406.4 Apply the concept of reflection and refraction and determine the Bewley Lattice diagram for different systems.	K3			
C406.5 Analyze transients in integrated power system and apply IT tools for transient computation	K4			



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15.	IV/VII	EE8711 - Power System Simulation Laboratory	C407.1	Develop the coding to analyze the performance of transmission line in electrical power system and to formulate bus impedance, admittance matrix for the given power network.	K3
			C407.2	Develop the coding to Analyse the load flow problems using Newton Raphson and Gauss seidal methods for the power system and interpret the results.	K4
			C407.3	Design the simulation model to Analyse the power system under symmetrical and unsymmetrical fault conditions and analyse the transient stability of the power system	K4
			C407.4	Develop the coding to Analyse the economic dispatch and load frequency dynamic problems for the given power system and interpret the results	k4
			C407.5	Design the simulation model to Analyse the occurrence of electromagnetic transients in power system and interpret the results	K4
16.	IV/VII	EE8712- Renewable Energy Systems Laboratory	C408.1	Analyze the V-I characteristics and efficiency of 1 KW solar PV system with stand alone and grid connected by conducting experiment and simulation using MATLAB Simulink.	K4
			C408.2	Analyze the performance and assessment of micro wind energy generator by conducting experiment and simulation using MATLAB Simulink.	K4
			C408.3	Analyze the performance and assessment of solar-wind hybrid system by conducting experiment and simulation using MATLAB Simulink.	K4
			C408.4	Analyze the Hydel power using MATLAB Simulink and analyze the performance and assessment of Fuel cell by conducting experiment and simulation using MATLAB	k4



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			Simulink.	
		C408.5	Analyze the various types of intelligent controller for hybrid system using MATLAB Simulink	K4



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COURSE OUT COME REGULATION 2013

PROGRAMME:MECHANICAL ENGINEERING	DEGREE: UG	A.Y: 2016-17	SEMESTER: 01
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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)	Knowledge Level
1	I / I	HS6151 - Technical English I	C101.1 Explain clearly, confidently, comprehensibly, and communicate with one or many listeners using appropriate communicative strategies.	K2
			C101.2 Construct cohesively and coherently and flawlessly avoiding grammatical errors, using a wide vocabulary range, organizing their ideas logically on a topic.	K6
			C101.3 Organize different genres of texts adopting various reading strategies.	K6
			C101.4 Distinguish and comprehend different spoken discourses/excerpts in different accents.	K2
			C101.5 Listen to different accents, speeches and presentations.	K2
2	I / I	MA6151 - Mathematics I	C102.1 Learn a clear idea of matrix algebra pertaining Eigen values and Eigen vectors in addition dealing with quadratic forms.	K2
			C102.2 Learn infinite series and their convergence and acquire the knowledge of with limitations of using infinite series approximations for solutions arising in mathematical modelling.	K2
			C102.3 Understand and characterize phenomena which evolve around circle of curvature and envelope.	K2
			C102.4 Extend the function of a one variable to several variables. Multivariable functions of real variables arise inevitable in engineering.	K2
			C102.5 Exposed to double and triple integration so that they can handle integrals of higher order which are applied in engineering field.	K3



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3	I / I	PH6151 - Engineering Physics I	C103.1	Classify the Bravais lattices, and different types of crystal structures & growth techniques.	K1
			C103.2	Demonstrate the properties of elasticity and heat transfer of objects.	K2
			C103.3	Explain Black body Radiation and properties of matter waves and Schrodinger wave equations.	K3
			C103.4	Illustrate the acoustic requirements, production and application of ultrasonic.	K1
			C103.5	Examine the characteristics of laser and optical fiber.	K2
4	I / I	CY6151 - Engineering Chemistry I	C104.1	Classify the polymers and their utility in the industries and describe the techniques of polymerization and properties of polymers.	K1
			C104.2	Relate various thermodynamic functions such as enthalpy, entropy, free energy and their importance and equilibrium constants and its significance.	K2
			C104.3	Explain the photo physical processes such as fluorescence and phosphorescence and various components of UV and IR spectrophotometer.	K1
			C104.4	Illustrate the phase transitions of one component and two component systems and the types of alloys and their applications in industries.	K3
			C104.5	Outline the synthesis, characteristics and the applications of nano materials.	K1
5	I / I	GE6151- Computer Programming	C105.1	Elaborate the organization of digital computer and design the solution for simple computing problems using algorithm, flowchart and pseudo code.	K6
			C105.2	Apply the different looping structure to solve simple scientific and statistical problems.	K3
			C105.3	Devise the solutions for simple problems using arrays and strings	K6
			C105.4	Demonstrate the usage of dynamic memory allocation and pointer variables.	K3



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			C105.5	Illustrate the concepts of structure and union with an example programs.	K4
6	I / I	GE6152- Engineering Graphics	C106.1	Sketch the conic sections, special curves, and draw orthographic views from pictorial views and models.	K4
			C106.2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.	K3
			C106.3	Sketch the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures.	K4
			C106.4	Practice the sectional views of solids like cube, prisms, pyramids, cylinders & cones and extend its lateral surfaces	K3
			C106.5	Sketch the perspective projection of simple solids, truncated prisms, pyramids, cone and cylinders and sketch the isometric projection of simple machine parts.	K4
7	I / I	GE6161- Computer Practices Laboratory	C107.1	Describe the usage of office automation tools	K1
			C107.2	Apply the good programming methods for program development.	K3
			C107.3	Design and implement the C program for simple application	K4
			C107.4	Develop and implement the recursive programs	K4
			C107.5	Implement the C program with the help of Structures and Union	K5
8	I / I	GE6162 - Engineering Practices Laboratory	C108.1	Construct Electrical and Electronic circuits.	K6
			C108.2	Examine different types of electronic circuits and components.	K3
			C108.3	Recognize electrical safety rules, grounding, general house wiring.	K6
			C108.4	Explore soldering practices.	K3



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9	I / I	GE6163 - Physics And Chemistry Laboratory - I	C109.1	Apply physics principles of optics and thermal physics to evaluate engineering properties of materials.	K3
			C109.2	Perform the quantitative chemical analysis of chloride and dissolved oxygen.	K5
			C109.3	Determine the amount of acids by using the instruments of conductivity meter and pH meter.	K5

PROGRAMME:MECHANICAL ENGINEERING	DEGREE: UG	A.Y: 2016-17	SEMESTER: 02
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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)	Knowledge Level	
1	I / II	HS6251 - Technical English II	C110.1	Speak convincingly, express their opinions clearly, initiate a discussion, negotiate, argue using appropriate communicative strategies..	K2
			C110.2	Write effectively and persuasively and produce different types of writing such as narration, description, exposition and argument as well as creative, critical, analytical and evaluative writing.	K5
			C110.3	Read different genres of texts, infer implied meanings and critically analyse and evaluate them for ideas as well as for method of presentation.	K1
			C110.4	Listen/view and comprehend different spoken excerpts critically and infer unspoken and implied meanings.	K2
			C110.5	Read and write effectively for a variety of professional and social settings	K2
2	I / II	MA6251 - Mathematics II	C111.1	Solve ordinary differential equations that model most of the engineering problems .	K3
			C111.2	Acquainted with the concepts of vector calculus-like Gradient, Divergence, Curl, Directional derivative, Irrotational vector and Solenoidal vector. The course	K2



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			gives an understanding of Vector integration, needed for problems in all engineering disciplines.	
			C111.3 Make to appreciate the purpose of using transforms to create new domain in which it is easier to handle the problem that is being investigated.	K6
			C111.4 Develop an understanding of the standard techniques of complex variable and mapping so as to enable the student to apply them with confidence, in application areas such as heat conduction, elasticity, fluid dynamics and flow of electric current .	K4
			C111.5 Exposed to the concept of Cauchy's integral theorem, Taylor and Laurent expansions, Singular points, Application of residue theorem to evaluate complex integrals.	K3
3	I / II	PH6251 - Engineering Physics II	C112.1 Illustrate Classical and Quantum free electron theory & calculate carrier concentration in metals.	K2
			C112.2 Describe the carrier concentration in semiconductors and identify the P-type & N-type semiconductor using Hall Effect.	K2
			C112.3 Classify the different types of magnetic and superconducting materials	K2
			C112.4 Explain the dielectrics, types of polarization, losses and breakdowns	K2
			C112.5 Discuss the properties, preparation and applications of Metallic Alloys, SMA, Nanomaterials, NLO, and Biomaterials.	K2
4	I / II	CY6251 - Engineering Chemistry II	C113.1 Describe the methods of polymerization, types, properties and uses of polymers.	K1
			C113.2 Design the electro chemical cells and to identify the types of corrosion and the methods of prevention	K2
			C113.3 Illustrate the methods of harnessing energy from non-conventional energy sources.	K2



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			C113.4	Classify various engineering materials and their important.	K1
			C113.5	Relate the significance of solid, liquid and gaseous fuel and to calculate the calorific values of fuels and the requirement of air for combustion in furnaces.	K3.
5	I / II	GE6252 Basic Electrical And Electronics Engineering	C114.1	Understand the electrical circuit and their working principles	K2
			C114.2	Identify the electrical components of a machines and their applications	K2
			C114.3	Explain the characteristics of the electrical machines	K2
			C114.4	Identify the digital electronics circuits and their components	K2
			C114.5	Explain the fundamentals of communication systems	K2
6	I / II	GE6253 - Engineering Mechanics	C115.1	Illustrate the vectorial and scalar representation of forces and moments	K2
			C115.2	Analyse the rigid body in equilibrium	K3
			C115.3	Evaluate the properties of surfaces and solids	K4
			C115.4	Calculate dynamic forces exerted in rigid body	K3
			C115.5	Determine the friction and the effects by the laws of friction	K3
7	I / II	GE6262 - Physics And Chemistry Laboratory - II	C116.1	Ability to test materials by using their knowledge of applied physics principles in optics and properties of matter.	K5
			C116.2	Determine the hardness, alkalinity and metal ion content in the water samples by volumetric titration.	K5
			C116.3	Estimate the water quality parameters by potentiometer, conductometer and flame photometer.	K2
8	I / II	GE6261 -	C117.1	Use the software packers for drafting and modeling	K3



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	Computed Aided Drafting and Modelling Laboratory	C117.2	Draw the plan of residential building and simple steel structures with the different types of joints as per the design calculations.	K3
		C117.3	Create 2D and 3D models of Engineering Components	K5

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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)	Knowledge Level	
1	II / III	MA6351 - Transforms and Partial Differential Equations	C201.1	Solve Linear Partial differential equations of first and second order.	K3
			C201.2	Associate the concepts of Fourier series expansion for even and odd functions.	K2
			C201.3	Apply the concepts of Fourier series in solving boundary value problems.	K3
			C201.4	Discuss the Fourier transform, Fourier Sine and Cosine transform techniques.	K2
			C201.5	Discuss the concepts of Z-Transform techniques for discrete time systems.	K2
2	II / III	CE6306 - Strength of Materials	C202.1	Describe the mechanical behavior of materials under stress with axial load, thermal load and compute the principal stress and principal strain by Mohr's circle.	K1
			C202.2	Calculate the shear force and bending moment for the different types of beams with various types of loading condition	K4
			C202.3	Use the concept of deflection of beams by various methods	K2
			C202.4	Explain the concept of torsional behavior of materials with various configuration and also combine the deflection and torsional behavior of	K2



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				helical springs, carriage springs	
			C202.5	Apply the biaxial state of stress concept on thin and thick cylinders	K3
3	II / III	ME6301 - Engineering Thermodynamics	C202.1	Describe the mechanical behavior of materials under stress with axial load, thermal load and compute the principal stress and principal strain by Mohr's circle.	K1
			C202.2	Calculate the shear force and bending moment for the different types of beams with various types of loading condition	K4
			C202.3	Use the concept of deflection of beams by various methods	K2
			C202.4	Explain the concept of torsional behavior of materials with various configuration and also combine the deflection and torsional behavior of helical springs, carriage springs	K2
			C202.5	Apply the biaxial state of stress concept on thin and thick cylinders	K3
4	II / III	CE6451 - Fluid Mechanics and Machinery	C204.1	Apply mathematical knowledge to predict the properties and characteristics of a fluid.	K3
			C204.2	Analyze and calculate major and minor losses associated with pipe flow in piping networks.	K4
			C204.3	Mathematically predict the nature of physical quantities	K4
			C204.4	Critically analyze the performance of pumps	K3
			C204.5	Critically analyze the performance of turbines	K3
5	II / III	ME6302 - Manufacturing Technology - I	C205.1	Describe special casting processes and sand testing methods	K1
			C205.2	Differentiate the various welding process and its application	K2
			C205.3	Classify the hot working and cold working operation and its rolling defect	K4



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			C205.4	Explain sheet metal characteristics and various special forming processes	K2
			C205.5	Compare thermoplastic and thermosetting plastic and its manufacturing methods	K2
6	II / III	EE6351 - Electrical Drives and Controls	C206.1	Explain the elements of electrical drives	K2
			C206.2	Outline drive motor characteristics	K2
			C206.3	Summarize the starting method of DC and AC motors	K2
			C206.4	Illustrate the conventional speed control of DC and AC drives	K2
			C206.5	Infer the concepts of Solid State speed Control of DC and AC drives	K2
7	II / III	ME6311(L) - Manufacturing Technology Laboratory - I	C207.1	Perform the taper turning operation for a given specification.	K1
			C207.2	Perform thread cutting operation as per the diagrams and compare with standard thread gauges.	K2
			C207.3	Calculate the eccentricity value for the required stroke length and practice eccentricity turning operation in a lathe.	K3
			C207.4	Produce square head using shaper machine as per given drawing and estimate the machining time.	K5
			C207.5	Calculate the material removal rate and perform Hexagonal head shaping on a given cylindrical work piece as per given drawing.	K4
8	II / III	CE6461(L) - Fluid Mechanics and Machinery Laboratory	C208.1	Measure the discharge of fluid flow in a pipe by using different flow measurement devices	K5
			C208.2	Calculate the energy losses of friction in a pipe flow for various flow conditions	K4
			C208.3	Perform the characteristics of positive displacement and dynamic pumps	K4
			C208.4	Determine the efficiency of impulse and reaction	K3



