

DCE 601: EARTHQUAKE ENGINEERING

Credits: 04

Semester VI

Module No.	Content	Teaching Hours
I	Introduction to Seismic Design Parameters Introduction to Earthquakes, Causes of earthquakes, Epicenter, Hypocenter, Earthquake waves: Primary waves, secondary waves, long waves Seismic Region: Seismic zones in India, Intensity and isoseismic of an earthquake, Magnitude and energy of earthquake. Performance of buildings under past earthquakes.	12
II	Introduction to provisions of IS: 1893:2002. Introduction to ductile detailing provisions of IS:13920 for Reinforced Concrete Buildings. Introduction to IS:4326 for construction of earthquake resistant masonry building.	14
III	Special construction methodologies, tips and precautions to be observed while planning, designing and construction of earthquake resistant buildings. Disaster Management: Disaster rescue, psychology of rescue, rescue workers, rescue plan, rescue by steps, rescue equipment, safety in rescue operations, debris clearance and casualty machining, Electric Discharge machining.	10

Text Books:

1. Agarwal, P. and Shrikhande, M. (2007), Earthquake Resistant of Design of Structures, PHI Publications.

Reference Books:

1. Biggs, J.M. (2004), Introduction to Structural Dynamics, McGraw Hill Publications, New York, USA.
2. IS: 1983. (1984), Criterion for Earthquake Resistant Design, Bureau of Indian Standards, New Delhi.
3. Paz, M. (1997), Structural Dynamics - Theory and Computation, Springer, New York, USA.
4. Chopra, A.K. (2004), Dynamics of Structures, Pearson Education, New Delhi.
5. Duggal, S.K. (2008), Earthquake Resistant of Design of Structures, Oxford University Press, New Delhi.

DCE-602:- MAINTENANCE AND REPAIRS OF STRUCTURES

Credit:-4

UNIT I : MAINTENANCE AND REPAIR STRATEGIES

Maintenance, Repair and Rehabilitation, Facets of Maintenance, importance of Maintenance, Various aspects of Inspection, Assessment procedure for evaluating a damaged structure, causes of deterioration.

UNIT II : STRENGTH AND DURABILITY OF CONCRETE

Quality assurance for concrete – Strength, Durability and Thermal properties, of concrete – Cracks, different types, causes – Effects due to climate, temperature, Sustained elevated temperature, Corrosion – Effects of cover thickness.

UNIT III : SPECIAL CONCRETES

Polymer concrete, Sulphur infiltrated concrete, Fibre reinforced concrete, High strength concrete, High performance concrete, Vacuum concrete, Self-compacting concrete, Geopolymer concrete, Reactive powder concrete, Concrete made with industrial wastes.

DCE-603:- ESTIMATION AND COSTING

CREDIT:- 4

UNIT-I

- Quality estimation: General Classes of Power Quality Problems, Transients, Long Duration Voltage Variations, Short-Duration Voltage Variations, Voltage Imbalance, Waveform Distortion, Voltage Fluctuations, Power Frequency Variations, Power Quality Terms.

UNIT-II

- Principles of general and detailed specification for various types building works.
- Analysis of rates, description, Prime cost, Schedule rates, Analysis of rates for various types of works.

UNIT-III

- Network techniques, Introduction to CPM/ PERT methods and their use in project planning construction schedules for jobs, materials equipment's, labour and finance.

Reference Books:

- Estimating and Costing in Civil Engineering Theory & Practice, B.N. Dutta, UBS Publishers

PERT and CPM, L.S. Sreenath, East West Press Civil engineering contracts and estimates by B.S. Patil, University Press.

DCE 604 : CONSTRUCTION AND MANAGEMENT & ACCOUNTS

Credits: 04

Semester VI

Module No.	Content	Teaching Hours
I	<p>CONSTRUCTION MANAGEMENT: Introduction: Significance of construction management, Main objectives of construction management, Functions of construction management, planning, organizing, staffing, directing, controlling and coordinating, meaning of each of these with respect to construction job. Classification of construction into light, heavy and industrial construction, Stages in construction from conception to completion,</p> <p>Construction Planning: Importance of construction planning, Developing work break down structure for construction works, Stages of construction planning, Scheduling construction works by bar charts: Preparation of bar charts for simple construction work, Preparation of schedules for labour, materials, machinery and finances for small works, Limitations of bar charts</p> <p>Scheduling by network techniques: Introduction to network techniques; PERT and CPM, differences between PERT and CPM terminology, Developing CPM networks, Analysis of CPM networks, determining completion time, identifying critical activities and critical path, floats etc.</p>	18
II	<p>Organization: Types of organizations: Line, line and staff, functional and their Characteristics, Principles of organization: Span of control, Delegation of authority, Ultimate responsibility, Unity of command, Job definition</p> <p>Site Organization: Factors influencing selection and design of temporary services for a construction, Principle of storing and stacking materials at site, Location of equipment, Preparation of actual job layout for a building, Organizing labour at site</p>	
III	<p>CONSTRUCTION EQUIPMENT: Construction Economy: Factors affecting the selection of construction equipment, resistance, effect of grade on required tractive effort, effect of altitude and temperature on the performance of internal combustion engines,</p> <p>ACCOUNTS: PUBLIC WORK ACCOUNTS: Introduction, accounts, work- major, repair, administrative approval – expenditure, Technical sanction, allotment of funds, bill, contractor ledger, Running and final account bills complete, completion certificate & report, hand receipt, establishment-permanent, temporary-aquittance roll. WC, Establishment, MR labour, casual labour roll-duties and responsibility of different cadres, budget-stores, returns, direct material, road metal return, account of stock, misc. P.W. advances T & P – verification, survey , returns, account- expenditure & revenue head, remittance and deposit head</p>	rolling 16

