DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING
COURSE OUTCOMES 2016-17
COURSE PATTERN 2015 (SE)
COURSE PATTERN 2012 (TE, BE)

COURSE PATTEREN 2012 (ME)

S E CIVIL

YEAR	COURSE CODE	COURSE NAME	COURSE OUTCOMES
S E [SEMESTE	**201001**	**Building Technology and Materials**	Understand various types of buildings , types of foundations and classification of bricks and scaffolding
Term I			Understand details of various masonry types including casting procedure of R.C.C. beams and girders, R.C.C. slabs
			Know types of Flooring, roofing and materials used for both.
			To introduce students to various types Doors and windows, Arches
			Design to staircase, and understand various types of Protective coatings which are applied in building
			Produce civil engineering graduates who are able to know about safety in construction as well as eco-friendly and Miscellaneous
	207001	**Engineering Mathematics III**	Solve higher order linear differential equations and apply to civil engineering problems such as bending of beams and whirling of shafts.
			Solve system of linear equations using direct and iterative numerical techniques and develop solutions to ordinary differential equations using single step and multistep methods applied to structural systems.

			Apply statistical methods like correlation, regression analysis in analyzing and
			interpreting experimental data and probability theory applied to construction management.
			Perform vector differentiation and integration, analyze the vector fields and apply to fluid flow problems.
			Solve various partial differential equations such as wave
			dimensional heat flow equations.
	201006	Surveying	Understand to work with different instruments, Prismatic Compass & Plane table.
			Able to perform Leveling operations; and draw & interpret a Contour map.
			Understand the application of 20" Vernier Transit Theodolite and able to plot a traverse using it.
			Able to set out different types of curves.
			Understand the Tacheometric measurements and able to apply those on field.
			Apply the knowledge of Modern Electronic instruments for applications of Surveying.
	201002	**Strength of Materials**	Introduction to various types of stresses, strains, and relation between elastic constant, determinate and indeterminate structures for homogeneous and composite structures
			Understand the concept and application of moment of inertia, bending stress, shear stress, torsion moment and strain energy.
			Study Torsion and Strain Energy
			Understand the Principal Stresses and Strains.
			Study the bending moment diagram, shear force diagram, and axial force diagram by manually and by software.

			Analyse the column load by different loads in different end conditions.
	201003	**Geotechnical Engineering**	Ability to understand the terminology and basic equations of subject.
			properties of soil.
			Understand the different methods to determine Stress in soil
			Ability to Solve of Shear Strength problems.
			Understand the different methods to determine earth pressure on retaining structure.
			Understand the causes of Slope Failure and preventive measures.
Term II	**201004**	**Fluid Mechanics I**	Student will be able to undestand properties of fluid and dimensional Analysis.
			Student should be able to undestand concept of pressure and principle of bouyancy.
			Student should be able to understand fluid kinematics.
			Student should get knowledge of fuild Dynamic and bernoulis theorem.
			Student should be able to understand type of flow and boundary layer theory.
			Student should be able to understand turbulent flow and flow through pipe.
	201005	**Architectural Planning and Design of Buildings**	Understand Town planning and legal aspects
			Understand Planning, Design and Safety of Buildings
			Understand Architectural Drawing and building byelaws
			Understandvarious Building Services
			Understand Planning of Residential Buildings
			Understand Planning of Residential Buildings

	201008	**Structural Analysis I**	Understand the basic concept of static and kinematic indeterminacy, slope and
			deflection of determinate and indeterminate beams for analysis of structures.
			Analyze indeterminate beams structures and frames
			Evaluate determinate and indeterminate trusses and its application in the field.
			Apply influence line diagrams for the analysis of structures under moving load.
			Analyze two and three hinged arches and its application.
			Apply plastic analysis for indeterminate steel structures by limits state method.
	201007	Concrete Technology	Understand Chemistry ,Properties and classification,of Cement, Flyash, Aggregates and Admixtures,and hydration of cement in
			Test hardened concrete with distructive and non distructive testing instruments
			Get acquainted to concrete handling equipments and different special concrete types
			Design concrete mix of desired grade
			Predict deteriorations in concrete and repair it with appropriate methods and techniques.
T E [SEMESTER –V]	301001	Hydrology and Water Resources Engineering	Produced civil engineering graduates who are introduced with Hydrological processes and Stream Gauging.
			Students are introduced with the basics of Run off and Floods and its measurements
Term I			Students are able to pursue his /her careers in Hydraulic Engineering field with Reservoir Planning.
			Students can be able to knowing the water requirements for crops and Irrigation Methodology.
			Students have the ability to enhance the knowledge in Water Resources Engineering Field and related softwares.