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				turbine in various load conditions	
			C208.5	Compare the performance characteristics of pumps and turbines	K2
9	II / III	EE6365(L) - Electrical Engineering Laboratory	C209.1	Determine the load characteristics of various DC motors and Generators	K2
			C209.2	Draw the equivalent circuit of transformer	K2
			C209.3	Predetermine the voltage regulation of an alternator	K3
			C209.4	Sketch the characteristics of three phase synchronous and induction motors	K2
			C209.5	Differentiate various types of D.C. and A.C. motor starters	K4

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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)	Knowledge Level	
1	II / IV	MA6452 Statistics and Numerical Methods	C210.1	Test the Hypothesis in various decision making problems.	K3
			C210.2	Apply the design of experiments techniques in various engineering problems.	K3
			C210.3	Apply the numerical techniques to find approximate solution of linear system of equations and to find dominant Eigen value.	K3
			C210.4	Interpret the data and find the approximate value of the Integrals using different numerical techniques.	K2
			C210.5	Find numerical solutions of initial value problems of ordinary differential equations.	K3



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2	II / IV	ME6401 - Kinematics of Machinery	C211.1	Apply the fundamental principle of kinematics in various parts of the machine.	K3
			C211.2	Determine the velocity and acceleration of simple and complex mechanisms.	K3
			C211.3	Draw the cam profile layouts and determine velocity and acceleration of cams.	K3
			C211.4	Identify the types of gears and determine the nomenclature of various gear and gear trains.	K1
			C211.5	Compute the fundamentals of friction and solve the problems in belt drive, brakes, clutch, bearings and screw jacks.	K5
3	II / IV	ME6402 - Manufacturing Technology– II	C212.1	Explain the theory of metal cutting processes.	K2
			C212.2	Describe the different types of turning machines used for metal cutting.	K1
			C212.3	Discuss the construction and working principle of shaper, milling and gear cutting machines.	K2
			C212.4	Explain different types of broaching machines and grinding machines.	K2
			C212.5	Demonstrate the programming in CNC lathe and CNC milling machines.	K4
4	II / IV	ME6403 - Engineering Materials and Metallurgy	C213.1	Discuss about the Iron-Carbon Equilibrium Phase Diagram for understanding different Phases	K2
			C213.2	Apply the various heat treatment process in order improve the mechanical properties.	K3
			C213.3	Explain the various types of steel, cast iron and Strengthening Mechanisms.	K2
			C213.4	Classify the various types of Non-Metallic materials with application.	K3
			C213.5	Explain the various Mechanical testing methods for a Metallic and Non-metallic materials.	K2



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5	II / IV	GE6351 - Environmental Science and Engineering	C214.1	Understand the importance of public awareness on environment and nature of biodiversity.	K1
			C214.2	Know about the various causes, effect and control measures of environmental pollution.	K2
			C214.3	Comprehend the human development that leads to environmental disasters, the value of natural resources and their conservation.	K4
			C214.4	Recognize the value of public participation in environmental protection, Environmental Management and Legislation Acts and sustainable development.	K2
			C214.5	Learn the problems related to population and their remedial measures.	K2
6	II / IV	ME6404 Thermal Engineering	C215.1	Compare the performance characteristics of various gas power cycles under same working limits.	K4
			C215.2	Demonstrate the working principle of internal combustion engine and its components for the optimum performance	K2
			C215.3	Calculate the performance parameters of steam nozzle and turbine under various working conditions	K4
			C215.4	Determine the various efficiencies of positive displacement compressors at constant pressure ratio	K3
			C215.5	Describe the thermodynamic cycles involved in refrigeration and processes of air conditioning system	K1
7	II / IV	ME6411 - Manufacturing Technology Laboratory - II	C215.1	Analyze the various stresses on mild steel rod by conducting tension and torsion tests	K4
			C215.2	Identify deflection test of metals and carriage springs	K3
			C215.3	Test for compression strength of wood and helical	K4



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				springs	
			C215.4	Compare hardness and impact strength of different metals	K4
8	II / IV	ME6412 - Thermal Engineering Laboratory - I	C217.1	Determine the flash and fire point of different fuel and lubricants	K3
			C217.2	Draw the valve timing and port timing diagram for a given four stroke and two stroke engine.	K3
			C217.3	Compare the performance of single cylinder Diesel Engine with different loading conditions	K2
			C217.4	Calculate the Indicated thermal efficiency by conducting Morse test on multi-cylinder petrol engine	K4
			C217.5	Evaluate the performance of steam generator and steam turbine at different load Conditions.	K5
9	II / IV	CE6315- Strength of Materials Laboratory	C218.1	Perform different destructive testing.	K2
			C218.2	Compare Characteristics of material.	K4
			C218.3	Utilize appropriate materials in design considering engineering properties, sustainability, cost and weight.	K2
			C218.4	Perform engineering work in accordance with ethical and economic constraints related to the design of structures and machine parts.	K2
			C218.5	Analyze and design structural members subjected to tension, compression, torsion, bending and combined stresses using the fundamental concepts of stress, strain and elastic behavior of materials.	K4



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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)	Knowledge Level	
1	III / V	ME6501 - Computer Aided Design	C301.1	Illustrate the various transformation techniques in computer graphics.	K1
			C301.2	Elaborate the operational features of geometric modeling.	K2
			C301.3	Explain various algorithms in visual realism.	K2
			C301.4	Describe the mechanism simulation in assembly of parts.	K1
			C301.5	Discuss the importance of graphics and computing standards.	K2
2	III / V	ME6502 - Heat and Mass Transfer	C302.1	Solve steady and unsteady state heat conduction problems in one- dimensional heat transfer condition.	K3
			C302.2	Calculate heat transfer coefficients for natural and forced convection of flow over exterior surfaces and inside the tubes using empirical equations.	K4
			C302.3	Perform basic calculation of phase change heat transfer and heat exchangers to determine relevant design parameters.	K2
			C302.4	Predict the properties of surfaces and heat transfer rate in radiation mode.	K2
			C302.5	Illustrate concepts of mass transfer principles and its correlations.	K3
3	III / V	ME6503 Design of Machine Elements	C303.1	Determine the safe design parameters using appropriate failure theories involved in designing process	K3
			C303.2	Estimate the safe design parameters of the Shafts	K2



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				and Couplings	
			C303.3	Design the safe design parameters of Temporary and Permanent joints	K5
			C303.4	Determine the safe design parameters of the Energy Storing Elements and Engine Components	K2
			C303.5	Find the safe design parameters of Bearings	K5
4	III / V	ME6504 Metrology and Measurements	C304.1	Discuss the errors in measurements with types of control and its standards	K2
			C304.2	Describe the principle of various measuring instruments used for linear and angular measurements	K1
			C304.3	Explain the working of advanced measuring instruments in metrology	K2
			C304.4	Illustrate the principle and methods of form measurements	K3
			C304.5	Detail the principle of instruments used in measurements of power, flow and temperature	K2
5	II / IV	ME6505 Dynamics of Machines	C304.1	Discuss the errors in measurements with types of control and its standards	K2
			C304.2	Describe the principle of various measuring instruments used for linear and angular measurements	K1
			C304.3	Explain the working of advanced measuring instruments in metrology	K2
			C304.4	Illustrate the principle and methods of form measurements	K3
			C304.5	Detail the principle of instruments used in measurements of power, flow and temperature	K2
6	III / V	GE6075 Professional	C306.1	Describe the importance of human values from perspective of engineers.	K1



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		Ethics in Engineering	C306.2	Explain different theories on moral development.	K2
			C306.3	Discuss the codes of ethics for engineers and roles of engineers as experimenters.	K2
			C306.4	Describe about safety, risk and to recognize the different responsibilities and rights of engineers.	K2
			C306.5	Interpret the different roles of engineers with regards to present global scenario.	K4
7	III / V	ME6511-Dynamics Laboratory	C307.1	Analyze the kinematics of two-dimensional (planar) rigid-body motion	K4
			C307.2	Use concepts of angular displacement, angular velocity and angular acceleration	K1
			C307.3	Gear mechanism classification and gear train analysis, and familiarity with gear standardization and specification in design	K4
			C307.4	Determine the natural frequency of various vibratory systems and whirling speed of shaft	K2
			C307.5	Compare the performance characteristics of various governors	K4
8	III / V	ME6512(L)-Thermal Engineering Laboratory-II	C308.1	Determine the thermal conductivity of insulating material, insulating powder and composite wall	K3
			C308.2	Evaluate the convective heat transfer coefficient of air under natural and forced convective heat transfer	K5
			C308.3	Calculate efficiency of fluidized bed cooling tower and reciprocating air compressor	K3
			C308.4	Compare the effectiveness and efficiency of counter flow and parallel flow heat exchanger	K2
			C308.5	Evaluate the psychrometric properties of air-vapour mixtures in various processes associated with air conditioning system and refrigeration system	K5
9	III / V	ME6513 (L)-Metrology and	C309.1	Discuss the errors in measurements with types of control and its standards.	K2



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	Measurements Laboratory	C309.2	Describe the principle of various measuring instruments used for linear and angular measurements	K2
		C309.3	Explain the working of advanced measuring instruments in metrology	K3
		C309.4	Illustrate the principle and methods of form measurements	K3
		C309.5	Detail the principle of instruments used in measurements of power, flow and temperature	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)	Knowledge Level	
1	III / VI	ME6601- Design of Transmission Systems	C310.1	Solve the problems on power transmission by selecting suitable Flat belts and 'V' belts, Chains and Ropes.	K3
			C310.2	Design the power transmission systems operated by spur and helical gears.	K6
			C310.3	Determine the various parameters of bevel and worm gears for different transmission systems.	K3
			C310.4	Construct the Ray diagram and Kinematic diagram for various types of gear boxes.	K6
			C310.5	Design of Cams, Clutches and various types of brakes.	K6
2	III / VI	MG6851- Principles of Management	C311.1	Discuss the evolution of management, functions and roles of managers	K2
			C311.2	Explain the different types of planning process and tools used for planning	K2
			C311.3	Elaborate different organization structures and	K2



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				functions of human resources manager	
			C311.4	Illustrate the different theories of motivation and leadership	K2
			C311.5	Describe the control techniques and the role of technology in management	K1
3	III / VI	ME6602 Automobile Engineering	C312.1	Identify the different parts of vehicle structure and components of automobile engine.	K1
			C312.2	Explain the working principle of various parts of engine auxiliary systems.	K2
			C312.3	Describe the operation of various devices in transmission systems.	K2
			C312.4	Discuss the working principle of steering, brakes and suspension systems.	K2
			C312.5	Compare the performance and emission characteristics of various alternative sources for automotive.	K2
4	III / VI	ME6603 Finite Element Analysis	C313.1	Summarize the basics of finite element formulation.	K2
			C313.2	Apply finite element formulations to solve one dimensional Problems.	K3
			C313.3	Apply finite element techniques to formulate and solve structural, fluid, and thermal problems using finite element methodology.	K3
			C313.4	Select appropriate space (planar (plane stress or strain), axisymmetric, or spatial), idealization (type of element), and modeling techniques	K4
			C313.5	Use finite element methods for solving time-dependent and/or non-linear problems.	K3
5	III / VI	ME6604 Gas Dynamics and Jet Propulsion	C314.1	Apply the concept of compressible flows in variable area ducts.	K2
			C314.2	Apply the concept of compressible flows in constant area ducts.	K6



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			C314.3	Examine the effect of compression and expansion waves in compressible flow.	K3
			C314.4	Use the concept of gas dynamics in Jet Propulsion.	K2
			C314.5	Apply the concept of gas dynamics in Space Propulsion.	K2
6	III / VI	ME6004 Unconventional Machining Processes	C316.1	Explain various unconventional machining processes.	K2
			C316.2	Express the influence of difference process parameters on the performance and their applications of AJM, WJM, AWJM and USM.	K2
			C316.3	Discuss the principle construction and working of EDM with process parameters and applications	K2
			C316.4	Elaborate the principle, construction and Working of Electrochemical machining, Electrochemical grinding and Electrochemical honing with their process parameters and applications.	K2
			C316.5	Describe process principle, equipment and working of laser beam, plasma beam and electron beam machining.	K1
7	III / VI	ME6611- C.A.D. / C.A.M. Laboratory	C317.1	Design different parts of mechanical equipment's	K6
			C317.2	Apply skills in various designing and manufacturing industries	K3
			C317.3	Create 2D and 3D models using modeling software's	K6
			C317.4	Make appropriate selection of CAD functionality to use as tools in the design process	K6
			C317.5	Communicate effectively the geometry and intent of design features	K3
8	III / VI	ME6612 -Design and Fabrication Project	C318.1	Use the design principles and develop conceptual & engineering design of any components.	K6
			C318.2	Fabricate any components using different manufacturing tools.	K3



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9	III / VI	GE6674(L)- Communication and Soft Skills - Laboratory Based	C319.1	Listen and interpret visuals, involve in formal and informal conversations, make presentations, and participate in GD.	K2
			C319.2	Solve reading comprehension passages of higher levels, draft Resume, cover letter, reports, emails, and write blogs.	K3
			C319.3	Possess knowledge about IELTS, TOEFL, GRE, and placement oriented verbal ability.	K1
			C319.4	Perform well in a job interview with the non-verbal and paralinguistic skills acquired.	K2
			C319.5	Exhibit leadership traits, team skills and essential soft skills and efficiency to excel as a professional.	K1

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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)	Knowledge Level	
1	IV / VII	ME6701 Power Plant Engineering	C401.1	Describe the various systems of coal based thermal power plant	K1
			C401.2	Explain the various cycles and systems in Diesel, gas and combined cycle power plant	K2
			C401.3	Describe the working of nuclear reactors in nuclear power plant	K1
			C401.4	Explain the principle/ construction and working of hydroelectric and various non-conventional power plants.	K2
			C401.5	Examine energy, economic and environmental issues of power plant.	K3
2	IV / VII	ME6702 Mechatronics	C402.1	Apply the fundamental concepts of sensors in various applications.	K3



