

BE Civil : CO-PO/PSO Mapping - 2015 Pattern

Course	Course code	CO Statements (Students should be able to..)
Environmental Engineering - II	C401.1	Design of circular sanitary sewer and explain characteristics of sewage and stream sanitation.
	C401.2	Design of screen chamber, grit chamber, and primary sedimentation tank.
	C401.3	Describe and design the secondary treatment units with special emphasis on activated sludge process and trickling filter.
	C401.4	Design of oxidation pond, aerated lagoon and explain root zone cleaning system.
	C401.5	Classify and design onsite sanitation treatment systems and explain anaerobic digester in detail.
	C401.6	Explain the characteristics and the treatment process of industrial wastewater of sugar, dairy and distillery industry.
Transportation Engineering	C402.1	Interpret and study of rural road development vision and on-going road development projects and earlier plans.
	C402.2	Evaluate Geometric design of highways.
	C402.3	Categorize the road traffic regulation and control devices.
	C402.4	Experiment and Validate Pavement materials suitability in mix-design.
	C402.5	Design of pavement using IS Code and IRC guidelines.
	C402.6	Adapt the Modern Trends in Pavement Construction.
Structural Design and Drawing - III	C403.1	Compute the stresses and losses in PSC Structures.
	C403.2	Designing of PSC rectangular and flanged beams with end block, one way and 2 way post tensioned slabs conforming to IS: 1343:2012.
	C403.3	Designing of PT flat slab conforming to IS:456-2000, IS: 1343:2012
	C403.4	Analysis and design of RCC cantilever T and L shape retaining walls conforming to IS 456:2000.
	C403.5	Analyze and Design Liquid Retaining Structures resting on ground conforming to IS:3370-2009.
	C403.6	Derive the equations of motion for free, forced, un-damped and damped vibrations. Estimate the EQ forces by seismic coefficient method conforming to IS 1893:2002.
E1 (Advanced Concrete Technology)	C404.1	Explore the properties of concrete and types of cement, aggregates and admixtures.
	C404.2	Select the utilization of special types of concrete as per requirement.
	C404.3	Design the grade of concrete as per requirement and Explain Advanced non-destructive testing methods.
	C404.4	Explain the development and importance of FRC.
	C404.5	Differentiate the properties of hardened FRC under compression and tension.
	C404.6	Explain the properties and applications of Ferrocement.
E2 (TQM & MIS in Civil Engineering)	C405.1	Recognize quality & contribution of quality gurus.
	C405.2	Relate the functioning and application of TQM & Six Sigma.
	C405.3	Implement ISO 9001 principles in preparation of quality manual.
	C405.4	Construct & apply management control & certification systems.
	C405.5	Execute TQM Implementation and various Quality Awards.
	C405.6	Justify MIS & its application in construction sector.
E2 (Integrated Water Resources PM)	C405.1	Explain the water resources in India with water infrastructure problems, perspectives and water laws.
	C405.2	Analyse the water pricing and study the Paradigm shift in water management.
	C405.3	Assess the surface and subsurface water, import/export of water and explain the flood & drought management
	C405.4	Evaluate the water demand and supply based management.
	C405.5	Buid a sytem to protect environment and evaluate the social impacts on water resources developments.
	C405.6	Prepare the basin planning & watershed management.

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Project Phase I	C406.1	Undertake problem identification and need of its solution.
	C406.2	Demonstrate a sound technical knowledge about their selected project.
	C406.3	Invent the required methodology for formulation and solution.
	C406.4	Design engineering solutions to complex problems utilising prior art.
Dams and Hydraulic Structures	C407.1	Differentiate the types of dams and explain the importance of instrumentation for safety of dams.
	C407.2	Analyze the Stability of gravity dam and describe the Concept of Arch Dam.
	C407.3	Design the spillways with appropriate given data and explain the concept of Spillway gates.
	C407.4	Explain the types of Earthen dam, failures and Diversion head works.
	C407.5	Design of lined and unlined Canals and classify the various types of canal structures.
	C407.6	Explain the importance of River training works and CD works.
Quantity Surveying, Contracts and Tenders	C408.1	Choose and apply the appropriate principles in quantity computations.
	C408.2	Formulate the detail estimates and bill of quantities for various civil engineering projects.
	C408.3	Exercise schedule of rates using DSR specifications.
	C408.4	Judge the value through current market rates and prepare valuation report.
	C408.5	Formulate the tender and explore PWD work execution processes.
	C408.6	Apply the skill to defend a contract by knowing arbitration laws.
E3 (Air Pollution and control)	C409.1	Explore the meteorological aspects, Gaussian model and Emission inventory.
	C409.2	Classify and analyze Air sampling methods.
	C409.3	Select methods for control and prevention of air pollution.
	C409.4	Design of air pollution control equipment's.
	C409.5	Discuss Air Pollution prevention and control Act.
	C409.6	Explore the Environmental impact assessment and management.
E3 (Statistical Analysis and Computational Methods in Civil Engineering)	C409.1	Apply various numerical techniques, principles and their application to Civil engineering problems.
	C409.2	Use numerical methods to obtain approximate solutions to mathematical problems.
	C409.3	Analyze and evaluate accuracy of various numerical methods and their applicability.
E4 (Construction Management)	C410.1	Summarize the construction project monitoring and reporting system.
	C410.2	Evaluate the progress of projects by using project scheduling and work study methods.
	C410.3	Interpret the legal and financial aspects of project.
	C410.4	Apply the risk management and value analysis models in construction projects.
	C410.5	Justify and implement Material and Human Resource management policies in construction organizations.
	C410.6	Recognize the importance and application of artificial intelligence technique.
PRO	C411.1	Conduct experimentory investigation by adopting selected methodology.
	C411.2	tabulate and validates the outcomes in result analysis.
	C411.3	Write project thesis by adopting modern tool sets.
	C411.4	Demonstrate the knowledge, skills and attitudes of a professional engineer.