

<b>DESIGN OF PRE-STRESSEDCONCRETE</b>			
Course Code	<b>18CV81</b>	CIE Marks	40
Teaching Hours/Week(L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03
<b>Course Learning Objectives:</b> This course will enable students to learn Design of Pre Stressed Concrete Elements.			
<b>Module -1</b>			
<b>Introduction and Analysis of Members:</b> Concept of Pre stressing - Types of Pre stressing - Advantages - Limitations –Pre stressing systems - Anchoring devices - Materials - Mechanical Properties of high strength concrete - high strength steel - Stress-Strain curve for High strength concrete. Analysis of members at transfer - Stress concept - Comparison of behavior of reinforced concrete – pre stressed concrete - Force concept - Load balancing concept - Kern point -Pressure line.			
<b>Module -2</b>			
<b>Losses in Pre stress:</b> Loss of Pre stress due to Elastic shortening, Friction, Anchorage slip, Creep of concrete, Shrinkage of concrete and Relaxation of steel - Total Loss. Deflection and Crack Width Calculations of Deflection due to gravity loads - Deflection due to prestressing force -Total deflection - Limits of deflection - Limits of span-to-effective depth ratio -Calculation of Crack Width - Limits of crack width.			
<b>Module -3</b>			
<b>Design of Sections for Flexure:</b> Analysis of members at ultimate strength - Preliminary Design - Final Design for Type I members.			
<b>Module -4</b>			
<b>Design for Shear:</b> Analysis for shear - Components of shear resistance - Modes of Failure - Limit State of collapse for shear - Design of transverse reinforcement.			
<b>Module -5</b>			
Different anchorage system and design of end block by latest IS codes.			
<b>Course outcomes:</b> After studying this course, students will be able to: <ol style="list-style-type: none"> <li>1. Understand the requirement of PSC members for present scenario.</li> <li>2. Analyse the stresses encountered in PSC element during transfer and at working.</li> <li>3. Understand the effectiveness of the design of PSC after studying losses</li> <li>4. Capable of analyzing the PSC element and finding its efficiency.</li> <li>5. Design PSC beam for different requirements.</li> </ol>			
<b>Question paper pattern:</b> <ul style="list-style-type: none"> <li>• The question paper will have ten full questions carrying equal marks.</li> <li>• Each full question will be for 20 marks.</li> <li>• There will be two full questions (with a maximum of four sub- questions) from each module.</li> <li>• Each full question will have sub- question covering all the topics under a module.</li> <li>• The students will have to answer five full questions, selecting one full question from each module.</li> </ul>			
<b>Textbooks:</b>			
<ol style="list-style-type: none"> <li>1. Krishna Raju, N. “Pre stressed Concrete”, Tata McGraw Hill Publishing Company, New Delhi 2006</li> <li>2. Krishna Raju. N., “Pre-stressed Concrete - Problems and Solutions”, CBS Publishers and Distributors, Pvt. Ltd., New Delhi.</li> <li>3. Rajagopalan N, “Pre - stressed Concrete”, Narosa Publishing House, New Delhi</li> </ol>			
<b>Reference Books:</b>			

1. Praveen Nagarajan, "Advanced Concrete Design", Person Publishers
2. P. Dayaratnam, "Pre stressed Concrete Structures", Scientific International Pvt. Ltd.
3. Lin T Y and Burns N H, 'Design of Pre - stressed Concrete Structures' , John Wiley and Sons, New York
4. Pundit G S and Gupta S P, "Pre - stressed Concrete", C B S Publishers, New Delhi
5. IS: 1343: Indian Standard code of practice for Pre stressed concrete, BIS, New Delhi.
6. IS: 3370-Indian Standard code of practice for concrete structures for storage of liquids, BIS, New Delhi.

