

## B.Tech. (Civil Engineering) (2011 Syllabus)

### Program outcomes:

- a. A graduate will demonstrate a fundamental understanding of the basic sciences, mathematics and engineering concepts by applying them to engineering problems of varying degrees of complexity.
- b. A graduate shall perform high quality simulations and experiments for problems of varying degrees of complexity, interpret the outputs and infer correct results and trends from the experiments.
- c. A graduate shall be equipped in designing efficient solutions for complex engineering problems, while complying with all established social, medical, environmental norms.
- d. A graduate will be trained as a team player, well versed in understanding the dynamics of working in a team, in leading when necessary and comfortable working across the globe.
- e. A graduate will be competent in applying systematic rigor to understanding an engineering problem, exploring its background, investigating possible solution methodologies and comparing their merits and demerits.
- f. A graduate shall be sensitive to social, legal and ethical concerns and tune his knowledge to be a responsible engineer adhering to all established practices of his profession. She/he will display special concern for devising environment friendly solutions that shall make a positive impact on society.
- g. A graduate will be articulate in his presentation, oral, written and graphical. He will convey his designs in unambiguous and clear terminology use accepted documentation tools and provide instructions which are easily interpretable.
- h. A graduate will demonstrate the traits of learning and unlearning throughout his professional career, and be willing to learn new techniques, methods and processes.
- i. A graduate shall determine the financial aspects of a project with sufficient reliability make effective cost estimates and convey achievable timelines for his projects.
- j. A graduate shall be adept at the use of the appropriate Civil Engineering tools to rapidly prototype and deploy efficient solutions to real life problems. In doing so he should demonstrate sufficient knowledge of competing tools and their relative merits and demerits.

Course outcomes:

Name of Course	Course outcomes
CE 3001 – Strength of Materials	<p>Students who successfully complete this course will have demonstrated an ability to:</p> <ol style="list-style-type: none"><li>1. Determine strength, stiffness, and stability of the various load carrying structural members.</li><li>2. Solve application based problems with different load condition</li><li>3. Build the necessary theoretical background for further structural analysis and design courses.</li><li>4. Self Motivated Inquiry</li></ol>
CE 3003 – Surveying - I	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"><li>1. Understand the working principles of different surveying instruments.</li><li>2. Record and interpret surveying and levelling measurements.</li><li>3. Prepare survey maps utilising different surveying techniques.</li><li>4. Measure/calculate areas and volumes.</li></ol>
CE 3005 – Geotechnical Engineering - I	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"><li>1. Classify the soil from its index properties</li><li>2. Solve practical problems related to permeability and seepage, estimate settlement due to consolidation and optimum moisture content for soil stabilization</li><li>3. Compute shear strength parameters for field conditions</li><li>4. Compute lateral earth pressure for the design of Earth Retaining Structures</li><li>5. Analyze stability of embankments</li></ol>

<p>CE 3007 – Building Materials &amp; Construction</p>	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"> <li>1. Explain the manufacturing process, physical and chemical properties and uses of various building materials.</li> <li>2. Analyze the suitability of different building materials and significance in using those materials in relation with building's function.</li> <li>3. Perform quality control tests on different construction materials.</li> <li>4. Plan and execute the construction of various components of substructure and superstructure.</li> </ol>
<p>CE 3002 – Strength of Materials Laboratory</p>	<p>At the end of the course, a student will be able to -</p> <ol style="list-style-type: none"> <li>1. Integrate the basic Strength of Materials theorems to different experiments.</li> <li>2. Analyze the experimental results and make a comparison with the bench mark results.</li> <li>3. Demonstrate their skill to perform experiments independently or as a team in a multi-disciplinary setting.</li> <li>4. Generate new ideas to perform experiments in efficient way with greater accuracy in the field of Mechanics of Solids.</li> </ol>
<p>CE 3004 – Surveying – I (Sessional)</p>	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"> <li>1. Understand the working principles of different surveying instruments.</li> <li>2. Prepare survey maps by Chain Surveying, Compass Traversing, Plane Table Surveying.</li> <li>3. Recording levelling measurements and prepare Profile Levelling, Cross-Sectioning drawings.</li> </ol>
<p>CE 3006 – Engineering Geology and Rock Mechanics</p>	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"> <li>6. Classify the Rock mass through Rock Mass rating, Rock Quality designations, Slake durability index, Tensile strength, Compressive strength..</li> <li>7. Identify the presence and orientation of</li> </ol>

