



Program : Civil Engineering	
Final Year : Semester - VII	
Course Code: CEC701	
Course Name: Design and Drawing of Reinforced Concrete Structures	
CEC701.1	Design G+3 RCC framed building using IS code recommendations.
CEC701.2	Design different types of retaining walls with detailing of reinforcement.
CEC701.3	Design different types of water tanks with detailing of reinforcement.
CEC701.4	Apply the basic concepts of structural dynamics.
CEC701.5	Evaluate the response of structure during an earthquake and calculate design forces.
CEC701.6	Explain principles of Pre-stressed Concrete and its losses.
Course Code: CEC702	
Course Name: Quantity Survey, Estimation & Valuation	
CEC702.1	Apply the measurement systems to various civil engineering items of work.
CEC702.2	Draft the specifications for various items of work & determine unit rates of items of works.
CEC702.3	Estimate approximate cost of the structures by using various methods & prepare detailed estimates of various civil engineering structures, including bar bending schedule, by referring drawings.
CEC702.4	Assess the quantities of earthwork & construct mass haul diagrams.
CEC702.5	Draft tender notice & demonstrate the significance of the tender as well as contract process.
CEC702.6	Determine the present fair value of any constructed building at stated time.
Course Code: CEDLO7011	
Course Name: Pre-stressed Concrete	
CEDLO7011.1	Explain the concept of pre-stressing, its casting techniques and applications.
CEDLO7011.2	Describe difference between RCC and PSC elements and their behavior.
CEDLO7011.3	Estimate the loss of stresses in pre-stressing steel.
CEDLO7011.4	Analyze and design the pre-stressed concrete element using relevant IS Code.



Program : Civil Engineering	
Final Year : Semester - VII	
Course Code: CEDLO7013	
Course Name: Appraisal & Implementation of Infrastructure Projects	
CEDLO7013.1	Classify the projects and describe the phases involved in project formulation.
CEDLO7013.2	Prepare a detailed project report on the basis of various feasibility studies and SWOT analysis.
CEDLO7013.3	Devise a project's development cycle and get acquainted with the different appraisals in the process of deciding the worthiness of a project.
CEDLO7013.4	Exhibit and apply the managerial skills and knowledge of financial aspects required during the implementation of projects.
CEDLO7013.5	Identify various sources for project finance.
CEDLO7013.6	Know the various agencies involved in project implementation as well as select the method of project implementation which is best suited for a particular project.
Course Code: CEDLO7015	
Course Name: Advanced Construction Technology	
CEDLO7015.1	Evaluate the procedure of construction techniques for sub structure of major civil engineering projects.
CEDLO7015.2	Get a thorough knowledge of various stages of construction of super structure of major civil engineering projects.
CEDLO7015.3	Gain an experience in the implementation of new construction technology on engineering concepts which are applied in field Advanced construction technology in special structures.
CEDLO7015.4	Get a diverse knowledge of the different methods of advancement in construction techniques and ground improvement techniques.
CEDLO7015.5	Learn various dredging systems for major civil engineering projects.
CEDLO7015.6	Explain the theoretical and practical aspects of rehabilitation and strengthening techniques in civil engineering along with the design and management applications.
Course Code: CEDLO7022	
Course Name: Solid and Hazardous Waste Management	
CEDLO7022.1	Acquire the knowledge of functional elements of solid waste management.
CEDLO7022.2	Illustrate solid waste collection system, route optimization techniques, transfer station and processing of solid waste.
CEDLO7022.3	Develop the ability to plan waste minimization and processing of solid waste.
CEDLO7022.4	Explain approaches to treat the solid waste in the most effective manner for sustainable development.
CEDLO7022.5	Discuss safe methods of handling, management and disposal of hazardous waste.
CEDLO7022.6	Summarize waste management techniques used for assorted solid waste.



