

VELTECH MULTI TECH

Dr RANGARAJAN Dr. SAKUNTHALA ENGINEERING COLLEGE

(Owned by Vel Trust 1997)

(An ISO 9001: 2008 Certified Institution)

Accredited By NAAC with 'A' Grade and NBA Accredited
Institution

(Approved by AICTE New Delhi and Govt. of Tamil Nadu, Affiliated to
Anna University Chennai)



SYLLABUS

WEEKLY SCHEDULE

V SEMESTER 2017-18

DEPARTMENT OF CIVIL ENGINEERING

IVYEAR DEGREE COURSE

#42, Avadi – Vel Tech Road,

Avadi

Chennai – 600062

Telefax – 044-26841061

E-mail: emailto@veltechmultitech.org

Website : www.veltechmultitech.org

INSTITUTION VISION

Elevating well being of humanity by augmenting human resource potential through quality technical education and training

INSTITUTION MISSION

- a. To effectuate supremacy in technical education through articulation of research and industry practices for social relevance.
- b. To inculcate the habit of lifelong learning
- c. To exhibit professional ethics, commitment and leadership qualities

DEPARTMENT VISION

Building human resource talent by infusing the habit of creativity and productivity with holistic ethical standards.

DEPARTMENT MISSION

1. To accomplish technically competent and credible civil engineers for changing societal needs.
2. To propagate lifelong learning.
3. To impart the right proportion of knowledge, attitudes and ethics in students to enable them take up positions of responsibility in the society and make significant contributions.

Program Educational Objectives (PEOs)

The program educational objectives for the Civil Engineering program describe accomplishments that graduates are expected to attain within four years after graduation.

1. Ability to identify, formulate and analyze complex Civil Engineering problems in the areas of structural engineering, geotechnical engineering, water resource management and applications to reach significant conclusions by applying Mathematics, Natural sciences, Civil Engineering principles.
2. Understand and evaluate the sustainability and impact of professional engineering work in the solution of complex engineering problems related to structural design, software development, analyzing techniques, and information assurance & security in societal and environmental contexts.
3. Apply knowledge of mathematics, natural science, engineering fundamentals and structural design, software development, analyzing techniques, and information assurance & security to the solution of complex engineering problems in civil engineering.
4. Design solutions for complex civil engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
5. Ability to create, select and apply state of the art tools and techniques in designing, developing and testing a structural component

Programme Outcomes

1. An ability to relate the theoretical knowledge of mathematics, science and engineering to practical real world applications.
2. An ability to identify, formulate and derive solutions for engineering problems.
3. An ability to produce the efficient system design and components, design for various civil engineering applications for technology innovation.
4. An ability to conduct and investigate different experiments for analysis, research and synthesis purpose
5. Familiar with modern Engineering tools, Software's and Equipments.
6. An ability to understand the professional responsibility in the techno savvy world.
7. An ability to understand the impact of professional engineering solution in societal and environmental contexts and demonstrate the knowledge and need for sustainable development globally.
8. An understanding of code of conduct and ethical responsibilities.
9. An ability to work on multi-disciplinary task and team work.
10. An ability to write and communicate effectively in verbal, written and graphical form.
11. An ability to develop confidence for self education and for life-long learning.
12. An understanding of Engineering Economics and management principles to manage projects and create innovative ideas

WEEK DETAILS

SL.NO.	WEEK	FROM	TO
1	WEEK1	24-06-17	24-06-17
2	WEEK2	27-06-17	1-07-17
3	WEEK3	3-07-17	8-07-17
4	WEEK4	9-07-17	15-07-17
5	WEEK5	17-07-17	22-07-17
6	WEEK6	24-07-17	29-07-17
7	WEEK7	31-07-17	5-08-17
8	WEEK8	7-08-17	12-08-17
9	WEEK9	14-08-17	19-08-17
10	WEEK10	21-08-17	26-08-17
11	WEEK11	28-08-17	2-09-17
12	WEEK12	4-09-17	9-09-17
13	WEEK13	11-09-17	16-09-17
14	WEEK14	18-09-17	23-09-17
15	WEEK15	25-09-17	30-09-17
16	WEEK16	2-10-17	7-10-17
17	WEEK17	9-10-17	13-10-17

SUBJECT CONTENTS

SL.NO	SUBJECT CODE	SUBJECT NAME
THEORY		
1	CE6501	Structural Analysis I
2	CE6502	Foundation Engineering
3	CE6503	Environmental Engineering I
4	CE6504	Highway Engineering
5	CE6505	Design of Reinforced Concrete Elements
6	CE6506	Construction Techniques, Equipment and Practice
PRACTICAL		
7	GE6563	Communication Skills - Laboratory Based
8	CE6511	Soil Mechanics Laboratory
9	CE6512	Survey Camp