	<p>structural discontinuities like faults, folds, shear plane, joints and bedding planes</p> <ol style="list-style-type: none"> <li>8. Compute strength parameters for in-situ conditions of rock mass comprising of structural discontinuities.</li> <li>9. Compute stability of Mining and Civil Engineering embankments.</li> <li>10. Hazard zonation of embankments considering geo-technical, geological, hydro-geological and dynamic forces.</li> </ol>
<p>CE 4001 – Structural Analysis - I</p>	<p>Students who successfully complete this course will have demonstrated an ability to:</p> <ol style="list-style-type: none"> <li>1. Analyse statically determinate structures (Truss, Beams, Frame, Three hinged Arch)</li> <li>2. Analyse the cable structures.</li> <li>3. Asses the stability problems of masonry structure.</li> </ol>
<p>CE 4003 – Structural Design - I</p>	<p>Students who successfully complete this course will have demonstrated an ability to:</p> <ol style="list-style-type: none"> <li>1. Enhance confidence on Designing abilities for steel structures.</li> <li>2. Apply IS 800:2007 code to design various structural steel elements.</li> <li>3. Will be able to design primary steel structural elements and their connections.</li> <li>4. Self-motivated inquiry.</li> </ol>
<p>CE 4005 – Transportation Engineering - I</p>	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"> <li>1. Design highway geometrics.</li> <li>2. Understand traffic flow fundamentals.</li> <li>3. Undertake traffic studies, analyse the data and plan traffic management.</li> <li>4. Design flexible and rigid pavements.</li> <li>5. Execute construction and maintenance of highways.</li> </ol>

CE 4007 – Fluid Mechanics - I	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the properties of fluids.</li> <li>2. Understand the principles of fluid statics, kinematics and dynamics.</li> <li>3. Apply the principles of fluid flow to real life problems.</li> <li>4. Solve various problems of fluid flow.</li> <li>5. Design various components of fluid flow.</li> </ol>
CE 4002 – Structural Design – I (Sessional)	<p>After successfully completing the course, students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand behaviour of different types of structural components and connections made by steel.</li> <li>2. Understand standard procedure for design of Steel structures and their components.</li> <li>3. Apply IS 800:2007 code to design various structural components made by steel.</li> <li>4. Solve Steel design related problems for different types of connections and loading parameters.</li> <li>5. Design Structural components made by steel.</li> </ol>
CE 4004 – Fluid Mechanics – I Laboratory	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Determine hydrostatic force and centre of pressure on plane surface.</li> <li>2. Determine metacentric height of floating body.</li> <li>3. Verify Bernoulli’s energy equation.</li> <li>4. Determine coefficient of discharge for orifice, mouthpiece, venturimeter, and triangular notch.</li> <li>5. Visualise laminar and turbulent flow.</li> <li>6. Determine friction factor in pipe flow.</li> <li>7. Measure discharge with watermeters.</li> </ol>
CE 4006 – Civil Engineering Drawing	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand and draw conventional signs and symbols used in building drawing.</li> <li>2. Understand and draw brick bonds for various wall thickness.</li> <li>3. Know various components of building.</li> <li>4. Understand basics of building drawing.</li> <li>5. Draw plan, elevation, and section of buildings.</li> </ol>