<b>B. E. CIVIL ENGINEERING</b>			
<b>Choice Based Credit System (CBCS) and Outcome Based Education (OBE)</b>			
<b>SEMESTER - VIII</b>			
<b>BRIDGE ENGINEERING</b>			
Course Code	<b>18CV821</b>	CIE Marks	40
Teaching Hours/Week(L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03
<b>Course Learning Objectives:</b> This course will enable students to understand the analysis and design of concrete Bridges.			
<b>Note: All designs have to be done by Working Stress Method</b>			
<b>Module -1</b>			
Introduction to bridges, classification, selection of bridge site and preliminary and detailed survey work computation of discharge, linear waterway, economic span, afflux, scour depth. Design loads for bridges, introduction to I.R.C. loading standards, Load Distribution Theory, Bridge slabs, Effective width, Introduction to methods as per I.R.C.			
<b>Module -2</b>			
Design of Slab Bridges: Straight and skew slab bridges.			
<b>Module -3</b>			
Design of T beam bridges(up to three girder only) Proportioning of components, analysis of slab using IRC Class AA tracked vehicle, structural design of slab, analysis of cross girder for dead load & IRC Class AA tracked vehicle, structural design of cross girder, analysis of main girder using Courbon's method, calculation of dead load BM and SF, calculation of live load B M & S F using IRC Class AA Tracked vehicle. Structural design of main girder.			
<b>Module -4</b>			
Other Bridges: Design of Box culvert (Single vent only). Design of Pipe culverts.			
<b>Module -5</b>			
Substructures - Design of Piers and abutments, Introduction to Bridge bearings, Hinges and Expansion joints.(No design).			
<b>Course outcomes:</b> After studying this course, students will be able to: <ol style="list-style-type: none"> <li>1. Understand the load distribution and IRC standards.</li> <li>2. Design the slab and T beam bridges.</li> <li>3. Design Box culvert, pipe culvert</li> <li>4. Use bearings, hinges and expansion joints and</li> <li>5. Design Piers and abutments.</li> </ol>			
<b>Question paper pattern:</b> <ul style="list-style-type: none"> <li>• The question paper will have ten full questions carrying equal marks.</li> <li>• Each full question will be for 20 marks.</li> <li>• There will be two full questions (with a maximum of four sub- questions) from each module.</li> <li>• Each full question will have sub- question covering all the topics under a module.</li> <li>• The students will have to answer five full questions, selecting one full question from each module.</li> </ul>			
<b>Textbooks:</b>			
<ol style="list-style-type: none"> <li>1. Johnson Victor. D, "Essentials of Bridge Engineering", Oxford Publishing Company.</li> <li>2. N Krishna Raju, "Design of Bridges, Oxford and IBH publishing company</li> <li>3. T R Jagadeesh and M A Jayaram, "Design of bridge structures", Prentice Hall of India</li> </ol>			
<b>Reference Books:</b>			
<ol style="list-style-type: none"> <li>1. Jain and Jaikrishna, "Plain and Reinforced Concrete", Vol.2.,Nem Chand Brothers.</li> <li>2. Standard specifications and code of practice for road bridges, IRC section I,II, III and IV.</li> <li>3. "Concrete Bridges", The Concrete Association of India</li> </ol>			

