

Recognized Under 2(f) of UGC Act 1956
Approved by AICTE, New Delhi Affiliated to JNTUH, Hyderabad.
Main Road, Sheriguda, Ibrahimpatnam, R.R. Dist. 501 510.
Campus Ph: 9640590999, 9347187999, 8096951507.

https://siiet.ac.in

Program: B.Tech-Civil Engineering

Academic Year: 2020-21

Semester:

C N	Year	Course	Course	Course Outcomes
S.No	/Sem	Code	Name	(After completion of the course student can able to :)
1	II/I	CE301PC	Surveying and Geomatics	CO1: Define the principles of surveying and its phases and measure the directions by using chain and prismatic compass. CO2: Analyzing the levels of ground and computing the area and volumes. CO3: Explain the theodalite surveying and analyse the methods of traversing. CO4: Explain the principles of tachometry surveying and differentiate types of curves. CO5: Explain the total station and global positioning system. CO6: Define contouring and study its characteristics and
		-		its uses.
2	II/I	CE302PC	Engineering Geology	CO1: Write about importance of geology from civil engineering point of view. CO2: Distinguish weathered rocks from fresh rocks. CO3: Identify geological structures and processes for rock mass quality. CO4: Identify subsurface information and groundwater potential sites through geophysical Investigations. CO5: Apply geological principles for mitigation of natural hazards and select sites for dams and tunnels. CO6: Develop understanding on impact of geological features on civil engineering projects.
3	II/I	CE303PC	Strength of Materials – I	CO1: Describe the basic concept of stress and strain. CO2: Draw SFD and BMD for different beams subjected to different loads. CO3: Formulate flexural stresses, shear stresses and its distribution for various sections. CO4: Assess slope and deflection of beams subjected to loads. CO5: Apply the principal stresses and strains in structural members. CO6: Analyze of the principles and basics of strength of materials in the civil engineering structures.
				CO1: Describe the use of Baye's theorem techniques when solving the problems. CO2: Discuss the properties of Discrete and continuou



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4	II/I	MA304BS	Probability and Statistics	probability distributions. CO3: Solve the problems on Binomial and Geometric distributions and also normal distribution. CO4: Determine the testing of Hypothesis by using Type- I and Type- II errors. CO5: Identify the different types of hypothesis. CO6: Create the new problems on correlations and Regressions.
5	II/I	CE305PC	Fluid Mechanics	CO1: Explain the properties of the fluids. CO2: Describe and classification of the flows. CO3: Identify the discharge through the various discharge meters. CO4: Explain the How to move the fluid various flows and finding the discharge. CO5: Differentiate the fluid flow in layer by layer.
6	II/I	CE306PC	Surveying Lab	CO1: Prepare the surveying of an area by chain, and compass survey (closed traverse) & plotting. CO2: Solve and Calculation of areas, Drawing plans and contour maps using different measuring equipment at field level. CO3: Recognize Trigonometric leveling using theodalite. CO4: Apply the principle of surveying for civil Engineering Applications. CO5: Draw determination of height, remote elevation, and distance between inaccessible points using total station.
7	II/I	CE307PC	Strength of Materials Lab	cos: 5 Investigate the hardness of materials like stainless steel, aluminium, brass etc. cos: Judge the resistance of mild steel under impact loads.
8	II/I	CE308PC	Engineering Geology Lab	CO1: Study of physical properties and identification of minerals referred under theory. CO2: Mega scopic and microscopic identification of minerals. CO3: Interpretation and drawing of sections for geological maps showing titled beds, faults, Uniformities, etc. CO4: Solve simple structural geology problems.