<p>CE 5001 – Structural Analysis - II</p>	<p>Students who successfully complete this course will have demonstrated an ability to:</p> <ol style="list-style-type: none"> <li>1. Analyse indeterminate structures by various methods.</li> <li>2. Plot and interpret the influence line diagram.</li> </ol>
<p>CE 5003 – Fluid Mechanics – II</p>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the open channel flow.</li> <li>2. Analyse uniform flow in open channels.</li> <li>3. Understand the concept of specific energy, critical depth, and specific force and apply these in analysis of critical flow, channel transitions, and discharge measurement.</li> <li>4. Understand and analyse gradually varied flow and determine the surface profiles.</li> <li>5. Understand and analyse hydraulic jump, waves and surges in open channel.</li> </ol>
<p>CE 5005 – Structural Design - II</p>	<p>Students who successfully complete this course will have demonstrated an ability to:</p> <ol style="list-style-type: none"> <li>1. Enhance confidence on Designing abilities for Reinforced Concrete structures.</li> <li>2. Apply IS 456:2000 code to design various Concrete elements (Beam, column, Slab, Footing, Stair case)</li> <li>3. Self-motivated inquiry.</li> </ol>
<p>CE 5007 – Construction Planning and Management</p>	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"> <li>1. Project management and Indian construction industry</li> <li>2. Analyze the project from economical decision making</li> <li>3. Use and role of different construction equipments.</li> <li>4. Capable of making Project network i.e. CPM, PERT &amp; Bar network.</li> <li>5. Capable of developing CPM cost models for Resource allocation..</li> </ol>

<p>CE 5002 – Structural Design – II (Sessional)</p>	<p>Students who successfully complete this course will have demonstrated an ability to:</p> <ol style="list-style-type: none"> <li>4. Analyse and Design Reinforced Concrete structures.</li> <li>5. Apply IS 456:2000 code to design various RCC elements (Beam, column, Slab, Footing, Stair case)</li> </ol>
<p>CE 5004 – Specification, Estimation and Costing (Sessional)</p>	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"> <li>1. Undertake quantity estimation of different items of civil work and prepare BOQs for a building construction.</li> <li>2. Undertake rate analysis for different items of work commonly encountered in a building construction.</li> <li>3. Draft the detailed specifications and workmanship required for different items of work included in BOQ.</li> <li>4. Understand the different types of Civil Engineering contracts and the different conditions and clauses to be included in a Civil Work Tender.</li> </ol>
<p>CE 5006 – Fluid Mechanics Laboratory - II</p>	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Estimate seepage through earth dam by drawing flownet.</li> <li>2. Understand the analogy between groundwater flow and viscous flow between two parallel plates.</li> <li>3. Investigate flow over ogee weir, hydraulic jump, channel roughness, impact of jet, and cavitation.</li> <li>4. Determine efficiency and characteristic curves for reciprocating pump, centrifugal pump, and gear pump.</li> <li>5. Determine efficiency and characteristic curves for Pelton turbine and Francis turbine.</li> </ol>
<p>CE 6001 – Environmental Engineering</p>	<p>Course will enable students to</p> <ol style="list-style-type: none"> <li>1. Assess water quality and quantity requirements</li> </ol>

	<ol style="list-style-type: none"> <li>2. Choose different types of intake structures, and water conveyance systems from surface water sources</li> <li>3. Design various components involved in water treatment operations</li> <li>4. Interpret the concepts of water distribution systems designing</li> <li>5. Understand and explain the fundamentals of wastewater generation, conveyance system, wastewater quality and sewage treatment</li> </ol>
<p>CE 6003 – Transportation Engineering - II</p>	<p>Students will be able to</p> <ol style="list-style-type: none"> <li>1. Understand the various components of railways, their performance and maintenance</li> <li>2. Design the horizontal and vertical curves in railway tracks</li> <li>3. Design turnouts, crossings and cross-overs, understand the functions of railway stations, yards and sidings</li> <li>4. Understand principles of signalling and interlocking , determine tractive resistances and hauling capacity of train</li> <li>5. Understands the various components of civil engineering importance in Harbour, docks and airports, their function and design aspects.</li> </ol>
<p>CE 6005 – Surveying - II</p>	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"> <li>1. Set out horizontal and vertical curves.</li> <li>2. Record astronomical observations with respect to celestial bodies.</li> <li>3. Undertake hydrographic and triangulation surveys.</li> <li>4. Estimating errors in surveys and minimise them.</li> </ol>
<p>CE 6007 – Geotechnical Engineering - II</p>	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"> <li>1. Investigate the site and explore subsoil.</li> <li>2. Identify the importance of Field Tests: Standard penetration test; Dynamic and Static cone penetration tests, Vane shear test.</li> <li>3. Explain Stress Distribution in Soil Media and</li> </ol>