<b>B. E. CIVIL ENGINEERING</b>			
<b>Choice Based Credit System (CBCS) and Outcome Based Education (OBE)</b>			
<b>SEMESTER - VIII</b>			
<b>PREFABRICATED STRUCTURES</b>			
Course Code	<b>18CV822</b>	CIE Marks	40
Teaching Hours/Week(L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03
<b>Course Learning Objectives:</b> This course will enable students to			
<ol style="list-style-type: none"> <li>1. Understand modular construction, industrialized construction</li> <li>2. Design prefabricated elements.</li> <li>3. Understand construction methods.</li> </ol>			
<b>Module -1</b>			
<b>Introduction:</b> Need for prefabrication–Principles–Materials–Modular coordination–Standardization–Systems–Production–Transportation–Erection.			
<b>Module -2</b>			
<b>Prefabricated Components:</b> Behavior of structural components–Large panel constructions–Construction of roof and floor slabs–Wall panels–Columns–Shear walls.			
<b>Module -3</b>			
<b>Design Principles:</b> Disuniting of structures-Design of cross section based on efficiency of material used–Problems in design because of joint flexibility–Allowance for joint deformation.			
<b>Module -4</b>			
<b>Joint In Structural Members:</b> Joints for different structural connections–Dimensions and detailing–Design of expansion joints.			
<b>Module -5</b>			
<b>Design For Abnormal Loads:</b> Progressive collapse–Code provisions–Equivalent design loads for considering abnormal effects such as earthquakes, cyclones, etc.,-Importance of avoidance of progressive collapse.			
<b>Course Outcomes:</b> After studying this course, students will be able to:			
<ol style="list-style-type: none"> <li>1. Use modular construction, industrialized construction</li> <li>2. Design prefabricated elements</li> <li>3. Design some of the prefabricated elements</li> <li>4. Use the knowledge of the construction methods and prefabricated elements in buildings</li> </ol>			
<b>Question paper pattern:</b>			
<ul style="list-style-type: none"> <li>• The question paper will have ten full questions carrying equal marks.</li> <li>• Each full question will be for 20 marks.</li> <li>• There will be two full questions (with a maximum of four sub- questions) from each module.</li> <li>• Each full question will have sub- question covering all the topics under a module.</li> <li>• The students will have to answer five full questions, selecting one full question from each module.</li> </ul>			
<b>Textbooks:</b>			
<ol style="list-style-type: none"> <li>1. CBRI, Building materials and components, India, 1990</li> <li>2. Gerostiza C.Z., Hendrikson C. and Rehat D.R., " Knowledge based process planning for construction and manufacturing", Academic Press Inc., 1994</li> </ol>			
<b>Reference Books:</b>			
<ol style="list-style-type: none"> <li>1. KonczT., "Manual of precast concrete construction", Vol. I, II and III, Bauverlag, GMBH,1976.</li> <li>2. "Structural design manual", Precast concrete connection details, Society for the studies in the use of precast concrete, Netherland BetorVerlag, 2009</li> </ol>			

<b>B. E. CIVIL ENGINEERING</b>			
<b>Choice Based Credit System (CBCS) and Outcome Based Education (OBE)</b>			
<b>SEMESTER - VIII</b>			
<b>ADVANCED FOUNDATION ENGINEERING</b>			
Course Code	<b>18CV823</b>	CIE Marks	40
Teaching Hours/Week(L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03
<b>Course Learning Objectives:</b> This course will enable students to			