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			C402.2	Describe the functions of 8085 Microprocessor and their interface.	K2
			C402.3	Explain the various features of Programmable Peripheral Interface in general applications.	K2
			C402.4	Develop the structure and programming of PLC to control the actuation systems.	K3
			C402.5	Discuss the concepts of Mechatronics design approach into various domestic applications.	K2
3	IV / VII	ME6703 Computer Integrated Manufacturing Systems	C403.1	Explain the basic concepts of CAD, CAM and computer integrated manufacturing systems.	K2
			C403.2	Summarize the production planning and control and computerized process planning.	K4
			C403.3	Differentiate the different coding systems used in group technology.	K2
			C403.4	Explain the concepts of flexible manufacturing system (FMS) and automated guided vehicle (AGV) system.	K2
			C403.5	Classification of robots used in industrial applications.	K4
4	IV / VII	GE6757 Total Quality Management	C404.1	Discuss the contributions of Quality Guru.	K2
			C404.2	Explain the principles of TQM.	K2
			C404.3	Apply the tools and techniques of quality management to manufacturing and service processes.	K3
			C404.4	Describe TQM tools and techniques such as Control Charts, QFD and TPM.	K2
			C404.5	Discuss the elements of Quality system standards	K2
5	IV / VII	ME6005 Process Planning and Cost Estimation	C405.1	Recall the steps involved in process planning	K1
			C405.2	Summarize the procedure and parameters required for process planning activities	K1



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			C405.3	Explain the importance of costing and estimation procedures	K2
			C405.4	Estimate the cost for various shops	K2
			C405.5	Estimate the machining time required for drilling, boring, milling, planning and grinding etc.	K4
6	IV / VII	ME6012 Maintenance Engineering	C408.1	Describe the basic principles in maintenance	K1
			C408.2	Able to identify the role of preventive maintenance	K2
			C408.3	Summarize the various processes involved in condition monitoring	K2
			C408.4	Explain the influence of failure analysis in basic machine elements	K2
			C408.5	The students will be able to compute the principles of material handling equipment and the use of computers in maintenance.	K2
7	IV / VII	ME6711- Simulation and Analysis Laboratory	C409.1	Demonstrate the engineering design problem that involves interaction between heat, stress and to generate the model using a proper element type, and then solve the problem	K6
			C409.2	Discretize, apply load and constrains for the given model	K6
			C409.3	Display the results such as Von Mises stress, displacement, temperature, pressure, and velocity etc. obtained from analysis	K5
			C409.4	Model, analyses and simulate experiments under real time environment and evaluate the performance	K6
			C409.5	Demonstrate the use of MATLAB software for multi-physic type of problems	K4
8	IV / VII	ME6712- Mechatronics Laboratory	C410.1	Summaries how mechatronics integrates knowledge from different disciplines in order to realize engineering and consumer products that are useful in everyday life	K2



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			C410.2	Design the mechatronics circuits for suitable applications	K6
			C410.3	Demonstrate the functions of 8051 microcontroller and their interface	K4
			C410.4	Simulate the various pneumatic and hydraulic circuits for real time applications	K6
			C410(L).5	Select suitable actuators and sensors and integrate them for suitable applications	K5
9	IV / VII	ME6713 - Comprehension	C41.1	Comprehend any given problem related to mechanical engineering field.	K2
			C411.2	Apply knowledge of mathematics, science, and mechanical engineering.	K3
			C411.3	Solve the problems in the field for thermal sciences	K3
			C411.4	Improve the knowledge in field for manufacturing technology.	K1
			C411.5	Utilize the skills learned in the design domain	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)	Knowledge Level	
1	IV / VIII	MG6863 Engineering Economics	C412.1	Apply the fundamental concepts of sensors in various applications.	K3
			C412.2	Apply the fundamental concepts of sensors in various applications.	K3
			C412.3	Explain the various features of Programmable Peripheral Interface in general applications.	K2
			C412.4	Develop the structure and programming of PLC to	K3



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				control the actuation systems.	
			C412.5	Discuss the concepts of Mechatronics design approach into various domestic applications.	K3
2	IV / VIII	IE6605 Production Planning and Control	C413.1	Enumerate the activities involved in the Production Planning and Control function	K1
			C413.2	Explain the significance and applications of work study techniques	K2
			C413.3	Describe the process planning activities with reference to production control	K2
			C413.4	Discuss the concepts of production scheduling	K2
			C413.5	Explain different types of costs in inventory system	K2
3	IV / VIII	ME6019 Non Destructive Testing and Materials	C415.1	Discuss the concept of NDT and materials	K2
			C415.2	Explain the various processes involved in surface NDE	K2
			C415.3	Describe the role of eddy current and thermography testing in NDT	K2
			C415.4	Compare the principles of ultrasonic and acoustic testing	K2
			C415.5	Explain the influence of radiography testing in NDT	K2
4	IV / VIII	ME6016 -Advanced I.C. Engines	C416.1	Describe the different stages of combustion in spark ignition engine and the phenomenon of knocking	K2
			C416.2	Explain the different stages of combustion in compression ignition engine and the fuel spray behavior during injection	K2
			C416.3	Explain the chemistry behind the formation of pollutants in internal combustion engines	K2
			C416.4	Identify the suitability of different alternate fuels for spark and compression ignition	K2
			C416.5	Discuss the recent developments in Hybrid Vehicles and Onboard Diagnostics.	K2



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5	IV / VIII	ME6811- Project Work	C417.1	Take up any challenging practical problems and find solution by formulating proper methodology.	K4
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COURSE OUT COME REGULATION 2017

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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)	Knowledge Level	
1	I / I	HS8151 - Communicative English	C101.1	Communicate clearly both in the written form and orally using appropriate vocabulary and comprehend written texts to make inferences.	K2
			C101.2	Speak persuasively in different social contexts and write biographical details and technical documents cohesively, coherently and flawlessly using appropriate words.	K2
			C101.3	Speak, read and write effectively for a variety of professional and social settings.	K2
			C101.4	Read descriptive, narrative, expository and interpretive texts and write using creative, critical, analytical and evaluative methods.	K6
			C101.5	Listen, comprehend and respond to different spoken and written discourses/excerpts in different accents and write different genres of texts adopting various writing strategies.	K6
2	I / I	MA8151 - Engineering Mathematics - I	C102.1	Use both the limit definition and rules of differentiation to differentiate functions.	K3
			C102.2	Apply differentiation to solve maxima and minima problems	K3
			C102.3	Evaluate integrals both by using Reimann sums and by using the fundamental theorem of convergent improper integrals. Evaluate integrals using techniques of integration, such as substitution, partial Fractions, integration by parts and improper integrals.	K5
			C102.4	Apply integration to compute multiple integrals, area, volume, integrals in polar Coordinates, in addition to	K3



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				change of order and change of variables.	
			C102.5	Apply various techniques in solving differential equations.	K3
3	I / I	PH8151 - Engineering Physics	C103.1	Discuss the Young's modulus and Rigidity modulus of elasticity of materials and its determination through experimental methods .	K2
			C103.2	Describe the characteristics of laser light and their application in semiconductor laser .	K2
			C103.3	Discuss the principle behind the propagation of light through an optical fibre and its application in sensors.	K2
			C103.4	Summarize the different modes of heat transfer.	K2
			C103.5	Describe the unit cell characteristics and the growth of crystals	K2
4	I / I	CY8151 - Engineering Chemistry	C104.1	Summarize the water related problems in boilers and their treatment techniques.	K2
			C104.2	Discuss the applications of adsorption in the field of water and air pollution abatement.	K1
			C104.3	Discuss the types of catalysis and the mechanism of enzyme catalysis.	K2
			C104.4	Associate phase rule in the alloying and the behavior of one component and two component systems using phase diagram.	K2
			C104.5	Summarize the principles and generation of energy in batteries, nuclear reactors, solar cells, wind mills and fuel cells.	K2
5	I / I	GE8151- Problem Solving And Python	C105.1	Discuss the logical solutions through Flowcharts, Algorithms and Pseudo code	K2
			C105.2	Explain the syntax for python programming constructs.	K2
			C105.3	Compute the flow of the program to obtain the programmatic solution.	K2



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			C105.4	Examine the programs with sub problems using 'Python' language	K3
			C105.5	Compute the compound data using Python lists, tuples, and dictionaries	K2
6	I / I	GE8152- ENGINEERING GRAPHICS	C106.1	Sketch the conic sections, special curves, and draw orthographic views from pictorial views and models.	K4
			C106.2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.	K3
			C106.3	Sketch the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures.	K4
			C106.4	Practice the sectional views of solids like cube, prisms, pyramids, cylinders & cones and extend its lateral surfaces	K3
			C106.5	Sketch the perspective projection of simple solids, truncated prisms, pyramids, cone and cylinders and sketch the isometric projection of simple machine parts.	K4
7	I / I	GE8161- Problem Solving And Python Lab	C107.1	Write, test, and debug simple Python programs	K1
			C107.2	Apply the concept of conditionals and loops in Python programs.	K3
			C107.3	Develop the Python programs step-wise by defining functions and calling them.	K4
			C107.4	Use Python lists, tuples, dictionaries for representing compound data.	K3
			C107.5	Read and write data from/to files in Python.	K2
8	I / I	BS8161 - Physics And Chemistry Laboratory	C108.1	Apply physics principles of optics and thermal physics to evaluate engineering properties of materials.	K3
			C108.2	Ability to test materials by using their knowledge of applied physics principles in optics and properties of	K5



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			matter.	
		C108.3	Perform the quantitative chemical analysis of chloride and dissolved oxygen.	K5
		C108.4	Determine the amount of acids by using the instruments of conductivity meter and pH meter.	K5
		C108.5	Determine the hardness, alkalinity and metal ion content in the water samples by volumetric titration.	K5

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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)	Knowledge Level	
1	I / II	HS8251 - Technical English	C109.1	Read technical texts and write area specific texts effortlessly.	K2
			C109.2	Listen and comprehend lectures and talks in their areas of specialization and write effectively for a variety of professional and social settings	K2
			C109.3	Speak and write appropriately and effectively in varied formal and informal contexts.	K6
			C109.4	Write effectively and persuasively and produce different types of writing such as letters, minutes, reports and winning job applications.	K6
			C109.5	Communicate clearly using technical vocabulary in their professional correspondences	K2
2	I / II	MA8251 Engineering Mathematics - II	C110.1	Calculate the eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices	K3
			C110.2	Evaluate the line, surface and volume integrals using Gauss, Stokes and Green's theorems and their	K5



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				verification	
			C110.3	Determine Analytic functions, Conformal mapping and Bilinear transformation	K3
			C110.4	Evaluate the Cauchy's integrals, Taylor's and Laurent's and residue theorem for evaluation for real integrals using circular and semicircular, contour	K5
			C110.5	Evaluate Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.	K5
			C110.6	Discuss Laplace Transform methods to solve initial value problems for constant coefficient linear ODEs.	K2
3	I / II	PH8201 –Material Science	C111.1	Analyze the thermal performance of buildings.	K2
			C111.2	Acquire knowledge on the acoustic properties of buildings.	K1
			C111.3	Understand the various lighting design of buildings.	K2
			C111.4	Knowledge on the properties and performance of engineering materials	K3
			C111.5	Understand the Hazards of buildings.	K2
4	I / II	BE8251 - Basic Electrical And Electronics Engineering	C112.1	Understand the electrical circuit and their working principles	K2
			C112.2	Identify the electrical components of a machines and their applications	K2
			C112.3	Explain the characteristics of the electrical machines	K2
			C112.4	Identify the digital electronics circuits and their components	K2
			C112.5	Explain the fundamentals of communication systems	K2
5	I / II	GE8291- Environmental	C113.1	Summarize the values, threats, conservation of biodiversity and ecosystems.	K2



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		Science And Engineering	C113.2	Discuss the sources, effects, control measures of different types of pollution, and solid waste management.	K1
			C113.3	Associate the effects of exploitation of Natural resources on environment	K3
			C113.4	Summarize the water conservation methods and various environmental acts for environmental sustainability	K2
			C113.5	Discuss scientific, technological, economic and social solutions to environmental problems	K1
6	I / II	GE8292 - Engineering Mechanics	C114.1	Illustrate the vectorial and scalar representation of forces and moments	K3
			C114.2	Analyse the rigid body in equilibrium	K3
			C114.3	Evaluate the properties of surfaces and solids	K3
			C114.4	Calculate dynamic forces exerted in rigid body	K3
			C114.5	Determine the friction and the effects by the laws of friction	K3
7	I / II	GE8261 - Engineering Practices Laboratory	C115.1	Construct carpentry components and pipe connections including plumbing works.	K3
			C115.2	Use welding equipment's to join the structures.	K3
			C115.3	Carry out the basic machining operations.	K2
			C115.4	Create the models using sheet metal works.	K6
			C115.5	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundry and fittings	K3
			C115.6	Create Electrical and Electronics circuits.	K6
			C115.7	Design the simple electrical circuits based on the applications.	K6
			C115.8	Solder the electrical and electronic devices and components in the PCB.	K6



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			C115.9	Explain the functioning of electrical and electronic circuits.	K4
8	I / II	CE8211 - Computer Aided Building Drawing Laboratory	C116.1	Draft the plan, elevation and sectional views of the buildings, using computer softwares	K3
			C116.2	Draft the plan, elevation and sectional views of the industrial structures using computer softwares	K3
			C116.3	Draft the plan, elevation and sectional views of the framed buildings using computer softwares	K3