	<p>Settlement.</p> <p>4. Differentiate between ultimate and safe bearing capacities, allowable bearing pressure Gross and net Bearing Capacities of soil.</p> <p>5. Understand design criteria and working of Shallow foundation and pile foundation.</p> <p>6. Understand the basics of Machine Foundations and Caissons.</p>
CE 6002 – Surveying – II (Sessional)	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"> <li>1. Undertake theodolite traversing.</li> <li>2. Set out horizontal curves using different methods.</li> <li>3. Execute surveying using new technologies like Total Station, Digital Theodolite and AutoLevel.</li> </ol>
CE 6004 – Environmental Engineering Laboratory	<p>Students will be able to</p> <ol style="list-style-type: none"> <li>1. Understand the essentials of water sampling and physico-chemical analysis</li> <li>2. Apply different volumetric analysis for water quality assessment</li> <li>3. Use different spectrophotometric analysis for water quality assessment</li> </ol>
CE 6006 – Geotechnical Engineering Laboratory	<p>Students will be able to</p> <ol style="list-style-type: none"> <li>1. Determine the index properties of soil like Consistency limits, Specific gravity and permeability</li> <li>2. Identify and classify the soil from grain size analysis</li> <li>3. Determine the shear strength parameters ( Cohesion and angle of internal friction) and unconfined compressive strength</li> <li>4. Find the in-situ bulk density and Optimum moisture content and maximum dry density</li> </ol>
CE 7001 – Earthquake Resistant Design	<p>After successfully completing the course, students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand dynamic loading and their effects on</li> </ol>

	<p>any kind of structures.</p> <ol style="list-style-type: none"> <li>2. Differentiate dynamic behaviour of structures from its behaviour on static loading.</li> <li>3. Apply IS 1893: 2016 code for designing different type of structures.</li> <li>4. Follow different standard norms for designing structure based on dynamic loading considerations.</li> <li>5. Evaluate condition of any structures for renovation or retrofitting purpose.</li> </ol>
CE 7003 – Irrigation Engineering and Hydrology	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the basics of irrigation and determine water requirement of crops.</li> <li>2. Design alluvial and lined canals.</li> <li>3. Understand well irrigation and analyse flow to open well and tube well.</li> <li>4. Understand and design diversion headwork and cross drainage work.</li> <li>5. Understand and analyse various events of hydrologic cycle like precipitation, infiltration, evapotranspiration, and run off.</li> <li>6. Understands and analyse floods and flood routing.</li> </ol>
CE 7002 – Computer Aided Analysis & Design Lab.	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"> <li>1. Model, analyse and design steel structures in STAADPro v8i.</li> <li>2. Model, analyse and design superstructure and substructure of a multistorey building in STAADPro 8i.</li> <li>3. Perform basic operations of Remote Sensing in ERDAS Imagine software.</li> </ol>
CE 7004 – Design and Drawing of Hydraulic Structures (Sessional)	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Design various hydraulic structures like canal fall, vertical drop weir, canal regulator, syphon aqueduct type-III.</li> <li>2. Prepare the drawing having plan, section, and side view for the design of these hydraulic</li> </ol>