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9	II/I	MC309		CO1: Understand meaning, features, characteristics of constitution law and constitutionalism. CO2: Describe fundamental rights, fundamental duties and its legal status. CO3: Describe The constitution powers and status of the President of India. CO4: Understand Emergency Provisions: National Emergency, President Rule, And Financial Emergency. CO5: Understand Fundamental Right to Equality, Fundamental Right to certain Freedom under Article 19. CO6: Describe the Scope of the Right to Life and Personal Liberty under Article 21.
10	II/II	EE401ES	Basic Electrical and Electronics Engineering	CO1: Understand the basic electrical circuit elements and different ac circuits. CO2: Understand the installation of different electrical equipments. CO3: Describe the working of different transformers. CO4: Understand the principles of DC motors. CO5: Analyze the different diodes, rectifiers and filters. CO6: Understand the principle, applications of BJT and FET.
11	II/II	CE402ES	Basic Mechanical Engineering for Civil Engineers	CO1: Understand the Mechanical equipment for the usage cams, riveted joint and discuss the materials. CO2: Analyze the working of power transmission elements like gears, belt drive, chain drive & material handling equipment. CO3: Illustrate the working features of IC engines, the basic principles of refrigeration and laws of heat transfer. CO4: Describe different types of welding process for joining & classify the process of casting. CO5: Differentiate understand working of lathe, drilling milling & grinding machines.
12	II/II	CE403PC	Building Materials. Construction and Planning	like stone masonty, plastering, painting, rolling

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II/II	CE404PC	Strength of Materials - II	 CO1: Illustrate the various precautionary measures pertaining to construction materials. CO2: Asses to understand the behaviour of columns and struts under axial loading. CO3: Evaluate the strains and deformation that will result due to the elastic stresses developed within the materials for simple types of loading. CO4: Analyze strength and stability of structural members subjected to Direct, and Direct and Bending stresses. CO5: Understand and evaluate the shear center and unsymmetrical bending. CO6: Appraise strengths of different materials.
II/II	CE405PC	Hydraulics and Hydraulic Machinery	CO1: Explain the properties of the fluids. CO2: Describe and classification of the flows. CO3: Identify the discharge through the various discharge meters. CO4: Explain the How to move the fluid various flows and finding the discharge. CO5: Differentiate the fluid flow in layer by layer. CO6: Discuss the classification of fluid and its properties find out the discharge & amp various conditions flows in fluids.
II/II	CE406PC	Structural Analysis - I	CO1: Analyze perfect, imperfect and redundant frames. CO2: Compare different frames. CO3: Apply classical methods for one dimensional and two dimensional problems. CO4: Analyze indeterminate structures. CO5: Apply slope-deflection and moment distribution method for continuous beams with and without settlement of supports. CO6: Analyze structures for gravity loads, moving loads and lateral loads.
II/II	CE407PC	Computer Aided Civil Engineering Drawing	CO1: Summarize the AutoCAD commands for drawing 2D & 3D building drawings required for different civil engineering applications. CO2: Plan and draw Civil Engineering Buildings as per aspect and orientation. CO3: Categorize drawings as per user requirements and preparation of technical report. CO4: Draw a plan of a Building and with dimensioning the plan. CO5: Define the tools like Draw tools, Modify tools which are used in AutoCAD. CO6: Develop sections and elevations for given Single storied buildings, multi storied buildings.
	II/II	II/II CE405PC	II/II CE404PC Strength of Materials - II II/II CE405PC Hydraulics and Hydraulic Machinery Structural Analysis - I CE407PC Computer Aided Civil Engineering



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17	II/II	CE409PC	Hydraulics And Hydraulic Machinery Lab	CO1: Understand the properties of the fluids. CO2: Describe and classification of the flows. CO3: Identify the discharge through the various discharge meters. CO4: Understand the How to move the fluid various flows and finding the discharge. CO5: Differentiate the fluid flow in layer by layer.
18	II/II	EE409ES	Basic Electrical & Electronics Engineering Lab	CO1: Understand behavior of different electrical components. CO2: Formulate and solve AC,DC circuits. CO3: Realize the requirement of transformers. CO4: Explain the properties of electromagnetic circuit. CO5: Understand the principles of various electrical circuits. CO6: Understand working principles of various analogue electrical measuring instruments.
19	II/II	MC409	Gender Sensitization Lab	 CO1: Develop sensibility with regard to issues of gender in contemporary India. CO2: Provide a critical perspective on the socialization of men and women. CO3: Determine information about some key biological aspects of genders. CO4: Debate on the politics and economics of work. CO5: Reflect critically on gender violence. CO6: Expose more egalitarian interactions between mer and women.
20	III/I	CE501	Structural Analysis – II	CO1: Analyze the two hinged arches. CO2: Solve statically indeterminate beams and portal frames using classical methods CO3: Draw the shear force and bending moment diagrams for indeterminate structures CO4: Formulate the stiffness matrix and analyze the beams by matrix methods. CO5: Solve the approximate and numerical methods of analysis for indeterminate structures CO6: Design the variation of S.F and B.M when moving load passes on indeterminate structure.
21	III/I	CE502PC	Geotechnical Engineering	CO1: Distinguish the properties and classification of the Soil CO2: Describe the Factors affecting permeability of the Soils CO3: Develop the Stress Distribution of the compaction effects on soil properties CO4: Develop the Stress Distribution of the Consolidation effects on soil properties. CO5: Classify the Shear Strength Of Soils Importance of parameters CO6: Describe the classification of soil and its properties fin out the permeability various conditions.