TEST / EXAM SCHEDULE

SL.NO	SUBJECT CODE	SUBJECT NAME	UNIT TEST I	UNIT TEST II	PRE MODEL EXAM	UNIT TEST IV	MODEL EXAM
1	CE6501	Structural Analysis I	10.07.17	27.07.17	16.08.17	07.09.17	28.09.17
2	CE6502	Foundation Engineering	10.07.17	27.07.17	17.08.17	07.09.17	03.10.17
3	CE6503	Environmental Engineering I	11.07.17	28.07.17	18.08.17	08.09.17	06.10.17
4	CE6504	Highway Engineering	11.07.17	28.07.17	19.08.17	08.09.17	09.10.17
5	CE6505	Design of Reinforced Concrete Elements	12.07.17	29.07.17	21.08.17	09.09.17	11.10.17
6	CE6506	Construction Techniques, Equipment and Practice	12.07.17	29.07.17	22.08.17	09.09.17	13.10.17

CE6501 STRUCTURAL ANALYSIS I

WEEK 1

UNIT I INDETERMINATE FRAMES

Degree of static and kinematic indeterminacies for plane frames - analysis of indeterminate pin-jointed frames

WEEK 2

rigid frames (Degree of statical indeterminacy up to two)

WEEK 3

Energy and consistent deformation methods.

UNIT TEST I

UNIT II INFLUENCE LINES

Influence lines for reactions in statically determinate structures – influence lines for member forces in pin-jointed frames – Influence lines for shear force and bending moment in beam sections – Calculation of critical stress resultants due to concentrated and distributed moving loads.

WEEK 4

Muller Breslau's principle – Influence lines for continuous beams and single storey rigid frames – Indirect model analysis for influence lines of indeterminate structures – Beggs deformeter

WEEK 5

UNIT III ARCHES

Arches as structural forms – Examples of arch structures

WEEK 6 UNIT TEST II

WEEK 7

Types of arches – Analysis of three hinged

WEEK 8

two hinged and fixed arches, parabolic and circular arches.

WEEK 9

Settlement and temperature effects.

WEEK 10 UNIT TEST III

UNIT IV SLOPE DEFLECTION METHOD

Continuous beams and rigid frames (with and without sway)

WEEK 11

Symmetry and antisymmetry

WEEK 12

Simplification for hinged end – Support displacements

WEEK 13

UNIT TEST IV

WEEK 14

UNIT V MOMENT DISTRIBUTION METHOD

Distribution and carryover of moments – Stiffness and carry over factors – Analysis of continuous beams

WEEK 15

Plane rigid frames with and without sway – Neylor’s simplification

WEEK-16 and 17-MODEL EXAM

TEXT BOOKS

1. Vaidyanadhan, R and Perumal, P, “Comprehensive Structural Analysis – Vol. 1 & Vol. 2”, Laxmi Publications Pvt. Ltd, New Delhi, 2003.
2. L.S. Negi& R.S. Jangid, “Structural Analysis”, Tata McGraw Hill Publications, New Delhi, 6th Edition, 2003.
3. Punmia.B.C, Ashok Kumar Jain and Arun Kumar Jain, "Theory of structures", Laxmi Publications Pvt. Ltd., New Delhi, 2004
4. Reddy. C.S., "Basic Structural Analysis", Tata McGraw Hill Education Pvt. Ltd., New Delhi, 2013.
5. BhavaiKatti, S.S, "Structural Analysis – Vol. 1 & Vol. 2", Vikas Publishing Pvt Ltd., New Delhi, 2008

REFERENCES:

1. Wang C.K. , “Indeterminate Structural Analysis”, Tata McGraw Hill Education Pvt. Ltd., New Delhi, 2010
2. DevadasMenon, “Structural Analysis”, Narosa Publishing House, 2008
3. Ghali.A.,Nebille and Brown. T.G., "Structural Analysis - A unified classical and matrix approach" Sixth Edition, SPON press, New York, 2013.
4. Gambhir. M.L., "Fundamentals of Structural Mechanics and Analysis" ., PHI Learning Pvt. Ltd., New Delhi, 2011.