	<p>structures.</p> <ol style="list-style-type: none"> <li>Analyse the forces acting on gravity dam and find the stresses.</li> </ol>
CE 7006 – Concrete and Road Materials Lab.	<p>Students will be able to</p> <ol style="list-style-type: none"> <li>Determine consistency, setting times, fineness and soundness of cement</li> <li>Determine fineness modulus of fine aggregate and coarse aggregate, bulking of fine aggregate, flakiness and elongation index, abrasion value and impact factor of coarse aggregate,</li> <li>Determine the compaction factor, slump and compressive strength of concrete</li> <li>Determine the physical properties of bitumen</li> </ol>
CE 8002 – Project/ Industrial Training	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>Perform a literature review on the chosen topic.</li> <li>Apply various concepts, principles, and knowledge of civil engineering courses in planning, analysis, investigation, and design of problems related to civil engineering.</li> <li>Inculcate research aptitude while working on any topic related to civil engineering.</li> <li>Conclude the work done with proper analysis of results.</li> <li>Present the work done and prepare a report on that.</li> </ol>
CE 8004 – Structural Engineering Laboratory	<p>On completion of the course, a student will be able to:</p> <ol style="list-style-type: none"> <li>Co-relate the theoretical structural analysis of structures with the obtained results on model structures.</li> <li>Present the limitations of theoretical assumptions</li> </ol>
CE 7005 – Finite Element Applications in Civil Engineering	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>Understand the utility of Finite element method in solving complex civil engineering systems.</li> <li>Appreciate variational and convention methods of finding stiffness of a given structure.</li> </ol>

	<ol style="list-style-type: none"> <li>3. Analyse bars and trusses using finite element method.</li> <li>4. Analyse beams and frames using finite element method.</li> </ol>
CE 7007 – Computer Aided Structural Design	<p>On completion of the course:</p> <ol style="list-style-type: none"> <li>1. Students will be able to understand the basic concept of finite element method for analysis of civil engineering structures.</li> <li>2. Student is expected to understand how standard software packages operate.</li> </ol>
CE 7009 – Bridge Engineering and Tunneling	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the guidelines provided in the IRC code of practice.</li> <li>2. Calculate the magnitude of various kinds of loads applicable on bridges.</li> <li>3. Analyse and design bridge superstructure and bearings.</li> <li>4. Understand construction, repair and rehabilitation methods available for bridges.</li> <li>5. Understand the process required for safe and successful tunneling</li> </ol>
CE 7011 – Soil Engineering	<p>At the end of the course, a student will be able to –</p> <ol style="list-style-type: none"> <li>1. Suggest appropriate drainage methods for site specific construction works.</li> <li>2. Get introduced to Bulk head, Cofferdams, Shaft, Tunnels &amp; Conduits.</li> <li>3. Appreciate the importance of environmental geotechnology.</li> <li>4. Interpret soil behaviour based on clay mineralogy &amp; analyse stress paths in soils.</li> <li>5. Comprehend the concept of critical state soil mechanics.</li> </ol>
CE 7013 – Disaster Management	<p>Students will be able to</p> <ol style="list-style-type: none"> <li>1. Understand different phases of disaster risk reduction.</li> <li>2. Assess factors leading to different disasters.</li> </ol>

	<ol style="list-style-type: none"> <li>3. Evaluate the engineered and scientific mechanisms for disaster prevention</li> <li>4. Identify, analyse, and evaluate risk mechanisms for disaster reduction</li> </ol>
CE 7015 – Watershed Engineering and Management	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Acquire the knowledge of hydrology, characteristics and threats to the sustainable management of watershed.</li> <li>2. To Develop the techniques and management strategies after identifying the key factors in a watershed.</li> <li>3. Plan, design and construct the structures for watershed management.</li> <li>4. Present, defend and critically analyse the judgements or ideas based on the defined criteria of watershed</li> </ol>
CE 7017 – Concrete Structures	<p>At the completion of the course, students will be able to:</p> <ol style="list-style-type: none"> <li>1. Show competency in design of advanced reinforced concrete structures</li> <li>2. Understand the behaviour of pre-stressed concrete.</li> </ol>
CE 7019 – Concrete Technology and Materials	<p>At the completion of the course, students will be able to:</p> <ol style="list-style-type: none"> <li>1. Decide the various materials to be incorporated for use in making concrete as per the requirement.</li> <li>2. Design concrete mixes using standard codal provisions of proportioning and develop an understanding of the effects of various parameters on concrete.</li> </ol>
CE 8001 – Environmental Pollution & Control	<p>After successful completion of the course, students will be able to :</p> <ol style="list-style-type: none"> <li>1. Characterise municipal solid waste and understand the different functional elements of a solid waste management system.</li> <li>2. Know the sources, properties, health effects and measurement methods of different air pollutants</li> </ol>