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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)	Knowledge Level	
1	II / III	MA8353 - Transforms And Partial Differential Equations	C201.1	Understand how to solve the given standard partial differential equations.	K1
			C201.2	Solve differential equations using Fourier series analysis which plays a vital role in engineering applications.	K3
			C201.3	Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat flow problems and one dimensional wave equations.	K4
			C201.4	Understand the mathematical principles on transforms and partial differential equations would provide them the ability to formulate and solve some of the physical problems of engineering.	K2
			C201.5	Use the effective mathematical tools for the solutions of partial differential equations by using Z transform techniques for discrete time systems.	K2
2	II / III	ME8391 Engineering Thermodynamics	C202.1	Apply the first law of thermodynamics for simple open and closed systems under steady and unsteady conditions	K3



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			C202.2	Apply second law of thermodynamics to open and closed systems and calculate entropy and availability	K3
			C202.3	Apply Rankine cycle to steam power plant and compare few cycle improvement methods	K3
			C202.4	Derive simple thermodynamic relations of ideal and real gases	K3
			C202.5	Calculate the properties of gas mixtures and moist air and its use in psychrometric processes	K3
3	II / III	CE8394 Fluid Mechanics and Machinery	C203.1	Apply mathematical knowledge to predict the properties and characteristics of a fluid	K3
			C203.2	Analyze and calculate major and minor losses associated with pipe flow in piping networks	K3
			C203.3	Mathematically predict the nature of physical quantities	K3
			C203.4	Critically analyze the performance of pumps	K2
			C203.5	Critically analyze the performance of turbines	K2
4	II / III	ME8351 Manufacturing Technology-I	C204.1	Explain different metal casting processes, associated defects, merits and demerits	K2
			C204.2	Compare different metal joining processes.	K3
			C204.3	Summarize various hot working and cold working methods of metals.	K3
			C204.4	Explain various sheet metal making processes.	K3
			C204.5	Distinguish various methods of manufacturing plastic components	K2
5	II / III	Electrical Drives and Controls	C205.1	Illustrate heating and cooling curves with factors influencing the choice of electrical drives.	K2
			C205.2	Explain different types of electrical machines and their performances.	K2
			C205.3	Employ various starting methods in electrical motors.	K2



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			C205.4	Apply various methods adopted in conventional and solid state speed control of DC drives.	K2
			C205.5	Use various methods adopted in conventional and solid state speed control of AC drives.	K4
6	II / III	ME8361 Manufacturing Technology Laboratory – I	C206 .1	Demonstrate the safety precautions exercised in the mechanical workshop.	K2
			C206 .2	Make the work piece as per given shape and size using Lathe.	K2
			C206 .3	Join two metals using arc welding.	K2
			C206 .4	Use sheet metal fabrication tools and make simple tray and funnel.	K2
			C206 .5	Use different moulding tools, patterns and prepare sand moulds.	K2
7	II / III	ME8381 Computer Aided Machine Drawing	C207.1	Follow the drawing standards, Fits and Tolerances	K2
			C207.2	Re-create part drawings, sectional views and assembly drawings as per standards	K2
			C207.3	Describe Indian Standards on drawing practices and standard components	K2
			C207.4	Sketch drawings of machine components	K3
			C207.5	Construct drawings both manually and using standard CAD packages	K2
8	II / III	EE8361 Electrical Engineering Laboratory	C208.1	Determine the load characteristics of DC motors and Generators.	K3
			C208.2	Draw the equivalent circuit of transformer.	K4
			C208.3	Predetermine the voltage regulation of an alternator.	K3
			C208.4	Sketch the characteristics of three phase synchronous and induction motors.	K3
			C208.5	Differentiate various types of D.C. and A.C. motor starters.	K4



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9	II / III	HS8381 Interpersonal Skills / Listening & Speaking	C209.1	Speak effectively on various academic topics and respond to questions.	K2
			C209.2	Converse effectively with the use of conversation starters and discourse markers.	K2
			C209.3	Listen and respond to various academic dialogues and discussions.	K1
			C209.4	Participate confidently and appropriately in informal and formal conversations and group discussions.	K2
			C209.5	Use a range of presentation tools like PPT, Videos, and Charts etc. to make an engaging presentation.	K2

PROGRAMME: MECHANICAL ENGINEERING	DEGREE: UG	A.Y: 2018-2019	SEMESTER: 04
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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)	Knowledge Level	
1	II / IV	MA8452 Statistics and Numerical Methods	C210.1	Apply the concept of testing of hypothesis for small and large samples in real life problems.	K3
			C210.2	Apply the basic concepts of classifications of design of experiments in the field of designing engineering problems.	K3
			C210.3	Appreciate the numerical techniques for solving algebraic, transcendental and system of linear equations.	K3
			C210.4	Make use the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems.	K3
			C210.5	Apply the knowledge of various techniques and methods for solving first order ordinary differential equations with initial and boundary conditions in engineering problems.	K3



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2	II / IV	ME8492 Kinematics of Machinery	C211.1	Discuss the basics of mechanism	K2
			C211.2	Calculate velocity and acceleration in simple mechanisms	K2
			C211.3	Draw CAM profiles	K2
			C211.4	Solve problems on gears and gear trains	K2
			C211.5	Examine friction in machine elements	K2
3	II / IV	ME8451 Manufacturing Technology-II	C212.1	Explain the mechanism of material removal processes.	K4
			C212.2	Describe the constructional and operational features of centre lathe and other special purpose lathes	K3
			C212.3	Describe the constructional and operational features of shaper, planner, milling, drilling, sawing and broaching machines.	K1
			C212.4	Explain the types of grinding and other super finishing processes apart from gear manufacturing processes.	K3
			C212.5	Summarize numerical control of machine tools and write a part program.	K3
4	II / IV	ME8491 Engineering Metallurgy	C213.1	Explain alloys and phase diagram, Iron-Iron carbon diagram and steel classification.	K2
			C213.2	Explain isothermal transformation, continuous cooling diagrams and different heat treatment processes.	K2
			C213.3	Clarify the effect of alloying elements on ferrous and non-ferrous metals	K2
			C213.4	Summarize the properties and applications of non-metallic materials.	K2
			C213.5	Explain the testing of mechanical properties.	K4
5	II / IV	CE8395 Strength of Materials for Mechanical	C214.1	Understand the concepts of stress and strain in simple and compound bars, the importance of principal stresses and principal planes.	K3



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		Engineers	C214.2	Understand the load transferring mechanism in beams and stress distribution due to shearing force and bending moment.	K2
			C214.3	Apply basic equation of simple torsion in designing of shafts and helical spring	K3
			C214.4	Calculate the slope and deflection in beams using different methods.	K3
			C214.5	Analyze and design thin and thick shells for the applied internal and external pressures	K2
6	II / IV	ME8493 Thermal Engineering – I	C215.1	Apply thermodynamic concepts of different air standard cycles and solve problems.	K3
			C215.2	Solve problems in single stage and multistage air compressors.	K3
			C215.3	Explain the functioning and features of I.C. engines, components and auxiliaries.	K3
			C215.4	Calculate performance parameters of I.C. Engines.	K3
			C215.5	Explain the flow in Gas turbines and solve problems.	K2
7	II / IV	ME8462 Manufacturing Technology Laboratory – II	C216.1	Design different parts of mechanical equipment's	K3
			C216.2	Apply skills in various designing and manufacturing industries	K3
			C216.3	Create 2D and 3D models using modeling software's	K6
			C216.4	Make appropriate selection of CAD functionality to use as tools in the design process	K6
			C216.5	Communicate effectively the geometry and intent of design features	K3
8	II / IV	CE8381 Strength of Materials and Fluid Mechanics and Machinery Laboratory	C217.1	Perform different destructive testing and Compare Characteristics of material	K4
			C217.2	Utilize appropriate materials in design considering engineering properties, sustainability, cost and weight	K3



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			C217.3	Perform engineering work in accordance with ethical and economic constraints related to the design of structures and machine parts	K3
			C217.4	Analyze and design structural members subjected to tension, compression, torsion, bending and combined stresses using the fundamental concepts of stress, strain and elastic behavior of materials	K4
			C217.5	Measure the discharge of fluid flow in a pipe by using different flow measurement devices	K5
			C217.6	Calculate the energy losses of friction in a pipe flow for various flow conditions	K3
			C217.7	Perform the characteristics of positive displacement and dynamic pumps	K6
			C217.8	Determine the efficiency of impulse and reaction turbine in various load conditions	K3
			C217.9	Compare the performance characteristics of pumps and turbines	K3
9	II / IV	HS8461 Advanced Reading and Writing	C218.1	Read and evaluate different types of texts critically and predict content.	K2
			C218.2	Write different types of essays using appropriate discourse markers.	K2
			C218.3	Display critical thinking in various professional contexts.	K2
			C218.4	Write winning job applications.	K2
			C218.5	Prepare technical documents like project proposals and statement of purpose	K2



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PROGRAMME: MECHANICAL ENGINEERING	DEGREE: UG	A.Y: 2019-2020	SEMESTER: 05
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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)		Knowledge Level
1	III / V	ME8595 Thermal Engineering II	C301.1	Solve problems in Steam Nozzle	K3
			C301.2	Explain the functioning and features of different types of Boilers and auxiliaries and Calculate performance parameters.	K3
			C301.3	Explain the flow in steam turbines, draw velocity diagrams for steam turbines and solve problems.	K2
			C301.4	Summarize the concept of Cogeneration, Working features of Heat pumps and Heat exchangers	K3
			C301.5	Solve problems using refrigerant table / charts and psychometric charts	K4
2	III / V	ME8593 - Design of Machine Elements	C302.1	Explain the influence of steady and variable stresses in machine component design.	K2
			C302.2	Apply the concepts of design to shafts, keys and couplings.	K3
			C302.3	Apply the concepts of design to temporary and permanent joints.	K3
			C302.4	Apply the concepts of design to energy absorbing members, connecting rod and crank shaft.	K3
			C302.5	Apply the concepts of design to bearings.	K3
3	III / V	ME8504 - Metrology and Measurements	C303.1	Describe the concepts of measurements to apply in various metrological Instruments.	K2
			C303.2	Outline the principles of linear and angular measurement tools used for industrial applications.	K3
			C303.3	Explain the procedure for conducting computer aided inspection.	K2



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			C303.4	Demonstrate the techniques of form measurement used for industrial components.	K2
			C303.5	Discuss various measuring techniques of mechanical properties in industrial Applications.	K2
4	III / V	ME8594 - Dynamics of Machines	C304.1	Calculate static and dynamic forces of mechanisms.	K3
			C304.2	Calculate the balancing masses and their locations of reciprocating and rotating masses.	K2
			C304.3	Compute the frequency of free vibration.	K2
			C304.4	Compute the frequency of forced vibration and damping coefficient.	K2
			C304.5	Calculate the speed and lift of the governor and estimate the gyroscopic effect on automobiles, ships and airplanes.	K2
5	II / IV	OAT551 Automotive System	C305.1	Recognize the various parts of the automotive engines and their functions and materials , discuss the engine auxiliary systems	K1
			C305.2	Recognize the various types of automotive chassis , Explain the Steering system	K1
			C305.3	Distinguish the working of different types of Transmission system	K2
			C305.4	Explain the Suspension systems, Brake system	K2
			C305.5	Predict possible alternate sources of energy for IC Engines and engine emission controls	K3
6	III / V	ME8511 Kinematics and Dynamics Laboratory	C306.1	Explain gear parameters and working of lab equipment's.	K2
			C306.2	Analyze the kinematics of mechanisms, gyroscopic effect and two-dimensional (planar) rigid-body motion.	K4
			C306.3	Determine mass moment of inertia of mechanical element, governor effort and range sensitivity and compare for different governors.	K3



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			C306.4	Determine the natural frequency and damping coefficient, torsional frequency and critical speeds of shafts.	K3
			C306.5	Analyze balancing mass of rotating and reciprocating masses and transmissibility ration.	K4
7	III / V	ME8512 Thermal Engineering Laboratory	C307.1	Conduct tests on heat conduction apparatus and evaluate thermal conductivity of materials.	K2
			C307.2	Conduct tests on natural and forced convective heat transfer apparatus and evaluate heat transfer coefficient.	K2
			C307.3	Conduct tests on radiative heat transfer apparatus and evaluate Stefan Boltzmann constant and emissivity.	K5
			C307.4	Conduct tests to evaluate the performance of parallel/counter flow heat exchanger apparatus and reciprocating air compressor.	K2
			C307.5	Conduct tests to evaluate the performance of refrigeration and air conditioning test rigs.	K4
8	III / V	ME8512 Metrology and Measurements Laboratory	C308.1	Measure the gear tooth dimensions, angle using sine bar, straightness and	K2
			C308.2	Conduct test for flatness, thread parameters, temperature using thermocouple, force, displacement, torque and vibration.	K5
			C308.3	Calibrate the vernier, micrometer and slip gauges and setting up the comparator for the inspection.	K5
			C308.4	Measure the components precisely using non-contact (optical) measurement system.	K3
			C308.5	Demonstrate the functions of Coordinate measuring machine and surface roughness tester for measuring complex profiles.	K2



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PROGRAMME: MECHANICAL ENGINEERING	DEGREE: UG	A.Y: 2019-20	SEMESTER: 06
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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)		Knowledge Level
1	III / VI	ME8601 - Design of Transmission Systems	C309.1	Apply the concepts of design to belts, chains and rope drives.	K3
			C309.2	Apply the concepts of design to spur, helical gears.	K4
			C309.3	Apply the concepts of design to worm and bevel gears	K4
			C309.4	Apply the Concepts of design to gear boxes.	K4
			C309.5	Apply the concepts of design to cams, brakes and clutches.	K3
2	III / VI	ME8691 - Computer Aided Design and Manufacturing	C310.1	Explain the 2D and 3D transformations, clipping algorithm, Manufacturing models and Metrics	K2
			C310.2	Explain the fundamentals of parametric curves, surfaces and Solids	K2
			C310.3	Summarize the different types of Standard systems used in CAD	K2
			C310.4	Apply NC & CNC programming concepts to develop part program for Lathe & Milling Machines	K2
			C310.5	Summarize the different types of techniques used in Cellular Manufacturing and FMS	K4
3	III / VI	ME8693 - Heat and Mass Transfer	C311.1	The students will be able to develop the knowledge about steady and unsteady state heat conduction in one dimensional heat transfer.	K2
			C311.2	The students will be able to understand the mechanism of natural and forced convection for different fluid flow.	K2
			C311.3	The students will be able to learn the various regimes of phase change heat transfer and design parameters	K1