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Course Code: CEDLO7023	
Course Name: Ground Improvement Techniques	
CEDLO7023.1	Identify the problems associated with the existing ground conditions and recognize the need for ground improvement.
CEDLO7023.2	Explain shallow and deep compaction techniques, pre-compression and vertical drains as well as estimate maximum dry density and consolidation settlement.
CEDLO7023.3	Evaluate soil stabilization and select the effective soil stabilization technique.
CEDLO7023.4	Apply knowledge of grouting as per IS 14343:1996.
CEDLO7023.5	Design stone column as per IS 15284-1 (2003).
CEDLO7023.6	Describe reinforced earth mechanism, multiple functions of Geosynthetics and evaluate capacity of anchors.
Course Code: CEDLO7024	
Course Name: Green Building Constructions	
CEDLO7024.1	Explain environmental impact of buildings, discuss the concepts of sustainable development & green buildings and overview the features of green buildings.
CEDLO7024.2	Describe site selection, planning and designing of green buildings.
CEDLO7024.3	Explain water conservation and energy efficiency in green buildings.
CEDLO7024.4	Identify green building materials and indoor environmental quality.
CEDLO7024.5	Apply green building rating systems.
CEDLO7024.6	Describe green audit and green retrofitting.
Course Code: CEDLO7026	
Course Name: Environmental Impact Assessment	
CEDLO7026.1	Demonstrate the understanding of concept of Sustainable Development and justify the methods of achieving Sustainable Development.
CEDLO7026.2	Overview of assessing risks posing threats to the environment.
CEDLO7026.3	List and evaluate different risks associated with given project.
CEDLO7026.4	Conduct Environmental Audit.
CEDLO7026.5	Explain the importance of stakeholders in the EIA process.
CEDLO7026.6	Conduct different case studies/examples of EIA in practice.



Program : Civil Engineering	
Final Year : Semester - VII	
Course Code: ILOC7017	
Course Name: Disaster Management and Mitigation Measures	
ILOC7017.1	Get to know natural as well as manmade disaster and their extent and possible effects on the economy.
ILOC7017.2	Plan of national importance structures based upon the previous history.
ILOC7017.3	Get acquainted with government policies, acts and various organizational structure associated with an emergency.
ILOC7017.4	Get to know the simple do's and don'ts in such extreme events and act accordingly.
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CEL701.2	Design different types of water tanks with detailing of reinforcement.
CEL701.3	Design different types of retaining walls with detailing of reinforcement.
CEL701.4	Apply the basic concepts of structural dynamics.
CEL701.5	Explain response of structure during an earthquake and calculate design forces.
CEL701.6	Explain principles of Prestressed Concrete and its losses.
Course Code: CEL702	
Course Name: Quantity Survey, Estimation & Valuation	
CEL702.1	Identify current unit rates of various construction materials through market survey & also study District Schedule of Rates (DSR).
CEL702.2	Prepare rate analysis of few important Items of work.
CEL702.3	Estimate approximate cost of the structures by using various methods & prepare detailed estimates of various civil engineering structures, including bar bending schedule, by referring drawings.
CEL702.4	Assess the quantities of earthwork & construct mass haul diagrams.
CEL702.5	Draft tender notice & demonstrate the significance of the tender as well as contract process.
CEL702.6	Evaluate present fair value of any constructed building at stated time.



Program : Civil Engineering	
Final Year : Semester - VII	
Course Code: CEP701	Course Name: Major Project Part-I
CEP701.1	Review & comprehend literature in the selected domain.
CEP701.2	Articulate problem statement & identify the objectives.
CEP701.3	Identify existing methods or solutions to solve identified problem.
CEP701.4	Identify modern engineering tools & other resources to solve the problem.
CEP701.5	Formulate methodology to solve the identified problem.
CEP701.6	Effectively communicate their project work by writing reports & presentations.