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22	III/I	CE503PC	Structural Engineering-I (RCC)	CO1: Analyze of the Reinforced concrete beams using limit state design CO2: Design the Reinforced concrete structural slabs CO3: Design the Reinforced concrete structural elements CO4: Design the different types footings CO5: Design of the staircases CO6: Explain about the structures for serviceability
23	III/I	CE504PC		CO1: Highway Development in India. CO2: Importance of Geometric Design. CO3: Introduction to traffic and Design of Traffic Signals. CO4: Explain the Intersection Design and Types of Intersections. CO5: Explain the Design of Pavements. CO6: Explain the highway engineering and design of pavements and to analysis the traffic signals.
24	III/I	CE602PE	Concrete Technology (Professional Elective-I)	CO1. Define the properties of concrete material CO2: Describe the behaviour of concrete properties of fresh concrete CO3: Describe the behaviour of concrete properties of hardened concrete CO4: Recognize the Workability of freshly mix concrete CO5: Apprise the difference between Self Compacting Concrete and normal CO6: Examine the Non Destructive test's on concrete.
25	III/I	SM505MS	Engineering Economics and Accountancy	CO.1 The students will understand the concepts of economics, demand, supply and various methodology of economics and the methods and theories. CO.2 Understand the various macroeconomic concepts like national income, methods of estimation, inflation, deflation and new economic policy. CO.3 Understand the significance of capital budgeting time value of money, methods of appraisal techniques payback period, average rate of return, profitability index. CO.4 Understands the concepts of equity and deb financing, leverages and types of leverages. CO.5 To adopt the principles of accounting to record classify and summarize various transactions in books of accounts for preparation of final accounts. CO.6 Understand the concept of cost and break-even analysis application and limitations.
26	III/I	CE506PC	Highway Engineering and Concrete Technology Lab	CO.1 Define the properties of concrete material. CO.2 Describe the behaviour of concrete & am properties of fresh concrete. CO.3 Describe the behaviour of concrete & am



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				CO.5 Apprise the difference between Self Compacting Concrete and normal
				CO.6 Examine the Non Destructive test's on concrete
				CO.1 calculate and analyze the stresses on soil and be able to draw the stress paths
			Geotechnical	CO.2 evaluate the compressibility of soils
27	III/I	CE507PC	Engineering Lab	CO.3 suggest suitable ground improvement techniques for expansive soils
			Lau	CO.4 execute various field tests and sampling techniques
				CO.5 obtain and analyze the shear strength of soils
				CO1: Speak effectively.
				CO2: Express and communicate fluently and
				appropriately in social professional contexts.
				CO3: Develop the comprehensive ability through English language enables the students in understanding and
			Advanced	assimilating other engineering subjects.
	III/I	EN508HS	Communicati	CO4: The awareness of English lab enriches their
28	111/1	Di (Boorto	on Skills Lab	communication and soft skills contributing to their overal
			OH SKIIIS Lab	development and success.
				CO5: Draft various letters and reports for all officia
				purpose.
				CO6: Take part in social and professional
				communication.
				CO1: Analyze different types of intellectual property.
				CO2: Express function of trademarks.
				CO3: Understand law of copy rights.
			Intellectual	CO4: Understand law of patents.
20	TII/I	MC509	Property	CO5: Explain trade secrets.
29	III/I	MC509	Rights	CO6: Understand the development of intellectual
				property.
				CO.1 Know types of water retaining structures for
				multiple purposes and its key parameters considered for
				planning and designing CO.2 Understand details in any Irrigation System and in
			Hydrology &	
			Water	requirements
30	III/II	CE601PC	Resources	CO.3 Know types of a irrigation system components
			Engineering	CO.4 Analyze of a irrigation system
				CO.5 Design of a irrigation system components
				CO.6 Design principles of Notch Fall and Sarada type Fall.
				CO.1 Assess characteristics of water and wastewater ar
				their impacts
			Environment	· · · · · · · · · · · · · · · · · · ·
	III/II	CE602PC		plan conveyance components
31	111/11	CLOOZIC	Engineering	C
			Engineering	treatment plants
	1			CO.4 Examine conversant with issues of air pollution ar
				Company of the control