			The students can able to design Water Management and Lift Irrigation Scheme.
	301002	Infrastructure Engineering and Construction Techniques	To know the scope of infrastructure engineering in national and global development
			To know about the basics of various components of railway engineering, the types and functions of track, junctions and railway stations
			Study of construction techniques as dewatering , dredging, slip form and hoists cranes
			study of tunneling methods and various operations required in tunneling
			To study about the types and components of docks and harbours
			Concepts of Construction techniques and its practical applications, Earth moving equipments
	301003	Structural design I	Ability to understand IS code of practice for the design of steel structural elements.
			Analyze and design axially loaded column & built-up column with lacing and batten system.
			Analyze and design the eccentrically loaded column and column bases.
			Ability to analyze and design the flexural member as laterally restrained and unrestrained beams
			Ability to design the connection between beam to beam , beam to column and Design of welded plate girder
			Analyze and design roof truss and gantry girder for industrial building
	301004	Structural Analysis II	Analyse the indetermiant beams and frames by Slope Deflection method
			Analyse the indetermiant beams and frames by Moment Distribution method

			Analyse the indetermiant beams and frames by Flexibility method
			Analyse the indetermiant beams and frames by Stiffness method
			Analyse frmes by approximate method and determinate beams by finite difference method
			Able to solve basic problems by finite element method
		Fluid Mechanics II	Produced civil engineering graduates who are introduced with Flow around submerged bodies & unsteady flow.
			Students are introduced with the basics of Open Channel flow & it's Depth-Energy Relationship.
			Students are able to pursue his /her careers in Hydraulic Engineering field with knowing concept of uniform flow & hydraulic jump in open channel flow.
			Students can be able to design the Hydraulic Machineries with the knowledge of impact of jet.
			Students have the ability to enhance the knowledge in Hydropower Plant.
			The students can study and analyzed Characteristics of GVF profiles in open channel flow.
T E [SEMESTE	301007	Advanced Surveying	Ability to understand the GNSS and triangulation.
			understand concept of hydrographic surveying.
Term II			To understand the setting out of engineering works and perform trignometrical leveling.
			Ability to adjust geodetic traverse and understand laws of weights.
			To understand the concepts of aerial photography.
			To know concepts of rs and gis and their applications in various fields of civil engineering.
	301008	Project Management and Engineering Economics	Concept of project planning, lif cycle and applications to civil engineering

			Applications of networking and project time analysis
			Network analysis for project time and cost control using concepts of crashing, resource allocation and updating of networks
			Concept and applications of project economics, laws and safety practices
			Applications of materialmanagemnent methods, inventory control, ABC, EOQ
			Financial methods and appraisal of construction projects
	301009	Foundation Engineering	Ability to understand the methods of soil exploration
			To analyze the settlement of the footing
			To understand the bearing capacity of footing by different methods
			Ability to calculate the load bearing capacity of different piles
			To understand the techniques in design of foundation in BC soil
			To know concepts of soil reinforcement and geosynthetics material in soil structure
	301010	Structural Design II	Application of different specification of IS -456-200 For design and ability to understand the design Philoshopy.
			Ability to analyze the design of RC Beams and slab based on guidelines given in IS 456
			Analysis and design of Two Way slab and staircase for Different Support Condition
			To Understand design flexure member for different Support Condition.
			Application of Re-Distribution of moments ,Bond Length ,Lap Splice and detailing requirements for RC Members
			Analyze and design RC Columns and footing .