<ol style="list-style-type: none"> <li>1. Gain knowledge of about advanced topics of foundation design and analyses, supplementing their comprehensive knowledge acquired in basic foundation engineering course.</li> <li>2. Develop profound understanding of shallow and deep foundation analyses.</li> <li>3. Develop understanding of choice of foundation design parameters.</li> <li>4. Learn about cause and effect of dynamic loads on foundation.</li> </ol>			
<b>Module -1</b>			
General bearing capacity equation – Terzaghi’s, Brinch Hansen’s and Mayerhof’s analyses, bearing capacity of footings according to BIS, eccentrically loaded footing, footing on layered soil, Settlement of shallow Foundations: Immediate, consolidation, & differential settlements. Principles of design of footing, Proportioning of footings for equal settlement.			
<b>Module -2</b>			
Design of combined footings by Rigid method, Combined footings (rectangular & trapezoidal), strap footings. Types of rafts, bearing capacity & settlements of raft foundation, Design of raft foundation – Conventional rigid method, Elastic methods, Coefficient of sub-grade reaction, IS code (IS-2950) procedure.			
<b>Module -3</b>			
Introduction Necessity of pile foundations, Classification, Load bearing capacity of single pile by Static formula, Dynamic formula, Pile load test and Penetration tests. Introduction, Pile groups, group action of piles in sand and clay, group efficiency of piles, settlement of piles, negative skin friction, laterally loaded piles and under reamed piles.			
<b>Module -4</b>			
<b>Well Foundations:</b> Introduction, Different shapes and characteristics of wells. Components of well foundation. Forces acting on well foundation. Sinking of wells. Causes and remedies of tilts and shifts. Drilled Piers & Caissons: Introduction, construction, advantages and disadvantages of drilled piers. Design of open, pneumatic and floating caissons. Advantages and disadvantages of floating caissons.			
<b>Module -5</b>			
Machine Foundations: Introduction, free and forced vibrations, Types of Machine foundations, degrees of freedom of a block foundation, general criteria for design of machine foundation, vibration analysis of a machine foundation, determination of natural frequency, vibration isolation and control.			
<b>Course outcomes:</b> After studying this course, students will be able to:			
<ol style="list-style-type: none"> <li>1. Estimate the size of isolated and combined foundations to satisfy bearing capacity and settlement criteria.</li> <li>2. Estimate the load carrying capacity and settlement of single piles and pile groups including laterally loaded piles.</li> <li>3. Understand the basics of analysis and design principles of well foundation, drilled piers and caissons.</li> <li>4. Understand basics of analysis and design principles of machine foundations.</li> </ol>			
<b>Question paper pattern:</b>			
<ul style="list-style-type: none"> <li>• The question paper will have ten full questions carrying equal marks.</li> <li>• Each full question will be for 20 marks.</li> <li>• There will be two full questions (with a maximum of four sub- questions) from each module.</li> <li>• Each full question will have sub- question covering all the topics under a module.</li> <li>• The students will have to answer five full questions, selecting one full question from each module.</li> </ul>			
<b>Textbooks:</b>			
<ol style="list-style-type: none"> <li>1. Punmia B.C., “Soil Mechanics and Foundation Engineering, Laxmi Publications Co., India.</li> <li>2. Donald P. Coduto, “Geotechnical Engineering Principles &amp; Practices”, Prentice-hall of India Ltd, India.</li> <li>3. Murthy V.N.S., “Geotechnical Engineering: Principles and Practices of Soil Mechanics and Foundation Engineering”, CRC Press, New York.</li> </ol>			