Text Book:

1. PERT & CPM Principles and Applications" L.S. Srinath, E.W.P. Ltd., New Delhi.

Reference Books:

1. Network Analysis Techniques" S.K. Bhatnagar, Willey Eastern Ltd.
2. Construction Technology by Sarkar , Oxford.
3. Construction Planning", Equipment and Methods. : R.L. Peurify. T.M.H.,

DME 606 : ENTREPRENEURSHIP DEVELOPMENT & MANAGEMENT

Credits: 4

Semester VI

L-T-P: 4-0-0

Module No.	Contents	Teaching Hours
Unit – I	Concept and meaning of entrepreneurship. Need of entrepreneurship in context of prevailing employment conditions of the country. Successful entrepreneurship and training for its development. entrepreneurship as a desirable and feasible career option- entrepreneur competencies and attributes- characteristics of a successful entrepreneur. Process of entrepreneurship development	16
Unit – II	Nature, Purpose and pattern of Human Activities: Economic and Non-Economic- Entrepreneurial Pursuits and Human Activities- Need for Creativity and innovation in societies -Building enterprising Personality and Society - Entrepreneurship as a Human Resource Development concept	16
Unit - III	Role of Entrepreneur in Indian economy with reference to self-employment development Employment pattern of the educated in India- Entrepreneurial Culture- Importance of nursing Entrepreneurial culture in developing economies Entrepreneurial Values- Entrepreneurial Discipline and Social responsibilities, Entrepreneurship Support system as like District Industry Centers (DICs), Commercial Banks, state financial corporations,	16

Reference Books:

1. A Hand book of Entrepreneurship, Edited by BS Rathore and JS Saini, Aapga publications, Panchkula Haryana.
2. Entrepreneurship Development By CB Gupta and P Shrinivasan, Sultan chand and sons, New Delhi.
3. Dynamics of Entrepreneurship development and management (ivth) edition by Shri Vsant Desai.
4. Entrepreneurship development by Shri S.S. Khanka.
5. Entrepreneurship by NITTT& R Chennai



DCE 651: PROBLEM SOLVING USING COMPUTERS LAB.

Credits: 02

Semester VI

Module No.	Content	Teaching Hours
I	<p>Pointers: Declaration and Initialization of Pointer Variables, Accessing a Variable Through its Pointer, Pointer Arithmetic, Array of Pointers, Pointer to an Array.</p> <p>Functions: Declaration and Definition, Category of Functions, Parameter Passing Techniques – Call by Value and Call By Reference, Passing Arrays to Functions.</p> <p>Introduction To Storage Classes: Auto, Static, Extern and Register.</p>	8
II	<p>Recursion: Mechanics of Recursive Call, Implementation of Recursion, Recursion vs. Iteration.</p> <p>User Defined Types: Enum, Typedef, Union and Structure - Declaration, Initialization, Nested Structures, Arrays of Structures, Structure and Pointer, Passing Structure Through Function. Difference Between Structures and Union.</p>	8
III	<p>The C Preprocessor: Introduction, Macro Expansion and File Inclusion.</p> <p>File Handling: Data And Information, File Concepts, File Organization, Files In C, File Operations: Open, Read, and Close, Trouble in Opening a File. File Opening Modes, Working with Text Files.</p> <p>Introduction to Data Structures Stack, Queue and Linked List and its Basic Operation.</p>	8

Text Book:

1. Behrouz A. Forouzan and Richard F. Gilberg, "Computer Science – A Structured Programming Approach Using C", C Language Learning (2007).

Reference Books:

1. K. N. King, "C Programming a Modern Approach", W. W. Norton, 2nd Edition (2008).
2. Kernighan and Ritchie, "The C programming Language", PHI, 2nd edition (2011).

3. P. Dey and M. Ghosh, "Programming in C", Oxford University Press 1st Edition (2000).

Outcome:

At the End of the Course, Students Will be Able to Understand How to:

1. Write Programs that Perform Explicit Memory Management.
2. Create Programs that Measure or Simulate Performance and Use Them to Analyze Behavior. Write The Programs for Compiler and Operating Systems.