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				of heat exchanger.	
			C311.4	The students will be able to acquire the concept radiation heat transfer mode for different surfaces.	K3
			C311.5	The students will be able to understand the mechanism of diffusion and convective mass transfer in stagnant and flow condition.	K2
4	III / VI	ME8692 - Finite Element Analysis	C312.1	Summarize the basics of finite element formulation.	K2
			C312.2	Apply finite element formulations to solve one dimensional Problem.	K3
			C312.3	Apply finite element formulations to solve two dimensional scalar Problems	K3
			C312.4	Apply finite element method to solve two dimensional Vector problems.	K4
			C312.5	Apply finite element method to solve problems on iso parametric element and dynamic Problems.	K2
5	III / VI	ME8694 - Hydraulics and Pneumatics	C313.1	Explain the Fluid power and operation of different types of pumps.	K3
			C313.2	Summarize the features and functions of Hydraulic motors, actuators and Flow control valves	K3
			C313.3	Explain the different types of Hydraulic circuits and systems	K2
			C313.4	Explain the working of different pneumatic circuits and systems	K3
			C313.5	Summarize the various trouble shooting methods and applications of hydraulic	K3
6	III / VI	PR8592 Welding Technology	C314.1	Understand the construction and working principles of gas and arc welding process.	K3
			C314.2	Understand the construction and working principles of resistance welding process.	K2
			C314.3	Understand the construction and working principles of various solid states welding process.	K2



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			C314.4	Understand the construction and working principles of various special welding processes.	K3
			C314.5	Understand the concepts on weld joint design, weld ability and testing of weld elements.	K2
7	III / VI	ME8681 CAD CAM Lab	C315.1	Design different parts of mechanical equipment's.	K4
			C315.2	Apply skills in various designing and manufacturing industries	K2
			C315.3	Create 2D and 3D models using modeling software's.	K6
			C315.4	Make appropriate selection of CAD functionality to use as tools in the design process.	K4
			C315.5	Explain effectively the geometry and intent of design features.	K3
8	III / VI	ME8682 Design and Fabrication Project	C316.1	Design the machine element or the mechanical product.	K2
			C316.2	Develop a 3D model of the designed product.	K3
			C316.3	Fabricate the machine element or the mechanical product.	K3
			C316.4	Demonstrate the working model of the machine element or the mechanical product.	K3
			C316.5	Prepare the necessary documents and reports for the final fabricated product	K2
9	III / VI	HS8581 Professional Communication	C 317.1	Cultivate intercultural communication skills, to guide students in making appropriate and responsible decisions, to develop leadership traits and soft skills and to create a desire to fulfill individual goals and team goals.	K6
			C 317.2	Help the learners acquire listening and speaking skills through lab based activities, and enable them to introduce themselves and make effective presentations.	K2
			C 317.3	Guide learners to evaluate their thinking skills, acquire listening and speaking skills and enable them	K4



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				to involve in group participation.	
			C 317.4	Teach various formats of interview, answering techniques, body language and paralinguistic skills.	K3
			C 317.5	Describe the prioritize learners' objectives and goals, to contribute and work as a team by creating more leadership opportunities.	K2

PROGRAMME: MECHANICAL ENGINEERING	DEGREE: UG	A.Y: 2020-21	SEMESTER: 07
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S.No	Year/ Sem	Course Name	Course Outcomes (The students should be able to)		Knowledge Level
1	IV / VII	ME6701 Power Plant Engineering	C401.1	Describe the layout, construction and working of the components of a thermal power plant	K2
			C401.2	Outline the layout, construction and working of the components of a Diesel, Gas and Combined cycle power plants	K2
			C401.3	Illustrate the layout, construction and working of the components of nuclear power plant	K2
			C401.4	Outline the layout, construction and working of the components of a Renewable energy power plants	K2
			C401.5	Explain about energy, economic and environmental issues of power plant	K2
2	IV / VII	ME8793 Process Planning and Cost Estimation	C405.1	Recall the steps involved in process planning	K1
			C405.2	Summarize the procedure and parameters required for process planning activities	K2
			C405.3	Explain the importance of costing and estimation procedures	K4
			C405.4	Estimate the cost for various shops	K5
			C405.5	Estimate the machining time required for drilling,	K5



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				boring, milling, planning and grinding etc.	
3	IV / VII	ME6702 Mechatronics	C402.1	Explain about various sensors and its working principles	K4
			C402.2	Design the microprocessor of 8085 and 8051	K4
			C402.3	Identify the program and the microcontroller	K3
			C402.4	Know about the functions, working and selection of PLC	K2
			C402.5	Design the mechatronic system with electrical and electronic circuits	K4
4	IV / VII	OIE751 ROBOTICS	C403.1	Summarize the basic concepts of industrial robotics and key components of robotics technologies.	K5
			C403.2	Summarize the robot drive systems, gripper sand various end effectors.	K5
			C403.3	Describe the various sensors and image processing & data reduction method for the control of robots.	K2
			C403.4	Analyze the various kinematics of robots and prepare the robot program.	K4
			C403.5	Explain the implementations of robots in industries and analyzing robot economics.	K2
5	IV / VII	ME8073 Unconventional Machining Process.	C404.1	Explain the need for unconventional machining processes and its classification	K2
			C404.2	Compare various thermal energy and electrical energy based unconventional machining processes.	K2
			C404.3	Summarize various chemical and electro-chemical energy based unconventional machining processes.	K2
			C404.4	Explain various Nano abrasives based unconventional machining processes.	K2
			C404.5	Distinguish various recent trends based unconventional machining processes.	K2
6	IV / VII	ME 8097 Non	C405.1	Discuss the concept of NDT and materials	K3



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		Destructive Testing and Evaluations	C405.2	Explain the various processes involved in surface NDE	K4
			C405.3	Describe the role of eddy current and thermography testing in NDT	K4
			C405.4	Compare the principles of ultrasonic and acoustic testing	K3
			C405.5	Explain the influence of radiography testing in NDT	K2
7	IV / VII	ME6711 Simulation and Analysis Laboratory	C406(L).1	Demonstrate the engineering design problem that involves interaction between heat, stress and to generate the model using a proper element type, and then solve the problem	K2
			C406.2	Discretize, apply load and constrains for the given model	K3
			C406.3	Display the results such as Von Mises stress, displacement, temperature, pressure, and velocity etc. obtained from analysis	K2
			C406.4	Model, analyse and simulate experiments under real time environment and evaluate the performance	K4
			C406.5	Demonstrate the use of MATLAB software for multi-physic type of problems	K2
8	IV / VII	ME6712 Mechatronics Laboratory	C407.1	Summaries how mechatronics integrates knowledge from different disciplines in order to realize engineering and consumer products that are useful in everyday	K2
			C407.2	Design the mechatronics circuits for suitable applications	K6
			C407.3	Demonstrate the functions of 8051 microcontroller and their interface	K2
			C407.4	Simulate the various pneumatic and hydraulic circuits for real time applications	K3
			C407.5	Select suitable actuators and sensors and integrate them for suitable applications	K2



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9	IV / VII	ME6713 Comprehension	C408.1	Comprehend any given problem related to mechanical engineering field.	K2
			C408.2	Apply knowledge of mathematics, science, and mechanical engineering.	K2
			C408.3	Solve the problems in the field for thermal sciences	K4
			C408.4	Develop the knowledge in field for manufacturing technology.	K6
			C408.5	Utilize the skills learned in the design domain	K2



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PG COURSE

COURSE OUT COME REGULATION 2013

PROGRAMME:STRUCTURAL ENGINEERING	DEGREE: PG	A.Y: 2015-16	SEMESTER: 01
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	I / I	MA7154 - ADVANCED MATHEMATIC AL METHOD	C101.1	Application of Laplace and Fourier transforms to initial value, initial-boundary value and boundary value problems in Partial Differential Equations.	K3
			C101.2	Maximizing and minimizing the functional that occur in various branches of Engineering Disciplines.	K2
			C101.3	Construction of conformal mappings between various domains and use of conformal mapping in studying problems in physics and engineering particularly to fluid flow and heat flow problems.	K3
			C101.4	Applications in applied sciences and engineering and develops ability to solve mathematical problems involving tensors.	K4
			C101.5	Competently use tensor analysis as a tool in the field of applied sciences and related fields.	K3
2	I / I	ST7101- CONCRETE STRUCTURES	C102.1	Design concepts of various concrete structures and structural elements by limit state design	K4
			C102.2	Design of the limit state design of RCC beams and columns	K4
			C102.3	Design special structures such as Deep beams, Corbels, Deep beams, and Grid floors	K4
			C102.4	Make the students confident to design the flat slab as per Indian standard, yield line theory and strip method.	K4
			C102.5	Design the beams based on limit analysis and detail the beams, columns and joints for ductility.	K4



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3	I / I	ST7102 - STRUCTURAL DYNAMICS	C103.1	Concept of free and forced vibration analysis of different systems.	K3
			C103.2	Design of structures subjected to dynamic responses of two degree of freedom and understand their application in building system.	K4
			C103.3	Design of structures subjected to dynamic responses of three degree of freedom and understand their application in building system.	K4
			C103.4	Mathematical model of dynamic response continuous system	K4
			C103.5	Analyse of multiple degree of freedom system for dynamic response	K4
4	I / I	ST7103 - THEORY OF ELASTICITY AND PLASTICITY	C104.1	Concept of elastic analysis of plane stresses problems	K3
			C104.2	Concept of elastic analysis of plane strains problems	K3
			C104.3	Analyse the concept of shear stress and strain in non circular sections	K4
			C104.4	Design of the beams on elastic foundations.	K4
			C104.5	Knowledge in various theories of failures and plasticity.	K4
5	I / I	CN7001- ADVANCED CONCRETE TECHNOLOGY	C105.1	Discuss the concrete ingredients and its influence at gaining strength.	K3
			C105.2	Analyse the different properties of concrete such as strength, creep and shrinkage	K3
			C105.3	Design the concrete mix and grade as per IS codes	K4
			C105.4	Design and develop the the self compacting and high performance concrete.	K4
			C105.5	Summarise the concept of conventional concrete	K4



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				making methods.	
6	I / I	ST7002- MAINTENANCE AND REHABILITATION OF STRUCTURES	C106.1	Explain and suggest maintenance and repair strategies	K2
			C106.2	Apply the concept of durability due to various climatic conditions	K3
			C106.3	explain the suitable materials and techniques for repair	K2
			C106.4	choose various retrofitting and rehabilitation techniques	K3
			C106.5	select the suitable strengthening the techniques for structures	K3

PROGRAMME:STRUCTURAL ENGINEERING	DEGREE: PG	A.Y: 2015-16	SEMESTER: 02
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	I / II	ST7201 - FINITE ELEMENT ANALYSIS	C107.1	Understand the basic concepts of FEM, types of elements	K2
			C107.2	Analyse one dimensional problems and co-ordinate systems	K3
			C107.3	Analyse two dimensional problems and higher order elements	K3
			C107.4	Understand the concept of mesh generation, techniques and error evaluation	K2
			C107.5	Illustrate the software application of finite element analysis	K2
2	I / II	ST7202 -EXPERIMENTAL	C108.1	Understand the principles of strain measuring devices	K2



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		TECHNIQUES AND INSTRUMENTATION	C108.2	Explain the principles of vibration and wind flow measurig devices	K2
			C108.3	Understand the concept of distress management and structural health monitoring.	K2
			C108.4	Summarize the non destructive testing methods of structures	K2
			C108.5	Illustrate the needs and application of model analysis	K2
3	I / II	ST7203 - STEEL STRUCTURES	C109.1	Analyse and design the purlin,Louver rails, Gable column and Gable wind girder, guesseted base	K4
			C109.2	Analyse and design the different types od connection in steel members	K4
			C109.3	Analyse and design the industrial buildings	K4
			C109.4	Analyse and design the members buy plastic analysis	K4
			C109.5	Analyse and design the light gauge steel structures	K4
4	I / II	ST7204 - EARTHQUAKE ANALYSIS AND DESIGN OF STRUCTURES	C110.1	Understand the concept of engineering seismology, zoning, characteristics of strong earthquake motion	K2
			C110.2	Explain the effect of earthquake on different structures.	K2
			C110.3	Illustrate the principles and philisophies of earthquake resistant design	K2
			C110.4	Summarize the methods of earthquake resistant design of RC structures	K2
			C110.5	Explain thedifferent vibration control techniques and its application	K2
5	I / II	ST7006 DESIGN OF BRIDGES	C111.1	Analyse and design the short span RC bridges	K4
			C111.2	Apply the design principles recommended by IS for long span RC bridges	K4



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			C111.3	Analyse and design prestressed concrete bridges.	K4
			C111.4	Analyse and design the steel bridges	K4
			C111.5	Analyse and design the bearing and foundations	K4
6	I / II	ST7008 - PRE STRESSED CONCRETE	C112.1	Understand principles, types of prestressing and method of analysis	K3
			C112.2	Analyse and design the flexural members.	K4
			C112.3	Analyse and design the continuous beams	K4
			C112.4	Analyse and design the tension and compression members	K4
			C112.5	Analyse and design the composite members	K4
7	I / II	ST7211 - ADVANCED STRUCTURAL ENGINEERING LABORATORY	C113.1	Cast and test RC beams for strength and deformation behaviour.	K5
			C113.2	Test dynamic testing on steel beams, static cyclic load testing of RC frames	K5
			C113.3	Analysis of non-destruction testing on concrete.	K5

PROGRAMME:STRUCTURAL ENGINEERING	DEGREE: PG	A.Y: 2016-2017	SEMESTER: 03
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	II / III	ST7013- DSIGN OF STEEL CONCRETE COMPOSITE STRUCTURES	C201.1	Concept of concrete composite construction, serviability and construction issues.	K2
			C201.2	Design of connections in composite structures	K4