**Reference Books:**

1. Bowles J.E., "Foundation Analysis and Design", McGraw Hill Pub. Co. New York.
2. Swami Saran, "Analysis and Design of Substructures", Oxford & IBH Pub. Co. Pvt. Ltd., India.
3. R.B. Peck, W.E. Hanson & T.H. Thornburn, "Foundation Engineering", Wiley Eastern Ltd., India.
4. Braja, M. Das, "Principles of Geotechnical Engineering", Cengage Learning, India.
5. Bureau of Indian Standards: IS-1904, IS-6403, IS-8009, IS-2950, IS-2911 and all other relevant codes.

<b>B. E. CIVIL ENGINEERING</b>			
<b>Choice Based Credit System (CBCS) and Outcome Based Education (OBE)</b>			
<b>SEMESTER - VIII</b>			
<b>REHABILITATION AND RETROFITTING</b>			
Course Code	<b>18CV824</b>	CIE Marks	40
Teaching Hours/Week(L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03
<b>Course Learning Objectives:</b> This course will enable students to;			
<ol style="list-style-type: none"> <li>1. Investigate the cause of deterioration of concrete structures.</li> <li>2. Strategies different repair and rehabilitation of structures.</li> <li>3. Evaluate the performance of the materials for repair.</li> </ol>			
<b>Module -1</b>			
<b>General:</b> Introduction and Definition for Repair, Retrofitting, Strengthening and rehabilitation. Physical and Chemical Causes of deterioration of concrete structures, Evaluation of structural damages to the concrete structural elements due to earthquake.			
<b>Module -2</b>			
<b>Damage Assessment:</b> Purpose of assessment, Rapid assessment, Investigation of damage, Evaluation of surface and structural cracks, Damage assessment procedure, destructive, non-destructive and semi destructive testing systems.			
<b>Module -3</b>			
<b>Influence on Serviceability and Durability:</b> Effects due to climate, temperature, chemicals, wear and erosion, Design and construction errors, corrosion mechanism, Effects of cover thickness and cracking, methods of corrosion protection, corrosion inhibitors, corrosion resistant steels, coatings, and cathodic protection.			
<b>Module -4</b>			
<b>Maintenance and Retrofitting Techniques:</b> Definitions: Maintenance, Facts of Maintenance and importance of Maintenance Need for retrofitting, retrofitting of structural members i.e., column and beams by Jacketing technique, Externally bonding(ERB) technique, near surface mounted (NSM) technique, External post-tensioning, Section enlargement and guidelines for seismic rehabilitation of existing building.			
<b>Module -5</b>			
<b>Materials for Repair and Retrofitting:</b> Artificial fiber reinforced polymer like CFRP, GFRP, AFRP and natural fiber like Sisal and Jute. Adhesive like, Epoxy Resin, Special concretes and mortars, concrete chemicals, special elements for accelerated strength gain, Techniques for Repair: Rust eliminators and polymers coating for rebar during repair foamed concrete, mortar and dry pack, vacuum concrete, Guniting and Shot Crete Epoxy injection, Mortar repair for cracks, shoring and underpinning.			
<b>Course outcomes:</b> After studying this course, students will be able to:			
<ol style="list-style-type: none"> <li>1. Identify the causes for structural (Concrete) deterioration.</li> <li>2. Assess the type and extent of damage and carry out damage assessment of structures through various types of tests.</li> <li>3. Recommend maintenance requirements of the buildings and preventive measures against influencing factors.</li> <li>4. Select suitable material and suggest an appropriate method for repair and rehabilitation.</li> </ol>			
<b>Question paper pattern:</b>			
<ul style="list-style-type: none"> <li>• The question paper will have ten full questions carrying equal marks.</li> <li>• Each full question will be for 20 marks.</li> <li>• There will be two full questions (with a maximum of four sub- questions) from each module.</li> <li>• Each full question will have sub- question covering all the topics under a module.</li> <li>• The students will have to answer five full questions, selecting one full question from each module.</li> </ul>			
<b>Textbooks:</b>			
<ol style="list-style-type: none"> <li>1. Sidney, M. Johnson, “Deterioration, Maintenance and Repair of Structures”</li> <li>2. Denison Campbell, Allen &amp; Harold Roper, “Concrete Structures – Materials, Maintenance and Repair”- Longman Scientific and Technical.</li> </ol>			
<b>Reference Books:</b>			

1. R.T.Allen and S.C. Edwards, "Repair of Concrete Structures"-Blakie and Sons
2. Raiker R.N., "Learning for failure from Deficiencies in Design, Construction and Service"- R&D Center (SDCPL).
3. CPWD Manual



**B. E. CIVIL ENGINEERING**  
**Choice Based Credit System (CBCS) and Outcome Based Education (OBE)**  
**SEMESTER - VIII**

**PAVEMENT DESIGN**

Course Code	<b>18CV825</b>	CIE Marks	40
Teaching Hours/Week(L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03

**Course Learning Objectives:** This course will enable students to

1. Gain knowledge about the process of collecting data required for design, factors affecting pavement design, and maintenance of pavement.
2. Excel in the path of analysis of stress, strain and deflection in pavement.
3. Understand design concepts of flexible pavement by various methods (CBR, IRC 37-2001, Mcleods, Kansas ) and also the same of rigid pavement by IRC 58-2002
4. Understand the various causes leading to failure of pavement and remedies for the same.
5. Develop skills to perform functional and structural evaluation of pavement by suitable methods.

**Module -1**

**Introduction:** Desirable characteristics of pavement, Types and components, Difference between Highway pavement and Air field pavement, Design strategies of variables, Functions of sub grade, sub base, Base course, surface course, comparison between Rigid and flexible pavement  
**Fundamentals of Design of Pavements:** Stresses and deflections, Principle, Assumptions and Limitations of Boussinesq's theory, Burmister theory and problems on above.

**Module -2**

**Design Factors:** Design wheel load, contact pressure, Design life, Traffic factors, climatic factors, Road geometry, Subgrade strength and drainage, ESWL concept Determination of ESWL by equivalent deflection criteria, Stress criteria, EWL concept, and problems on above.  
**Flexible pavement Design:** Assumptions, Mcleod Method, Kansas method, CBR method, IRC Method (old), CSA method using IRC-37-2001, problems on above.

**Module -3**

**Flexible Pavement Failures, Maintenance and Evaluation:** Types of failures, Causes, Remedial/Maintenance measures in flexible pavements, Functional Evaluation by Visual inspection and unevenness measurements, Structural evaluation by Benkleman beam deflection method, Falling weight deflecto meter, GPR method. Design factors for runway pavements, Design methods for Airfield pavement and problems on above.