	301011	Environmental Engineering I	To understand the source, control and effect of air and noise pollution
			To understand the fundamentals of water treatment units and parts of water supply system.
			To understands the importance of laboratory analysis for design of Water treatment units
			understand the Design of water treatment plant
			Study of Misscellnous treatment systems
			Study of water distribution system and rain water harvesting
B E [SEMESTER –VII]			
Term I	401001	Environmental Engineering II	Understand the Physical, chemical and biological characteristics of sewage and design of sewer
			Comprehend Stream sanitation and Able to design the primary sewage treatment units
			Capable to design secondary treatment units such as Activated sludge process, trickling filter, etc.
			Able to design of low cost wastewater treatment units.
			Understand theory and design of anaerobic treatment units.
			Know the waste water treatment flow sheet for various industries.
	401002	Transportation Engineering	Understand history of road development, roads classification, traffic Engineering and controlling devices in India.
			Able to fixation of road alignment, Geometric parameters, and highway drainage system
			Able to select different materials for various courses of road, pavement design and construction procedures
			Able to Airport planning and designing
			Understand different components and loading on bridges

			Understand different types of Bridges and bearings of bridges
	401 003	Structural Design and Drawing III	1. Application of different specification of IS 1343: 1980 for prestress concrete
			2. Able to differentiate between pretensio0ning and post tensioning systems
			3. Able to analyse and design framed structures, Application of IS 1893 :1984 for Earthquake resistant design of structures.
			4. Understand and designing of Soil Retaining structures
			5. Understanding the behaviour and designing of combined footing
			6. Application of IS 3370 part II to part IV for water storage structures
		Elective I	
	401004	**Systems Approach in Civil Engineering**	Applications of numerical methods like bisection method, false position method,etc
			Applications of numerical methods like newton Raphson,Gauss Quadrature,etc
			Applications of methods like Gauss legendre, jordan, siedel
			Concepts of standard deviation, types of data and importance of statistics
			Concepts of probability distributions like normal, poisson, binomial, etc
			Concepts and applications of corelation regression, test of hypothesis, inerpolation and extrapolation

	401005	**Advanced Concrete Technology**	Students will know recent aggregates and their compatibility in concrete making
			Understand different types of concrete
			Students will be able to design modern concrete
			Students will know basic of fiber reinforced concrete
			Able to Understand different properties of fresh and hardend fiber reinforced concrete
			Able to Understand precast elements and concept of ferrocement
B E [SEMESTER – VIII]			
	401007	Dams and Hydraulic Structures	Students can understand Dam, its Safety and Behavioral aspects of Dam with Instruments.
			Students can analysed and designed Gravity Dam with different stability condition.
			Student's awared the Spillway, Gates and layout of Hydropower plant.
			Students are gained the knowledge in failure aspects of Earthen Dam and Design of Diversion Head Works.
			Students are able to design canal and canal structures.
			Students are understood C. D. Work and River Training Works.
	401008	Quantity Surveying, Contracts and Tenders	Understand Estiates, it's types .
			Able to take Out Quantities of different Tasks for Load Bearing Structure
			Able to take Out Quantities of different Tasks for RCC frame Structure and valuation
			Able to do Rate Analysis for tasks by studing specifications

			Able to understand Tending and work execution method
			Able to understand Contracting and arbitration
	401009	**Elective III**	Students can understand various sources of energy
		Hydropower Engineering	Students can understand various types of hydropower plant
			Students can understand design of power plant
			Students are gained the knowledge of power house.
			Students can understand design of turbine
			Students are made aware about electric act
	401010	**Elective IV**	To enrich the students with the concepts and applications of Management
		Construction Management	To make the learners understand the basic functions of Financial Management
			To facilitate the students with the fundamental concepts of Technology management
			To facilitate the students with the fundamental concepts of Technology management
			To impart the importance of Human Resources in the organizational context
			To gain knowledge related to artificial intelligence and applications
ME (STRUCTURES)			
1ST SEM			
	501001	**Advanced Mechanics of Solids**	Able to understand the concept of stresses and strains in 2D and 3D for Isotropic and Orthographic and axi- symmetric problems
			Able to understand the Generalized Hooke's law Understand the relation between Cartesian and Polar Coordinates
			Understand the stress concentration concept and its application