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				control
			CO.5 Explain about classification of air pollution	
				CO.6 Discuss Meteorological parameters affecting air
				pollution
				CO1: Identify a suitable foundation system for structure.
32	III/II	CE603PC	Foundation Engineering	CO2: Evaluate the importance of raft foundation an principles of design for buildings and tower structures.
			Bugineering	CO3: Analyze and design pile foundations.
				CO4: Examine and discuss various machine foundations
				CO5: Analyze and design Sheet piles and cofferdams.
				CO1: Analyze of the built up members and Column base
			Stanistimal	CO2: Analyze of the plate girders and Roof Trusses
22	TII/II	CE604PC	Structural	CO3: Define the beams and beam columns
33	III/II		Engineering-	CO4: Design the tension and compression members
			II(Steel)	CO5: Design of the bolt and weld connections
				CO6: Explain about the Plastic beams
				CO1 Explain different types of Pre-stressing materia
			Prestressed	and methods of pre-stressing
	III/II	CE612PE	Concrete (Professional Elective-II)	CO2 Write about different losses of pre-stres
34				CO3 Flexure & Shear analysis of pre-stressed concrete
				CO4 Examining the Transmission of pre-stressing force
				CO5 Analysis of composite beams & Deflection concept
				CO1: Identify the areas to control and Selecting the
		MS6110E		Appropriate controlling methods/Techniques
				CO2: Develop the process of management's for
			Eundomantal	functions: planning, organizing, leading
			Fundamental s of Management for Engineers (Open Elective-I)	and controlling.
	III/II			CO3: Analyze and evaluate the influence of historic
35				forces on the current practice of management
				CO4: Examine the circumstances that lead
				management
				evolution and how it will affect future managers
				CO5: Evaluate leadership styles to anticipate the
				consequences of each leadership style.
	-			CO1: Define physical, chemical, biologic
				characteristics of water and wastewater.
			Environment	CO2: Examinee break-point chlorination.
			al	CO3: Assess optimum dosage of coagulant.
36	III/II	CE605PC	Engineering	CO4: Assess the quality of water and wastewater.
		CLOUSIC	Lab	CO5: Examine the use of Nephlo turbidity meter.
			Lau	CO6: Analyze the difference of Total Solids, Tot
				Dissolved Solids and Settle able solids.
				CO1: Model the geometry of real-world structure
			Computer	Represent the physical model of structural
37	III/II	CE606PC	Aided Design	element/structure
		CEOUOFC	Lab	element/structure
				Toll of the cost of 3



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				CO2: Analysis design of space frames subjected to DI & LL CO3: Interpret from the Post processing results CO4: Design the structural elements and a system as per IS Codes CO5: Design the structural elements like RCC beam and RCC slab CO6: Detailing of Steel built up compression member
38	III/II	MC609	Environment al Science	CO1: Get the information about ecosystem and also about its functions like Food chain, Ecological pyramids etc., CO2: Get the knowledge about the different types of resources like land, water, mineral and energy and also about the effects of environment by the usage of these resources. CO3: Gain the knowledge about the ecosystem diversity, its values and also about the importance of the endemic species and different techniques involved in its conservation CO4: Gain the knowledge about the different types of pollutions and their control technologies, Waste water treatment, Bio medical waste management etc., CO5: Get the complete information about EIA- Environmental Impact Assessment, CO6: Gain the knowledge about environmental policies and regulations.
39	IV/I	CE701PC	Transportatio n Engineering	CO1: Highway Development in India. CO2: Importance of Geometric Design. CO3: Introduction to traffic and Design of Traffic Signals. CO4: Explain the Intersection Design and Types of Intersections. CO5: Explain the Design of Pavements. CO6: Explain the highway engineering and design of pavements and to analysis the traffic signals.
40	IV/I	CE702PC	Estimation Quantity Surveying and Valuation	CO1: Assess of quantities for a Residential Building Abstract cost Estimate. CO2: Design and Prepare Bar bending schedule reinforcement works. CO3: Estimate the calculation of earth work quantity for roand canals. CO4: Analyze the rates of work quantities and labour. CO5: Compare different types of contracts, tender document for building & valuation. CO6: To provide the student with the ability to a preparation of reports for estimation of various items.
41	IV/I	CE702PC	Construction Technology and Management (Professional Elective-II)	CO1: Understand the roles and responsibilities of a project manager. CO2: Prepare schedule of activities in a construction project. CO3: Identify the equipment used in construction. CO4: Understand safety practices in construction.