**Module -4**

**Stresses in Rigid Pavement :** Types of stress, Analysis of Stresses, Westergaard's Analysis, Modified Westergaard equations, Critical stresses, Wheel load stresses, Warping stress, Frictional stress, combined stresses (using chart / equations), problems on above.  
**Design of Rigid Pavement:** Design of CC pavement by IRC: 58-2002 for dual and Tandem axle load, Reinforcement in slabs, Design of Dowel bars, Design of Tie bars, Design factors for Runway pavements, Design methods for airfield pavements, problems of the above.

**Module -5**

**Rigid Pavement Failures, Maintenance and Evaluation:** Types of failures, causes, remedial/maintenance measures in rigid pavements, Functional evaluation by Visual inspection and unevenness measurements, wheel load and its repetition, properties of sub grade, properties of concrete. External conditions, joints, Reinforcement, Requirements of joints, Types of joints, Expansion joint, contraction joint, warping joint, construction joint, longitudinal joint, Design of joints.

**Course outcomes:** After studying this course, students will be able to:

1. Systematically generate and compile required data's for design of pavement (Highway & Airfield).
2. Analyze stress, strain and deflection by boussinesq's, bur mister's and westergaard's theory.
3. Design rigid pavement and flexible pavement conforming to IRC58-2002 and IRC37-2001.
4. Evaluate the performance of the pavement and also develops maintenance statement based on site specific requirements.

**Question paper pattern:**

- The question paper will have ten full questions carrying equal marks.
- Each full question will be for 20 marks.

- There will be two full questions (with a maximum of four sub- questions) from each module.
- Each full question will have sub- question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module.

**Textbooks:**

1. S K Khanna, C E G Justo, and A Veeraragavan, “Highway Engineering”, Nem Chand & Brothers
2. L.R.Kadiyali and Dr.N.B.Lal, “ Principles and Practices of Highway Engineering”, Khanna publishers
3. Yang H. Huang , “Pavement Analysis and Design”, University of Kentucky.

**Reference Books:**

1. Yoder & wit zorac, “Principles of pavement design”, John Wiley & Sons.
2. SubhaRao, “Principles of Pavement Design”.
3. R Srinivasa Kumar, “Pavement Design”, University Press.
4. Relevant recent IRC codes

**B. E. CIVIL ENGINEERING**  
**Choice Based Credit System (CBCS) and Outcome Based Education (OBE)**  
**SEMESTER - VIII**

**PROJECT WORK PHASE-2**

Course Code	<b>18CVP83</b>	CIE Marks	40
Teaching Hours/Week(L:T:P)	-	SEE Marks	60
Credits	08	Exam Hours	03

**Course objectives:**

- To support independent learning.
- To develop interactive, communication, organization, time management, and presentation skills.
- To impart flexibility and adaptability.
- To inspire independent and team working.
- To expand intellectual capacity, credibility, judgment, intuition.
- To adhere to punctuality, setting and meeting deadlines.
- To instill responsibilities to oneself and others.
- To train students to present the topic of project work in a seminar without any fear, face audience confidently, enhance communication skill, involve in group discussion to present and exchange ideas.

**Project Work Phase - II:** Each student of the project batch shall involve in carrying out the project work jointly in constant consultation with internal guide, co-guide, and external guide and prepare the project report as per the norms avoiding plagiarism.

**Course outcomes:** At the end of the course the student will be able to:

- Describe the project and be able to defend it.
- Develop critical thinking and problem solving skills.
- Learn to use modern tools and techniques.
- Communicate effectively and to present ideas clearly and coherently both in written and oral forms.
- Develop skills to work in a team to achieve common goal.
- Develop skills of project management and finance.
- Develop skills of self learning, evaluate their learning and take appropriate actions to improve it.
- Prepare them for life-long learning to face the challenges and support the technological changes to meet the societal needs.