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			C201.3	Design of composite members and trusses.	K4
			C201.4	Behaviour of composite box girder bridges	K4
			C201.5	Seismic behaviour of composite structures.	K4
2	II / III	ST7014- INDUSTRIAL STRUCTURES	C202.1	Planning and functional requirement of industrial structures	K2
			C202.2	Design the various structural members in Steel and RCC Ijke Gantry Girder, Crane Girders , Corbels and Nibs ,Staircase.	K4
			C202.3	Design the powerplant structures like cooling towers ,bunkers and silos	K4
			C202.4	Analyse and design of transmission line towers	K4
			C202.5	Design of foundation for Towers, Chimneys and Cooling Towers	K4
3	II / III	ST7016 - PREFABRICATE D STRUCTURES	C203.1	Principles of prefabrication, Modular co-ordination, Standardization	K2
			C203.2	Explain the behaviour of long wall, cross-wall large panel buildings, one way and two way prefabricated slabs, Framed buildings with partial and curtain walls	K2
			C203.3	Summarize the behaviour of floors, stairs and roofs	K2
			C203.4	Illustrate the behaviour of joints in walls and design of shear walls	K2
			C203.5	Understand the design concepts of prefabricated industrial buildings and shell roofs	K2
4	II / III	ST7311 - SEMINAR	C204.1	to face an audience and to tackle any problem during group discussion in the Interviews.	K3
			C204.2	to acquire writing abilities for seminars and conferences.	K3
			C204.3	to work on a specific technical topic in Structural Engineering and acquire the skills of written and oral	K3



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				presentation.	
5	II / III	ST7312- PRACTICAL TRAINING	C205.1	Develop field work so as to have a firsthand knowledge of practical problems related to Structural Engineering in carrying out engineering tasks.	K5
			C205.2	Develop skills in facing and solving the field problems.	K5
6	II / III	ST7313 - PROJECT WORK PHASE I	C206.1	Identify a specific problem for the current need of the society in structural Engineering	K2
			C206.2	Develop the methodology to solve the identified practical problem in structural Engineering	K5
			C206.3	Prepare project reports and to face reviews and viva-voce examination.	K6

PROGRAMME:STRUCTURAL ENGINEERING	DEGREE: PG	A.Y: 2016-2017	SEMESTER: 04
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)		Knowledge Level
1	II / IV	ST7411- PROJECT WORK PHASE II	C207.1	Solve the identified problem based on the formulated methodology.	K5
			C207.2	Develop skills to analyze and discuss the test results, and make conclusions	K6



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COURSE OUT COME REGULATION 2017

PROGRAMME: STRUCTURAL ENGINEERING	DEGREE: PG	A.Y: 2018-19	SEMESTER: 01
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level
1	I / I	MA5151 - ADVANCED MATHEMATIC AL METHODS	C101.1 Application of Laplace and Fourier transforms to initial value, initial-boundary value and boundary value problems in Partial Differential Equations.	K3
			C101.2 Maximizing and minimizing the functional that occur in various branches of Engineering Disciplines.	K2
			C101.3 Construction of conformal mappings between various domains and use of conformal mapping in studying problems in physics and engineering particularly to fluid flow and heat flow problems.	K3
			C101.4 Applications in applied sciences and engineering and develops ability to solve mathematical problems involving tensors.	K4
			C101.5 Competently use tensor analysis as a tool in the field of applied sciences and related fields.	K3
2	I / I	ST5101- ADVANCED CONCRETE STRUCTURES	C102.1 Design concepts of various concrete structures and structural elements by limit state design	K4
			C102.2 Design of the limit state design of RCC beams and columns	K4
			C102.3 Design special structures such as Deep beams, Corbels, Deep beams, and Grid floors	K4
			C102.4 Make the students confident to design the flat slab as per Indian standard, yield line theory and strip method.	K4
			C102.5 Design the beams based on limit analysis and detail the beams, columns and joints for ductility.	K4



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3	I / I	ST5102 - DYNAMICS OF STRUCTURES	C103.1	Concept of free and forced vibration analysis of different systems.	K3
			C103.2	Design of structures subjected to dynamic responses of two degree of freedom and understand their application in building system.	K4
			C103.3	Design of structures subjected to dynamic responses of three degree of freedom and understand their application in building system.	K4
			C103.4	Mathematical model of dynamic response continuous system	K4
			C103.5	Analyse of multiple degree of freedom system for dynamic response	K4
4	I / I	ST5103 - THEORY OF ELASTICITY AND PLASTICITY	C104.1	Concept of elastic analysis of plane stresses problems	K3
			C104.2	Concept of elastic analysis of plane strains problems	K3
			C104.3	Analyse the concept of shear stress and strain in non circular sections	K4
			C104.4	Design of the beams on elastic foundations.	K4
			C104.5	Knowledge in various theories of failures and plasticity.	K4
5	I / I	ST5001- MAINTENANCE AND REHABILITATION OF STRUCTURES	C105.1	Explain and suggest maintenance and repair strategies	K2
			C105.2	Apply the concept of durability due to various climatic conditions	K3
			C105.3	explain the suitable materials and techniques for repair	K2
			C105.4	choose various retrofitting and rehabilitation techniques	K3
			C105.5	select the suitable strengthening the techniques for	K3



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				structures	
6	I / I	ST5002- PREFABRICATED STRUCTURES	C106.1	principles of prefabrication, Modular co-ordination, Standardization	K2
			C106.2	explain the behaviour of long wall, cross-wall large panel buildings, one way and two way prefabricated slabs, Framed buildings with partial and curtain walls	K2
			C106.3	summarize the behaviour of floors, stairs and roofs	K2
			C106.4	illustrate the behaviour of joints in walls and design of shear walls	K2
			C106.5	understand the design concepts of prefabricated industrial buildings and shell roofs	K2

PROGRAMME:STRUCTURAL ENGINEERING	DEGREE: PG	A.Y: 2018-19	SEMESTER: 02
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	I / II	ST5201 - ADVANCED STEEL STRUCTURES	C107.1	analyse and design the purlin, Louver rails, Gable column and Gable wind girder, gusseted base	K4
			C107.2	analyse and design the different types of connection in steel members	K4
			C107.3	analyse and design the industrial buildings	K4
			C107.4	analyse and design the members by plastic analysis	K4
			C107.5	analyse and design the light gauge steel structures	K4
2	I / II	ST5202 - STABILITY OF STRUCTURES	C108.1	apply and design the various buckling mechanism in columns	K3
			C108.2	apply and design the various buckling mechanism in beam-column connections	K3



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			C108.3	apply the torsion and lateral buckling in structural members	K3
			C108.4	apply and design buckling based calculations in plates	K3
			C108.5	explain the types and functions of inelastic buckling	K2
3	I / II	ST5203 - EXPERIMENTAL TECHNIQUES	C109.1	understand the principles of strain measuring devices	K2
			C109.2	explain the principles of vibration and wind flow measuring devices	K2
			C109.3	understand the concept of distress management and structural health monitoring.	K2
			C109.4	summarize the non destructive testing methods of structures	K2
			C109.5	illustrate the needs and application of model analysis	K2
4	I / II	ST5204 - FINITE ELEMENT ANALYSIS OF STRUCTURES	C110.1	understand the basic concepts of FEM, types of elements	K2
			C110.2	analyse one dimensional problems and co-ordinate systems	K3
			C110.3	analyse two dimensional problems and higher order elements	K3
			C110.4	understand the concept of mesh generation, techniques and error evaluation	K2
			C110.5	illustrate the software application of finite element analysis	K2
5	I / II	ST5008 INDUSTRIAL STRUCTURES	C111.1	planning and functional requirement of industrial structures	K2
			C111.2	design the various structural members in Steel and RCC like Gantry Girder, Crane Girders , Corbels and Nibs ,Staircase.	K4
			C111.3	design the powerplant structures like cooling towers	K4



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				,bunkers and silos	
			C111.4	analyse and design of transmission line towers	K4
			C111.5	design of foundation for Towers, Chimneys and Cooling Towers	K4
6	I / II	ST5009 - PRE STRESSED CONCRETE	C112.1	understand principles, types of prestressing and method of analysis	K3
			C112.2	analyse and design the flexural members.	K4
			C112.3	analyse and design the continuous beams	K4
			C112.4	analyse and design the tension and compression members	K4
			C112.5	analyse and design the composite members	K4
7	I / II	T5211 - ADVANCED STRUCTURAL ENGINEERING LABORATORY	C113.1	cast and test RC beams for strength and deformation behaviour.	K5
			C113.2	test dynamic testing on steel beams, static cyclic load testing of RC frames	K5
			C113.3	conduct non-destruction testing on concrete.	K5
8	I / II	ST5212 - PRACTICAL TRAINING I	C114.1	Develop field work so as to have a firsthand knowledge of practical problems related to Structural Engineering in carrying out engineering tasks.	K5
			C114.2	develop skills in facing and solving the field problems.	K5



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PROGRAMME:STRUCTURAL ENGINEERING	DEGREE: PG	A.Y: 2019-2020	SEMESTER: 03
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	II / III	ST5301- EARTHQUAKE ANALYSIS AND DESIGN OF STRUCTURES	C201.1	Concept of free and forced vibration analysis of different systems.	K3
			C201.2	Design of structures subjected to dynamic responses of two degree of freedom and understand their application in building system.	K4
			C201.3	Design of structures subjected to dynamic responses of three degree of freedom and understand their application in building system.	K4
			C201.4	Mathematical model of dynamic response continuous system	K4
			C201.5	Analyse of multiple degree of freedom system for dynamic response	K4
2	II / III	ST5014- DESIGN OF STEEL COMPOSITE STRUCTURES	C202.1	concept of concrete composite construction, serviceability and construction issues.	K2
			C202.2	Design of connections in composite structures	K4
			C202.3	design of composite members and trusses.	K4
			C202.4	behaviour of composite box girder bridges	K4
			C202.5	seismic behaviour of composite structures.	K4
3	II / III	ST5015 - DESIGN OF BRIDGES	C203.1	analyse and design the short span RC bridges	K4
			C203.2	apply the design principles recommended by IS for long span RC bridges	K4



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			C203.3	analyse and design prestressed concrete bridges.	K4
			C203.4	analyse and design the steel bridges	K4
			C203.5	analyse and design the bearing and foundations	K4
4	II / III	ST5311 - PRACTICAL TRAINING II	C204.1	Develop field work so as to have a firsthand knowledge of practical problems related to Structural Engineering in carrying out engineering tasks.	K5
			C204.2	develop skills in facing and solving the field problems.	K5
5	II / III	ST5312- SEMINAR	C205.1	to face an audience and to tackle any problem during group discussion in the Interviews.	K3
			C205.2	to acquire writing abilities for seminars and conferences.	K3
			C205.3	to work on a specific technical topic in Structural Engineering and acquire the skills of written and oral presentation.	K3
6	II / III	ST5313 - PROJECT WORK PHASE I	C206.1	To identify a specific problem for the current need of the society in structural Engineering	K2
			C206.2	To develop the methodology to solve the identified practical problem in structural Engineering	K5
			C206.3	To prepare project reports and to face reviews and viva-voce examination.	K6



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PROGRAMME:STRUCTURAL ENGINEERING	DEGREE: PG	A.Y: 2019-2020	SEMESTER: 04
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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	II / IV	ST5411- PRACTICAL TRAINING III	C207.1	Develop field work so as to have a firsthand knowledge of practical problems related to Structural Engineering in carrying out engineering tasks.	K5
			C207.2	develop skills in facing and solving the field problems.	K5
2	II / IV	ST5412- PROJECT WORK PHASE II	C208.1	Solve the identified problem based on the formulated methodology.	K5
			C208.2	Develop skills to analyze and discuss the test results, and make conclusions	K6



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COURSE OUT COME REGULATION 2013

PROGRAMME: MASTER OF BUSINESS ADMINISTRATION	DEGREE: PG	A.Y: 2016-17	SEMESTER: 01
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S.No	Year/Sem	Course Name	Course Outcomes (Student can able to understand)		Knowledge Level
1	I / I	BA7101 - Principles of Management	C101.1	Understand and communicate the purpose and functions of management;	K2
			C101.2	Understand an understanding of the impact of globalisation on management and the role cultural factors play in the workplace.	K2
			C101.3	Understand the methods of employee compensation and their impact on employee motivation;	K2
			C101.4	Understand the components of business strategy;	K2
			C101.5	Apply the concepts of decision making in a business situation;	K3
2	I / I	BA7102 - Statistics for Management	C102.1	Analyse to facilitate objective solutions in business decision. Understand the Conceptual overview of Statistics.	K4
			C102.2	Evaluate the underlying assumptions of analysis tools.	K5
			C102.3	. Understand and critically discuss the issues surrounding sampling and significance.	K2
			C102.4	Apply to discuss critically the uses and limitations of statistical analysis.Students know about parametric test.	K3
			C102.5	Analyse to solve a range of problems using the techniques covered.	K4
3	I / I	BA7103 - Economic Analysis for Business	C103.1	Understand business economic principles, opportunities and risk and uncertainty.	K2
			C103.2	Evaluate Forecasting Demand and Supply in the business environment.	K5
			C103.3	Analyze Production and Cost Estimates .	K4