Program : Civil Engineering	
Final Year : Semester - VIII	
Course Code: CEDLO8011	Course Name: Bridge Engineering
CEDLO8011.1	Choose the suitable type of bridge according to site condition.
CEDLO8011.2	Design RC Culvert and RC balanced cantilever bridge using relevant IRCs.
CEDLO8011.3	Design prestressed concrete deck slab bridge and I-girder bridge using relevant IRCs.
CEDLO8011.4	Design steel lattice girder bridge using IRS loading.
CEDLO8011.5	Choose different bearings, foundations, piers and abutments based on their suitability.
CEDLO8011.6	Choose method of erection of bridge superstructure and repair techniques of existing bridges.
Course Code: CEDLO8013	Course Name: Construction Safety
CEDLO8013.1	Apply safety mechanisms and concepts for improving overall safety of construction sites.
CEDLO8013.2	Demonstrate the various safety requirements.
CEDLO8013.3	Explain the various techniques to prevent accidents.
CEDLO8013.4	Examine construction safety management.
CEDLO8013.5	Implement safety policies, methods and training on construction sites.
CEDLO8013.6	Practice safety in construction operations.
Course Code: CEDLO8015	Course Name: Industrial Waste Treatment
CEDLO8015.1	Explain the impact of industrial wastewater characteristics on natural streams.
CEDLO8015.2	Analyze various stream protections measures to protect the natural streams.
CEDLO8015.3	Summarize waste minimization techniques for industrial waste water.
CEDLO8015.4	Relate biological treatment concept and summarize various treatments along with advance technologies.
CEDLO8015.5	Describe waste water generated during manufacturing process and decide the suitable treatment for effluents.
CEDLO8015.6	Evaluate legislative framework for the remediation of industrial wastewater through environmental audit, environmental impact assessment and common effluent treatment plant.



Program : Civil Engineering	
Final Year : Semester - VIII	
Course Code: CEDLO8021 Course Name: Repairs, Rehabilitation and Retrofitting of Structures	
CEDLO8021.1	Describe the concept of repair and its need.
CEDLO8021.2	Classify various causes of deterioration of concrete structure and Distresses monitoring techniques.
CEDLO8021.3	Classify various materials of repairs and their properties.
CEDLO8021.4	Explain various methods of repairs of concrete structure.
CEDLO8021.5	Describe various methods of repairs of steel structure.
CEDLO8021.6	Explain seismic retrofitting and maintenance of heritage structures.
Course Code: CEDLO8024 Course Name: Smart Building Materials	
CEDLO8024.1	Explain the importance of the smart materials in Civil Engineering structures.
CEDLO8024.2	Describe the working principles of the smart materials.
CEDLO8024.3	Learn to select appropriate sensors.
CEDLO8024.4	Explain the smart concrete and its use in bridges.
CEDLO8024.5	Explain the use of smart materials in the structural health monitoring.
CEDLO8024.6	Describe the sensing technology and select appropriate sensors for structural health monitoring.
Course Code: ILOC8018 Course Name: Digital Business Management	
ILOC8018.1	Identify drivers of digital business.
ILOC8018.2	Illustrate various approaches and techniques for E-business and management.
ILOC8018.3	Prepare E-business plan.
Course Code: ILOC8018 Course Name: Environmental Management	
ILOC8019.1	Describe the concept of environmental management.
ILOC8019.2	Evaluate ecosystem and interdependence, food chain etc.
ILOC8019.3	Compare and interpret environment related legislations.



Program : Civil Engineering	
Final Year : Semester - VIII	
Course Code: CEL801	Course Name: Construction Management
CEL801.1	Summarize & apply the knowledge of management functions like planning, scheduling, Executing & controlling the construction projects.
CEL801.2	Prepare feasible project schedule by using various scheduling techniques.
CEL801.3	Gain knowledge of managing various resources & recommend best method of allocating resources to the project.
CEL801.4	Develop optimum relationship between time & cost for construction project.
CEL801.5	Implement quality & safety measures on construction sites during execution of Civil Engineering projects.
CEL801.6	Explain the importance of labour acts.
Course Code: CEP801	Course Name: Major Project- Part II
CEP801.1	Perform on analytical, experimental or numerical method to solve identified problem.
CEP801.2	Produce alternative design solution to meet the functional requirements of the defined problem.
CEP801.3	Represent the data in Tabular or graphical forms so as to facilitate, analysis & explain of the data.
CEP801.4	Express Engineering principles & manage the finance required for the execution of the Project.
CEP801.5	Infer at results, conclusion with its validation, also propose the future scope of work on the identified problem.
CEP801.6	Communicate effectively their project work by writing reports and publishing technical papers based on entire project work.