**Evaluation Procedure:**

- **As per University guidelines**
- **Internal Marks:** The Internal marks (100 marks) evaluation shall be based on Phase wise completion of the project work, Project report, Presentation and Demonstration of the actual/model/prototype of the project.
- **Semester End Examination:** SEE marks for the project (100 marks) shall be based on Project report, Presentation and Demonstration of the actual/model/prototype of the project, as per the University norms by the examiners appointed VTU.

**B. E. CIVIL ENGINEERING**  
**Choice Based Credit System (CBCS) and Outcome Based Education (OBE)**  
**SEMESTER - VIII**

**TECHNICAL SEMINAR**

Course Code	<b>18CVS84</b>	CIE Marks	100
Teaching Hours/Week(L:T:P)	--	SEE Marks	--
Credits	01	Exam Hours	03

**Course Learning Objectives:**

The objective of the seminar is to inculcate self-learning, face audience confidently, enhance communication skill, involve in group discussion and present and exchange ideas. Each student, under the guidance of a Faculty, is required to choose, preferably, a recent topic of his/her interest relevant to the course of specialization. Carryout literature survey; organize the Course topics in a systematic order.

- Conduct literature survey in the domain area to find appropriate topic.
- Prepare the synopsis report with own sentences in a standard format.
- Learn to use MS word, MS power point, MS equation and Drawing tools or any such facilities in the preparation of report and presentation.
- Present the seminar topic orally and/or through power point slides.
- Communicate effectively to answer the queries and involve in debate/discussion.
- The participants shall take part in discussion to foster friendly and stimulating environment in which the students are motivated to reach high standards and become self-confident.

**Course Outcomes:** At the end of the course the student will be able to:

- Develop knowledge in the field of Civil Engineering and other disciplines through independent learning and collaborative study.
- Identify and discuss the current, real-time issues and challenges in engineering & technology.
- Develop written and oral communication skills.
- Explore concepts in larger diverse social and academic contexts.
- Apply principles of ethics and respect in interaction with others.
- Develop the skills to enable life-long learning.

**Evaluation Procedure:**

- As per University guidelines.
- The Internal Assessment marks for the seminar shall be awarded based on the relevance of the seminar topic, quality of the report, presentation skills, participation in the question and answer, and attendance in the seminar classes/sessions.

**B. E. CIVIL ENGINEERING**  
**Choice Based Credit System (CBCS) and Outcome Based Education (OBE)**  
**SEMESTER - VIII**

**INTERNSHIP /PROFESSIONAL PRACTICE**

Course Code	<b>18CVI85</b>	CIE Marks	40
Teaching Hours/Week(L:T:P)	Industry Oriented	SEE Marks	60
Credits	03	Exam Hours	03

**Course Learning Objectives:** This course will enable students to get the field exposure and experience

**Note: Internship /Professional Practice:**

1. This shall be carried out by students in industry set-up related to the construction/ materials testing laboratories/research organizations/project management consulting firms/QS and QA organizations/ planning and design offices/Professional organizations like ACCE/ICI/INSTRUCT/RMCMA/QCI, PMI, CIDC etc. and other avenues related to the civil engineering domain in consultation and approval of internship guide/HOD /internship committees of the institutions.
2. The professional certification programs like ACCE(I)- SMP, ICI-BMTPC certifications, NSTRUCT-certifications, CIDC certifications, RMC-QCI's RMCPCS Certification Programs, RMCMA-NRMCA'S Concrete Technologist India(CTI) programs and such similar programs by professional bodies with adequate industry exposures at sites/RMC plants can be considered as Internship /Professional Practice with due approvals from the guide/HOD /internship committees of the institutions
3. The industry/organization should issue certificates of internship offer and its completion. The offer letter should clearly have the nature of work to be done by the student and the supervisor's name and duration of internship.
4. The student shall make a midterm and final presentation of the activities undertaken during the first 6 weeks and at the end of 12th week of internship respectively, to a panel comprising internship guide, a senior faculty from the department and head of the department. Each student should submit the internship report at the end of semester with internship certificate.
5. Viva-Voce examination shall be conducted by a panel of examiners consisting of internship supervisor from industry or industry professional approved by university and internship guide from the institute.
6. The College shall facilitate and monitor the student internship program.
7. The internship should be completed during vacation after VI and VII semesters.