	<p>and their control technologies.</p> <ol style="list-style-type: none"> <li>3. Understand the effect of different meteorological parameters on air pollution and model dispersion of air pollutants.</li> <li>4. Understand the basic terminologies related to noise pollution, relationships between different noise levels and noise pollution control measures.</li> <li>5. Understand the genesis and salient features of major international treaties with regard to pollution control.</li> </ol>
CE 8003 – Harbour, Dock & Airport Engineering	<p>After the completion of this course, students will be</p> <ol style="list-style-type: none"> <li>1. Able to understand the functions of various structures in a port/ harbor</li> <li>2. Having knowledge on dredging and the navigational aids which help a ship to take berth in a port.</li> <li>3. Having knowledge on the components and parts of an airport, aircraft and aircraft characteristics</li> <li>4. Able to solve problems on runway length correction &amp; its orientation by wind rose diagram, design of taxiways, terminal building.</li> <li>5. Having knowledge on different landing aids and landing system</li> </ol>
CE 8005 – Rock Mechanics and applications of Civil Engineering to Surface Mining	<p>After the completion of this course, students will be</p> <ol style="list-style-type: none"> <li>1. Having basics concept of Rock mechanics.</li> <li>2. Able to understand the methods of rock exploration; direct penetration, core boring, core recovery, rock quality designation, laboratory testing of rock specimens.</li> <li>3. Able to understand the mechanical behaviour of rocks.</li> <li>4. Having knowledge of surface mining, advantages and disadvantages of surface mining.</li> <li>5. Understand the rock slope stability in surface mining.</li> <li>6. Having knowledge of Mining environment, air, water and noise pollution due to surface-mining; rehabilitation and resettlement policy of surface-mining.</li> </ol>
CE 8007 – Ground Water	<p>After the completion of this course, students will be:</p>

Engineering	<ol style="list-style-type: none"> <li>1. Understand the basic aquifer parameters and estimate groundwater resources for different hydro-geological boundary conditions.</li> <li>2. Understand well hydraulics and analyse the flow.</li> <li>3. Model the ground water flow; design the artificial ground water recharge.</li> <li>4. Investigate the ground water resources using different techniques.</li> <li>5. Measure the ground water quality.</li> </ol>
CE 8009 – Sewerage and Sewage Treatment	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand the design parameters to be considered while constructing a sewage treatment plant.</li> <li>2. Become familiar with the composition and variation of the nature of sewerage</li> <li>3. Understand the basic chemical and biological mechanisms behind successful sewage treatment</li> <li>4. Conceptualise the right treatment to be opted for specific sewage composition</li> </ol>
CE 8011 – Dam and Water Power Engineering	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Understand dam and reservoir system.</li> <li>2. Understand, analyse, and design the components of earth dam, gravity dam, and arch dam.</li> <li>3. Understand water power development.</li> <li>4. Analyse water hammer and surge tank.</li> <li>5. Determine economical diameter of penstocks.</li> </ol>
CE 8013 – Pre-stressed Concrete	<p>Students will be able to:</p> <ol style="list-style-type: none"> <li>1. Become familiar with the principles of prestressing, Methods and equipments used.</li> <li>2. Analyse the losses prestressed concrete elements and</li> <li>3. Identify and apply the IS1343 code relevant to</li> </ol>

	the design of prestressed concrete members.
CE 8015 – Construction Engineering Practices	<p>Students will be able to:</p> <ol style="list-style-type: none"><li>1. Develop the construction practices and techniques after identifying the factors to be considered in the construction of buildings.</li><li>2. Plan various construction related activities.</li><li>3. Assess various precautionary measures pertaining to construction and services in building.</li></ol>