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			C103.4	Understand the Study Market Structure and Pricing output decisions	K2
			C103.5	Understand the apply pricing strategies	K2
4	I / I	BA7104 - Total Quality Management	C104.1	Understand the importance of total quality management and its Principles and Practices	K2
			C104.2	Apply to Continuous process Improvement through benchmarking	K3
			C104.3	Analyse the Knowledge the Tools and Techniques for Quality management System	K4
			C104.4	Understand Quality by Design through Total Productive Maintenance	K2
			C104.5	Apply various Management Tools for Quality Management in India	K3
5	I / I	BA5705 - Organizational Behaviour	C105.1	Create to develop Right Attitude, Components of attitude, Relationship between behavior and attitude	K6
			C105.2	Apply to define, explain and illustrate a range of organisational behaviour theories;	K3
			C105.3	Analyse the behaviour of individuals and groups in organisations in terms of organisational behaviour theories.	K4
			C105.4	Apply organisational behaviour concepts, models and theories to real life management situations through case analysis;	K3
			C105.5	Analyse the demonstrate a critical understanding of organisational behaviour theories and current empirical research .	K4
6	I / I	BA5706 - Accounting for Management	C106.1	Remember the basic concept of financial accounting, cost accounting and management accounting.	K1
			C106.2	Apply the tools from accounting and cost accounting this would facilitate the decision making	K3
			C106.3	Create and Prepare simple final account for sole trader	K6
			C106.4	Apply the concepts of inventory costs, EOQ and inventory control in arriving at decisions related to	K3



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				inventory.	
			C106.5	Analyse the Standard Costing and Solve problems on material and Price Variances.	K4
7	I / I	BA7107 - Legal Aspects of Business	C107.1	Understand the Differentiate between an Agreement and Contract .	K2
			C107.2	Analyse to explain the importance Contract in Business Environment and Rights of Parties.	K4
			C107.3	Understand and Explain the importance Creation of Agency.	K2
			C107.4	Analyse the principle of international business and strategies adopted by firms to expand globally	K4
			C107.5	Understand to Prepare different negotiable instruments like Bills of Exchange, Promissory Note and Cheque .	K2
8	I / I	BA5108 - Written Communication	C108.1	Understand the importance of Communication in Business	K2
			C108.2	Create to develop writing skills and presentation	K6
			C108.3	Apply to Know to write business proposals and letters	K3
			C108.4	Create the learn Oral and Employment Communication	K6
			C108.5	Understand Contemporary Aspects in Communication and Communication in Information Technology	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)		Knowledge Level
1	I / II	BA7201 – Operations	C109.1	Understand the Concepts and Strategic of Operations management .	K2



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		Management	C109.2	Apply the Knowledge of Product process, design and analysis .Prepare Process Flow Diagrams	K3
			C109.3	Evaluate the Plant Location & Plant Layout .Elaborate process of Site Selection for Services	K5
			C109.4	Understand the Types, Job Shop and Machines of Scheduling .Elaborate Inventory Management in Services	K2
			C109.5	Understand Planning, Integration and scrap Materials Management	K2
2	I / II	BA7202 – Financial Management	C110.1	Understand the basic concept of financial management	K2
			C110.2	Apply the tools from financial management this would facilitate the decision making	K3
			C110.3	Create and develop analytical skills this would facilitate the decision making in business situations .	K6
			C110.4	Analyse and explain and use of financial analysis techniques i.e. Fund Flow, Cash Flow.	K4
			C110.5	Understand the knowledge the Current Assets Management and Corporate Restructuring .	K2
3	I / II	BA7203 – Marketing Management	C111.1	Understand concepts of marketing management and marketing environment and strategies,	K1
			C111.2	Analyze Marketing Opportunities, Customer Value and Marketing Mix.	K4
			C111.3	Remember a customer driven strategies in Market segmentation.	K1
			C111.4	Evaluate Distribution Decisions, Promotion & Communication Strategies	K5
			C111.5	Evaluate Pricing Decisions & Personal Communication	K5
4	I / II	BA7204 – Human Resource Management	C112.1	Remember the importance of human resources and their effective management in organizations.	K1
			C112.2	Analyse the demonstrate a basic understanding of different tools used in forecasting and planning	K4



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			C112.3	Apply the meanings of terminology and tools used in managing employees effectively.	K3
			C112.4	Create the record governmental regulations affecting employees and employers	K5
			C112.5	Analyze the key issues related to administering the human elements such as motivation.	K4
5	I / II	BA7205 – Information Management	C113.1	RememberDescribe the role of information technology and information systems in business.	K1
			C113.2	Create record the current issues of information technology and relate those issues to the firm.	K6
			C113.3	Apply the reproduce a working knowledge of concepts and terminology related to information technology.	K3
			C113.4	Apply the Appraise the knowledge previously acquired of Microsoft Office.Analyze how information technology impacts a firm.	K3
			C113.5	Understand the impact of information systems in society.	K2
6	I / II	BA57206 – Applied Operations Research	C114.1	Understand the origin and application of Operation Research	K1
			C114.2	Evaluate the Linear Programming Method and Transportation Problem	K5
			C114.3	Understand the knowledge in Decision Theory and Network Analysis for taking decisions for business	K2
			C114.4	Understand the knowledge in Decision Theory and Network Analysis for taking decisions for business	K2
			C114.5	Understand the knowledge in Decision Theory and Network Analysis for taking decisions for business	K2
7	I / II	BA57207 – Business Research Method	C115.1	Understand the Business Research, Business Intelligence, Research	K2
			C115.2	Understand the Concept & Features of a good research design	K2
			C115.3	Remember the Research Design, Descriptive	K1



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				Research Designs and Experimental Design.	
			C115.4	Understand the Concept of Measurement and Levels of measurement	K2
			C115.5	Understand the data analysis, Graphical Representation of Data and Bivariate Analysis.	K2
8	I / II	BA7208 – Data Analysis and Business Modelling	C116.1	Understand the Importance of Data for Business Analytics .	K2
			C116.2	Create the Descriptive Statistical Measures in Data Analytics	K5
			C116.3	Apply Predictive Analytics tools .Describe the greedy paradigm and explain when an algorithmic design situation calls for it.	K3
			C116.4	Evaluate the Data Mining process .Analyze randomized algorithms.	K5
			C116.5	Understand the Knowledge data simulation to solve the business problems	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	II / III	BA7301 - Enterprise Resource Planning	C201.1	Understand the important business functions provided by typical business software	K2
			C201.2	Evaluate the enterprise resource planning and customer relationship management	K5
			C201.3	Apply, basic concepts of erp systems for manufacturing or service companies.	K3
			C201.4	Analyze the technical aspect of telecommunication systems, internet and their roles in business environment.	K4
			C201.5	Understand the Develop skills necessary for building and managing relationships with customers, and stakeholders.	K2
2	II / III	BA7302 - Strategic Management	C202.1	Create identification and brand awareness . It plays a vital role in capturing the customers mind	K6



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				with the brand name.	
			C202.2	Crear guarantee a certain level of quality, quantity, and satisfaction of a product or service.	K6
			C202.3	Crear help in the promotion of the product. It gives an image of an experienced, huge and reliable business.	K6
			C202.4	Evaluate shoppers treat brands as a guide to quality, the price of the product, service,	K5
			C202.5	Analyse the deals with determining the brand, positioning the brand and delivering the brand.	K4
3	II / III	BA7011 Brand Management	C203.1	Create identification and brand awareness . It plays a vital role in capturing the customers mind with the brand name.	K6
			C203.2	Crear guarantee a certain level of quality, quantity, and satisfaction of a product or service.	K6
			C203.3	Crear help in the promotion of the product. It gives an image of an experienced, huge and reliable business.	K6
			C203.4	Evaluate shoppers treat brands as a guide to quality, the price of the product, service,	K5
			C203.5	Analyse the deals with determining the brand, positioning the brand and delivering the brand.	K4
4	II / III	BA7012 - Retail Management	C204.1	Remember the Introduction to Retailing.Describe retailing, the entities involved, and the impact of decisions on a retail business.	K1
			C204.2	Apply the concept of strategic planning within the retail management decision process.	K3
			C204.3	Evaluate Compare and contrast single channel, multi-channel, and omnichannel retailing.	K5
			C204.4	Analyse and Explain the consumer decision-making proces.Identify the various models of buying processes	K4
			C204.5	Apply the main factors used to describe customers.	K3
5	II / III	BA7013 - Services Marketing	C205.1	Remember remonstrare a knowledge of the extended marketing mix for services;	K1
			C205.2	Understand and develop and justify marketing	K2



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				planning and control systems appropriate to service-based activities;	
			C205.3	Creat Prepare, communicate and justify marketing mixes and information systems for service-based organisations;	K6
			C205.4	Creat exhibit the capability to work effectively within a team environment.	K6
			C205.5	Apply relevant services marketing theory, research and analysis skills to contemporary case studies	K4
6	II / III	BA7021 - Security Analysis and Portfolio Management	C206.1	Understand the a basic introduction to portfolio theory and study various methods of modeling .	K2
			C206.2	Evaluate the the risk associated with stock investment such as the capital asset pricing model and arbitrage pricing theory.	K5
			C206.3	Apply to encourage students to apply stock and option valuation models in portfolio management	K3
			C206.4	Analyze to develop a thorough understanding of the process of investments.	K4
			C206.5	Understand to the familiarize the students with the stock markets in India and abroad.	K2
7	II / III	BA7022 Merchant Banking and Financial Services	C207.1	Understand the concept of Indian Financial system and Regulatory and Promotional Institutions	K2
			C207.2	Remember Banking and Non Banking financial Institutions. Understand the various financial services and their future	K1
			C207.3	Understand the knowledge of Financial and Securities Markets .determine the most suitable financial serviceFactoring	K2
			C207.4	Create and Learn the Asset /Fund Based Financial Services .To enable the students get familiarized with Mutual Funds.	K6
			C207.5	Evaluate the Fee-based / Advisory services . An in-depth insight into the Various Financial Services	K5



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8	II / III	BA7023 International Trade Finance	C208.1	Understand the major models of international trade and compare and contrast them .	K4
			C208.2	Analyse the linkages between trade, labour and capital movements,	K4
			C208.3	Identify and critically examine policy implications of the linkages between trade, labour and capital movements .	K4
			C208.4	Apply equilibrium models to analyse the economic effects of policy interventions including tariffs, quotas, export subsidies.	K3
			C208.5	Critically analyse these policy interventions in terms of their costs and benefits, including their implications .	K4
9	II / III	BA7031 Managerial Behavior and Effectiveness	C209.1	Understand the concepts related to managerial behaviour.	K2
			C209.2	Create the analyze and compare different models used to explain individual behaviour related to motivation and rewards.	K5
			C209.3	Apply to identify the processes used in developing communication and resolving conflicts.	K3
			C209.4	Evaluate the to explain group dynamics and demonstrate skills required for working in groups (team building).	K5
			C209.5	Understand the to explain organizational culture and describe its dimensions and to examine various organizational designs.	K2
10	II / III	BA7311 - Professional Skill Development	C210.1	Understand professional writing by studying management communication contexts.	K2
			C210.2	Create and recognize, explain, and use the formal elements of specific genres of organizational communication	K6
			C210.3	Understand the ethical, international, social, and professional constraints of audience, style, and content for writing situations.	K2
			C210.4	Evaluate Practice the unique qualities of professional rhetoric and writing style, such as sentence conciseness, clarity, accuracy, honesty.	K5



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			C210.5	Analyse the effectively in all assignments, including informal media (such as email messages to the instructor).	K4
11	II / III	BA7032 Entrepreneurship Development	C211.1	Understand the concept and mindset of the entrepreneurs .	K2
			C211.2	Understand the entrepreneurs Personality, journey and Entrepreneurial competencies,	K2
			C211.3	Create the techniques for generating ideas and Launching Entrepreneurial Ventures.	K6
			C211.4	Understand the Legal challenges of Entrepreneurship.	K2
			C211.5	Evaluate Strategies for building entrepreneurship	K5
12	II / III	BA7034 Industrial Relations & Labour Welfare	C212.1	Understand the concept and need of Customer Relationship Management	K2
			C212.2	Create building customer relations	K6
			C212.3	Evaluate building customer relations	K5
			C212.4	Understand Customer Relationship Management structures	K2
			C212.5	Understand the Customer Relationship Management Planning and Implementation	K2
13	II / III	BA7312 Summer Training	C213.1	Remember the fundamentals of Management Accounting, Cost analysis and Control .analyse strategic macro environmental issues;	K1
			C213.2	Apply to Know Costing for Specific Industries	K3
			C213.3	Understand Application of Marginal Costing . analyse industry factors, and identify their impact on profitability and strategic positioning;	K2
			C213.4	Analyse business Marginal Costing, planning and activities ,assess organisational performance	K4
			C213.5	Analyse the Knowledge of Budget and Budgetary controls. identify strategic capabilities and gaps	K4



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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)		Knowledge Level
1	II / IV	BA7401 International Business Management	C214.1	Understand the importance and Opportunities and Challenges of International Business.	K2
			C214.2	Understand the Conduct, evaluate and present market research to support an organization's international business decision-making.	K2
			C214.3	Apply the Knowledge the International Business and Economic Integration	K3
			C214.4	Understand the Strategy and Structure of International Business	K2
			C214.5	Evaluate the International Business Operations .	K5
2	II / IV	A7411 - Creativity and Innovation	C215.1	Understand the conditions for developing creativity and innovation in various settings	K2
			C215.2	Create the different perspectives on creativity and innovation and discuss analytical implications.	K6
			C215.3	Evaluate the activities and processes which lead to the development of creativity in others.	K5
			C215.4	Understand the techniques for facilitating creativity in light of empirical knowledge of how creativity and innovation.	K2
			C215.5	Understand the the development of creativity and innovation is accounted for in pedagogical approaches and education policy.	K2
3	II / IV	BA7412 Project Work	C216.1	Understand and Establish the thesis is of sufficiently high standard to merit the award of the degree for which it is submitted	K2
			C216.2	Analyse Investigate the awareness of original work sits in relation to the wider research field	K4
			C216.3	Understand the writing, justification and defending aspects in response to the examiners' questions	K2



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			C216.4	Create Learns the results from the work comprehensively through presentation	K6
			C216.5	Evaluate Presenting work in a conference or publish the work in a peer reviewed journal	K5