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				industry
				CO5: Prepare tender and contract document for a
42 I	IV/I	CE702PE	Ground Improvement Techniques (Professional Elective-III)	CO1: Identify the type of problems in problematic soils and solve their problems using different ground improvement techniques. CO2: Design of reinforced earth retaining structures. CO3: Design drainage and dewatering systems for various civil engineering problems. CO4: Apply knowledge on ground improvement techniques such as reinforced earth, drainage and dewatering and grouting techniques on stabilization of expansive soils. CO5: Understand the need of ground improvement for stable engineered structures using various techniques. CO6: Understand the ground improvement techniques such as
				ground anchors, rock bolting and soil nailing.
43	IV/I	CE708PE	Traffic Engineering (Professional Elective-IV)	CO1: Apply the knowledge of mathematics, science and engineering in the areas of traffic engineering CO2: Assess the issues related to road traffic and provide engineering solutions CO3: understanding of road user psychological and behavioral patterns CO4: Design Intersections and prepare traffic management plans. CO5: evaluate the structural and functional conditions of in-service highway pavements CO6: Determine capacity and LOS
44	IV/I	CE703PC	Transportatio n Engineering Lab	CO1: Identifying the aggregate strength. CO2: Analyze aggregate size and shape. CO3: Identifying the bituminous strength. CO4: Determine the bituminous elongation point. CO5: Determine traffic volume studies. CO6: Analyze the aggregate strengths and bituminous strengths.
45	IV/I	CE704PC	Environment al Engineering Lab	CO1: Define physical, chemical, biological characteristics of water and wastewater. CO2: Examinee break-point chlorination. CO3: Assess optimum dosage of coagulant.
46	IV/I	CE705PC	Industry Oriented Mini Project	CO1: Assess the quality of water and wastewater. CO2: Examine the use of Nephloturbidity meter. CO3: Analyze the difference of Total Solids, Total Dissolved Solids and Settle able solids.
47	IV/I	CE705PC	Seminar	CO1: Adapt a factual approach to decision making CO2: Effectively communicate by making an oral presentation before an evaluation committee. CO3: Analyze new technologies in all engineering fields.



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48	IV/II	MS701OE	Total Quality Management (Open Elective-III)	 CO1: To realize the importance of significance of quality. CO2: Manage quality improvement teams. CO3: Identify requirements of quality improvement programs. CO4: Apply the concepts of HRM in Recruitment, Selection, Training & Development. CO5: Develop PERT/CPM Charts for projects of an enterprise and estimate time & cost of project.
49	IV/II	CE852PE	Payment Design (Professional Elective-V)	CO1: Characterize the response characteristics of soil, aggregate, asphalt, and asphalt mixes. CO2: Analyze flexible pavements. CO3: Analyze rigid pavements. CO4: Design a flexible pavement using IRC, Asphalt Institute, and AASHTO methods. CO5: Design a rigid pavement using IRC. CO6: Design a rigid pavement using AASHTO methods.
50	IV/II	CE864PE	Industrial Waste Water Treatment (Professional Elective-VI)	CO1: Identify the characteristics of industrial wastewaters. CO2: Describe pollution effects of disposal of industrial effluent. CO3: Identify and design treatment options for industrial wastewater. CO4: Formulate environmental management plan. CO5: Design of Digester Tank. CO6: Design of Oxidation Ponds, Lagoons.
51	IV/II	CE801PC	Major Project	CO1: Learn to work as a team and to focus on getting a working project done within a stipulated period of time. CO2: demonstrate the understanding of impact of engineering solutions on the society. CO3: Plan, analyze, design and implement using different tools.

HOD/CIVIL Department

Civil Engg. Dept.

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