			Analyze the problems for beams curved in plan Analysis of problems for beams curved in elevation
			Know the different theories for Torsion
			Understand the analysis for beams on elastic foundation
	501002	**STRUCTURAL DYNAMICS**	1. Apply Knowledge of mathematics ,science and engineering by developing the equation of motion for vibratory systems and solving for the free and forced response.
			2. Create simple models for engineering structures using knowledge of structural dynamic
			3. Intercept dynamic analysis result for design analysis and research purposes.
			4. Apply Structural dynamics theory to Earthquake analysis response and design of structure.
			5. Apply Knowledge of mathematics science and engineering to create mathematical modeling
			6. Analyze the different system with distributed load.
	501003	**ADVANCED DESIGN OF STEEL STRUCTURES**	To analyse and design Hoarding Structures and Castellated beams
			To introduce analysis and design of steel transmission line towers and Microwave Towers.
			To perform analysis and design of tubular structures.
			To analyse and design Cold form light gauge section
			To perform analysis and Design of chimneys
			To perform structural stability analysis.
	501004	**Research methodology**	Funding agencies and writing / devolving a research proposal
			Literature survey
			Different methods of data collection and Introduction to the data
			Effective documentation and report writing
			Presentation of research, filing patent, patent procedure

			Understand the concept of Planning and investigation for Bridges..
ELECTIVE I	**501005 F**	**Economics and Finance for Engineers**	Concepts of basics in economics
			Concepts of Simple and Compound Interest
			Understanding Laws of Economics
			Analysis Project Finance Methods
			Project Selection Criteria
			Concepts of Valuation and Estimation
	501005	**Optimization**	Concepts of Linear Programming Methods
			Analysis of Linear Equations
			Concepts of Non Linear Programming
			Analysis of Non Linear Equations
			Concepts of Dynamic Programming
			Analysis of Dynamic Programming
			Services in Different types of Buildings
SEM II			
	501008	**THEORY OF PLATES AND SHELLS**	Analysis of Rectangular Plates by using Navier solution and Levy's
			Analysis of Circular plates for different end conditions and loading.
			Understand various methods for analyzing grid for Roofs and
			Understand the equilibrium theories for analysis of Plates and Shell
			Formulate Finite Element Equations for solution of the structural
			Perform critical Analysis and Design of Typical Shell Structures
	501 007	**Finite Element Method**	Know the different methods in finite element analysis
			Understand the different elements in finite element analysis
			Understand the concept of shape function
			Able to formulate 2D and 3D isoparametric elements
			Understand the different thin plate bending elements
			Understand the different elements in flat and curved shell
	501009	**Advanced Design of Concrete Structures**	Concept of yield lines and design of slab using yield lines

			Design of Flat slabs and grid floors,
			Design of bunkers and silos
			Design of elevated water tank
			Design of chimney, Design of shear wall, Design of form work
			Design of raft and pile foundation
ELECTIVE II	**501010 F**	**Buidling services and maintainance**	Lifts and Elevators
			Robotics in construction
			Mechanisation and advanced techniques in construction
			Maintenance and repair practices in different structures
			MEP Services
			Design of raft and pile foundation
	501010 A	**Human Rights**	Evolution and development of concept of human rights, framework
			Human rights and state mechanisms
			Human rights of different sections
			Other contemporary issues
			Role of society and citizens in social movements
			Human rights and international scenario
	501010 C	**Design of Foundation**	Be Able To Determine Allowable Bearing Pressures and Load
			Understand the concept of liquefaction of Soils.
			Ability to apply the fundamental principles of soil mechanics to the
			Understand the concept of evaluation of bearing capacity for
			To analyse and design of Raft and Shell Foundations
			To analyse and design of Precast and cast-in-situ piles
SEM III			
	601013	**Earthquake Engineering and Disaster**	Introduction to Disaster and disaster management
			Basic knowledge of dynamics and methods of dynamic analysis
			Blast and fire resistant design of structures
			Earthquake resistant design of structures
			Design of shear wall

			Retrofitting, rehabilitation and strengthening of structures
	601014	**Design of Concrete and Prestressed Bridges**	Understand the concept of Planning and investigation for Bridges..
			Analyze and Design of slab culvert, box culvert and skew bridge.
			Analyze and Design of Pre-tensioned as well as Post-tensioned
			Understand the concept of analyze and design of Rigid Frame
			Analyze and Design of Bearings
			Analyze and Design of open well, pile and caisson foundation.