COURSE OUT COME REGULATION 2017

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)		Knowledge Level
1	I / I	BA7101 - Economic Analysis for Business	C101.1	Understand business economic principles, opportunities and risk and uncertainty.	K2
			C101.2	Evaluate Forecasting Demand and Supply in the business environment.	K5
			C101.3	Analyze Production and Cost Estimates .	K4
			C101.4	Understand the Study Market Structure and Pricing output decisions	K2
			C101.5	Understand the apply pricing strategies	K2
2	I / I	BA5102 - Principles of Management	C102.1	Understand and communicate the purpose and functions of management;	K2
			C102.2	Understand an understanding of the impact of globalisation on management and the role cultural factors play in the workplace.	K2
			C102.3	Understand the methods of employee compensation and their impact on employee motivation;	K2
			C102.4	Understand the components of business strategy;	K2
			C102.5	Apply the concepts of decision making in a business situation;	K3
3	I / I	BA5103 - Accounting for Management	C103.1	Remember the basic concept of financial accounting, cost accounting and management accounting.	K1



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			C103.2	Apply the tools from accounting and cost accounting this would facilitate the decision making	K3
			C103.3	Create and Prepare simple final account for sole trader	K6
			C103.4	Apply the concepts of inventory costs, EOQ and inventory control in arriving at decisions related to inventory.	K3
			C103.5	Analyse the Standard Costing and Solve problems on material and Price Variances.	K4
4	I / I	BA5104 - Legal Aspects of Business	C104.1	Understand the Differentiate between an Agreement and Contract .	K2
			C104.2	Analyse to explain the importance Contract in Business Environment and Rights of Parties.	K4
			C104.3	Understand and Explain the importance Creation of Agency.	K2
			C104.4	Analyse the principle of international business and strategies adopted by firms to expand globally	K4
			C104.5	Understand to Prepare different negotiable instruments like Bills of Exchange, Promissory Note and Cheque .	K2
5	I / I	BA5105 - Organizational Behaviour	C105.1	Create to develop Right Attitude, Components of attitude, Relationship between behavior and attitude	K6
			C105.2	Apply to define, explain and illustrate a range of organisational behaviour theories;	K3
			C105.3	Analyse the behaviour of individuals and groups in organisations in terms of organisational behaviour theories.	K4
			C105.4	Apply organisational behaviour concepts, models and theories to real life management situations through case analysis;	K3
			C105.5	Analyse the demonstrate a critical understanding of organisational behaviour theories and current empirical research .	K4
6	I / I	BA5106 - Statistics for	C106.1	Analyse to facilitate objective solutions in business decision. Understand the Conceptual overview of	K4



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		Management		Statistics.	
			C106.2	Evaluate the underlying assumptions of analysis tools.	K5
			C106.3	. Understand and critically discuss the issues surrounding sampling and significance.	K2
			C106.4	Apply to discuss critically the uses and limitations of statistical analysis.Students know about parametric test.	K3
			C106.5	Analyse to solve a range of problems using the techniques covered.	K4
7	I / I	BA5107 - Total Quality Management	C104.1	Understand the importance of total quality management and its Principles and Practices	K2
			C104.2	Apply to Continuous process Improvement through benchmarking	K3
			C104.3	Analyse the Knowledge the Tools and Techniques for Quality management System	K4
			C104.4	Understand Quality by Design through Total Productive Maintenance	K2
			C104.5	Apply various Management Tools for Quality Management in India	K3
8	I / I	BA5111 – Spoken and Written Communication	C108.1	Understand the importance of Communication in Business	K2
			C108.2	Create to develop writing skills and presentation	K6
			C108.3	Apply to Know to write business proposals and letters	K3
			C108.4	Create the learn Oral and Employment Communication	K6
			C108.5	Understand Contemporary Aspects in Communication and Communication in Information Technology	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)		Knowledge Level
1	I / II	BA5201 – Applied Operations Research	C109.1	Understand the origin and application of Operation Research	K1
			C109.2	Evaluate the Linear Programming Method and Transportation Problem	K5
			C109.3	Understand the knowledge in Decision Theory and Network Analysis for taking decisions for business	K2
			C109.4	Understand the knowledge in Decision Theory and Network Analysis for taking decisions for business	K2
			C109.5	Understand the knowledge in Decision Theory and Network Analysis for taking decisions for business	K2
2	I / II	BA5202 – Business Research Method	C110.1	Understand the Business Research, Business Intelligence, Research	K2
			C110.2	Understand the Concept & Features of a good research design	K2
			C110.3	Remember the Research Design, Descriptive Research Designs and Experimental Design.	K1
			C110.4	Understand the Concept of Measurement and Levels of measurement	K2
			C110.5	Understand the data analysis, Graphical Representation of Data and Bivariate Analysis.	K2
3	I / II	BA5203 – Financial Management	C111.1	Understand the basic concept of financial management	K2
			C111.2	Apply the tools from financial management this would facilitate the decision making	K3
			C111.3	Create and develop analytical skills this would facilitate the decision making in business situations .	K6
			C111.4	Analyse and explain and use of financial analysis techniques i.e. Fund Flow, Cash Flow.	K4
			C111.5	Understaanad the knowledge the Current Assets	K2



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				Management and Corporate Restructuring .	
4	I / II	BA5204 – Human Resource Management	C112.1	Remember the importance of human resources and their effective management in organizations.	K1
			C112.2	Analyse the demonstrate a basic understanding of different tools used in forecasting and planning	K4
			C112.3	Apply the meanings of terminology and tools used in managing employees effectively.	K3
			C112.4	Create the record governmental regulations affecting employees and employers	K5
			C112.5	Analyze the key issues related to administering the human elements such as motivation.	K4
5	I / II	BA5205 – Information Management	C113.1	RememberDescribe the role of information technology and information systems in business.	K1
			C113.2	Create record the current issues of information technology and relate those issues to the firm.	K6
			C113.3	Apply the reproduce a working knowledge of concepts and terminology related to information technology.	K3
			C113.4	Apply the Appraise the knowledge previously acquired of Microsoft Office.Analyze how information technology impacts a firm.	K3
			C113.5	Understand the impact of information systems in society.	K2
6	I / II	BA5206 – Operations Manangement	C114.1	Understand the Concepts and Strategic of Operations management .	K2
			C114.2	Apply the Knowledge of Product process, design and analysis .Prepare Process Flow Diagrams	K3
			C114.3	Evaluate the Plant Location & Plant Layout .Elaborate process of Site Selection for Services	K5
			C114.4	Understand the Types, Job Shop and Machines of Scheduling .Elaborate Inventory Management in Services	K2
			C114.5	Understand Planning, Integration and scrap Materials Management	K2



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7	I / II	BA5207 – Marketing Management	C115.1	Understand concepts of marketing management and marketing environment and strategies,	K1
			C115.2	Analyze Marketing Opportunities, Customer Value and Marketing Mix.	K4
			C115.3	Remember a customer driven strategies in Market segmentation.	K1
			C115.4	Evaluate Distribution Decisions, Promotion & Communication Strategies	K5
			C115.5	Evaluate Pricing Decisions & Personal Communication	K5
8	I / II	BA5211 – Data Analysis and Business Modelling	C116.1	Understand the Importance of Data for Business Analytics.	K2
			C116.2	Create the Descriptive Statistical Measures in Data Analytics	K5
			C116.3	Apply Predictive Analytics tools .Describe the greedy paradigm and explain when an algorithmic design situation calls for it.	K3
			C116.4	Evaluate the Data Mining process .Analyze randomized algorithms.	K5
			C116.5	Understand the Knowledge data simulation to solve the business problems	K2

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S.No	Year/ Sem	Course Name	Course Outcomes (Student can able to understand)	Knowledge Level	
1	II / III	BA5301 - International Business Management	C201.1	Understand the importance and Opportunities and Challenges of International Business.	K2
			C201.2	Understand the Conduct, evaluate and present market research to support an organization's international business decision-making.	K2
			C201.3	Apply the Knowledge the International Business and Economic Integration	K3
			C201.4	Understand the Strategy and Structure of International Business	K2



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			C201.5	Evaluate the International Business Operations .	K5
2	II / III	BA5302 - Strategic Management	C202.1	Create identification and brand awareness . It plays a vital role in capturing the customers mind with the brand name.	K6
			C202.2	Crear guarantee a certain level of quality, quantity, and satisfaction of a product or service.	K6
			C202.3	Crear help in the promotion of the product. It gives an image of an experienced, huge and reliable business.	K6
			C202.4	Evaluate shoppers treat brands as a guide to quality, the price of the product, service,	K5
			C202.5	Analyse the deals with determining the brand, positioning the brand and delivering the brand.	K4
3	II / III	BA5014 - Entrepreneurship Development	C203.1	Understand the concept and mindset of the entrepreneurs .	K2
			C203.2	Understand the entrepreneurs Personality, journey and Entrepreneurial competencies,	K2
			C203.3	Create the techniques for generating ideas and Launching Entrepreneurial Ventures.	K6
			C203.4	Understand the Legal challenges of Entrepreneurship.	K2
			C203.5	Evaluate Strategies for building entrepreneurship	K5
4	II / III	BA5015 - Industrial Relations and Labour Welfare	C204.1	Understand the concept and need of Customer Relationship Management	K2
			C204.2	Create building customer relations	K6
			C204.3	Evaluate building customer relations	K5
			C204.4	Understand Customer Relationship Management structures	K2
			C204.5	Understand the Customer Relationship Management Planning and Implementation	K2
5	II / III	BA5019 - Strategic Human Resource Management	C205.1	Apply critical thinking skills in analysing theoretical and applied perspectives of strategic HRM and ER	K3
			C205.2	Evaluate problems and develop managerial solutions to employment relations problems at	K5



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				both national and workplace level.	
			C205.3	Analyse Demonstrate the application of problem solving and evaluation skills in HRM and ER through exercises and case study work	K4
			C205.4	Analyse the Communicate knowledge of SHRM and employment relations in both written and verbal formats reactive to both audience and purpose.	K4
			C205.5	Apply the Investigate and communicate the professional values of HRM including the ethical problems inherent in HRM and ER professional roles	K3
6	II / III	BA5008 – Banking Financial Services Management	C206.1	Understand the dimensions of performance and risk relevant to financial firms	K2
			C206.2	Understand the contemporary measures of financial measures of performance and risk.	K2
			C206.3	Apply the Design hedging strategies to manage market risks	K3
			C206.4	Apply and Evaluate the economic environment and the impact of governmental economic policies	K3
			C206.5	Apply the impact that financial innovation, advances in technology	K3
7	II / III	BA5011 - Merchant Banking and Financial Services	C207.1	Understand the concept of Indian Financial system and Regulatory and Promotional Institutions	K2
			C207.2	Remember Banking and Non Banking financial Institutions. Understand the various financial services and their future	K1
			C207.3	Understand the knowledge of Financial and Securities Markets .determine the most suitable financial service Factoring	K2
			C207.4	Create and Learn the Asset /Fund Based Financial Services .To enable the students get familiarized with Mutual Funds.	K6
			C207.5	Evaluate the Fee-based / Advisory services . An in-depth insight into the Various Financial	K5



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				Services	
8	II / III	BA5031 - International Trade Finance	C208.1	Understand the major models of international trade and compare and contrast them .	K4
			C208.2	Analyse the linkages between trade, labour and capital movements,	K4
			C208.3	Identify and critically examine policy implications of the linkages between trade, labour and capital movements .	K4
			C208.4	Apply equilibrium models to analyse the economic effects of policy interventions including tariffs, quotas, export subsidies.	K3
			C208.5	Critically analyse these policy interventions in terms of their costs and benefits, including their implications .	K4
9	II / III	BA5004 - Brand Management	C209.1	Create identification and brand awareness . It plays a vital role in capturing the customers mind with the brand name.	K6
			C209.2	Crear guarantee a certain level of quality, quantity, and satisfaction of a product or service.	K6
			C209.3	Creat help in the promotion of the product. It gives an image of an experienced, huge and reliable business.	K6
			C209.4	Evaluate shoppers treat brands as a guide to quality, the price of the product, service,	K5
			C209.5	Analyse the deals with determining the brand, positioning the brand and delivering the brand.	K4
10	II / III	BA5005 - Retail Marketing	C210.1	Remember the Introduction to Retailing.Describe retailing, the entities involved, and the impact of decisions on a retail business.	K1
			C210.2	Apply the concept of strategic planning within the retail management decision process.	K3
			C210.3	Evaluate Compare and contrast single channel, multi-channel, and omnichannel retailing.	K5
			C210.4	Analyse and Explain the consumer decision-making proces.Identify the various models of buying processes	K4
			C210.5	Apply the main factors used to describe	K3



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				customers.	
11	II / III	BA5006 - Services Marketing	C211.1	Remember remonstrate a knowledge of the extended marketing mix for services;	K1
			C211.2	Understand and develop and justify marketing planning and control systems appropriate to service-based activities;	K2
			C211.3	Creat Prepare, communicate and justify marketing mixes and information systems for service-based organisations;	K6
			C211.4	Creat exhibit the capability to work effectively within a team environment.	K6
			C211.5	Apply relevant services marketing theory, research and analysis skills to contemporary case studies	K4
12	II / III	BA5311 – Summer Training	C212.1	Remember the fundamentals of Management Accounting, Cost analysis and Control .analyse strategic macro environmental issues;	K1
			C212.2	Apply to Know Costing for Specific Industries	K3
			C212.3	Understand Application of Marginal Costing . analyse industry factors, and identify their impact on profitability and strategic positioning;	K2
			C212.4	Analyse business Marginal Costing, planning and activities ,assess organisational performance	K4
			C212.5	Analyse the Knowledge of Budget and Budgetary controls. identify strategic capabilities and gaps	K4



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1	II / IV	BA5411 Project Work	C213.1	Understand and Establish the thesis is of sufficiently high standard to merit the award of the degree for which it is submitted	K2
			C213.2	Analyse Investigate the awareness of original works in relation to the wider research field	K4
			C213.3	Understand the writing, justification and defending aspects in response to the examiners' questions	K2
			C213.4	Create Learns the results from the work comprehensively through presentation	K6
			C213.5	Evaluate Presenting work in a conference or publish the work in a peer reviewed journal	K5



PRINCIPAL

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