CE6502 FOUNDATION ENGINEERING

UNIT I SITE INVESTIGATION AND SELECTION OF FOUNDATION

WEEK 1: Scope and objectives – Methods of exploration – auguring and boring – Wash boring and rotary drilling – Depth of boring – Spacing of bore hole

WEEK 2: Sampling techniques – Representative and undisturbed sampling – methods - Split spoon sampler, Thin wall sampler, Stationery piston sampler – Penetration tests (SPT and SCPT) - Bore log report

WEEK 3:Data interpretation - strength parameters and Liquefaction potential - Selection of foundation based on soil condition

UNIT II SHALLOW FOUNDATION

WEEK 4: UNIT TEST I

Introduction – Location and depth of foundation – Codal provisions – bearing capacity of shallow foundation on homogeneous deposits – Terzaghi's formula and BIS formula – factors affecting bearing capacity – problems – Bearing capacity from in-situ tests (SPT, SCPT and plate load) Allowable bearing pressure

WEEK 5:Seismic considerations in bearing capacity evaluation. Determination of Settlement of foundations on granular and clay deposits – Total and differential settlement – Allowable settlements – Codal provision – Methods of minimizing total and differential settlements

WEEK 6: UNIT TEST II

UNIT III FOOTINGS AND RAFTS

WEEK 7: Types of footings – Contact pressure distribution: Isolated footing – Combined footings – Types and proportioning – Mat foundation

WEEK 8: Types and applications – Proportioning – Floating foundation – Seismic force consideration – Codal Provision

UNIT IV PILE FOUNDATION

WEEK 9: UNIT TEST III

Types of piles and their function – Factors influencing the selection of pile – Carrying capacity of single pile in granular and cohesive soil – static formula – dynamic formulae (Engineering news and Hileys) – Capacity from insitu tests (SPT and SCPT) – Negative skin friction –

uplift capacity- Group capacity by different methods (Feld's rule, Converse

WEEK 10: Labarra formula and block failure criterion) – Settlement of pile groups – Interpretation of pile load test (routine test only) – Under reamed piles – Capacity under compression and uplift

WEEK 11: UNIT TEST IV

UNIT V RETAINING WALLS

WEEK 12: Plastic equilibrium in soils – active and passive states – Rankine's theory – cohesionless and cohesive soil – Coulomb's wedge theory – Condition for critical failure plane – Earth pressure on retaining walls of simple configurations

WEEK 13,14 and 15: Culmann Graphical method – pressure on the wall due to line load – Stability analysis of retaining walls.

WEEK 16 and 17: MODEL EXAM

TEXT BOOKS:

1. Murthy, V.N.S., "Soil Mechanics and Foundation Engineering", CBS Publishers and Distributors Ltd., New Delhi, 2007.
2. GopalRanjan and Rao A.S.R. "Basic and Applied soil mechanics", New Age International Pvt. Ltd, New Delhi, 2005.
3. Purushothama Raj. P., "Soil Mechanics and Foundation Engineering", 2nd Edition, Pearson Education, 2013
4. Varghese, P.C., "Foundation Engineering", Prentice Hall of India Private Limited, New Delhi, 2005.

REFERENCES:

1. Das, B.M. "Principles of Foundation Engineering" 5th edition, Thompson Asia Pvt. Ltd., Singapore, 2003.
2. Kaniraj, S.R. "Design aids in Soil Mechanics and Foundation Engineering", Tata McGraw Hill Publishing company Ltd., New Delhi, 2002.
3. Punmia, B.C. "Soil Mechanics and Foundations", Laxmi Publications Pvt.Ltd., New Delhi, 2005
4. Venkatramaiah, C. "Geotechnical Engineering", New Age International Publishers, New Delhi, 2007 (Reprint)
5. Arora K.R. "Soil Mechanics and Foundation Engineering", Standard Publishers and Distributors, New Delhi, 2005.
6. IS 6403 : 1981 (Reaffirmed 1997) "Breaking capacity of shallow foundation", Bureau of Indian Standards, New Delhi, 1998

7. IS8009 (Part1):1976 (Reaffirmed 1998) “Shallow foundations subjected to symmetrical static vertical loads”, Bureau of Indian Standards, New Delhi, 1999
8. IS8009 (Part2):1980 (Reaffirmed 1995) “Deep foundations subjected to symmetrical static vertical loading”, Bureau of Indian Standards, New Delhi, 1992
9. IS2911(Part1):1979 (Reaffirmed 1997) “Concrete Piles” Bureau of Indian Standards, New Delhi, 1994
10. IS2911(Part2):1979 (Reaffirmed 1997) “Timber Piles”,Bureau of Indian Standards, New Delhi, 2007
11. IS2911(Part 3) :1979 (Reaffirmed 1997) “Under Reamed Piles”,Bureau of Indian Standards, New Delhi, 1998
12. IS2911 (Part 4) :1979 (Reaffirmed 1997) “Load Test on Piles”, Bureau of Indian Standards, New Delhi, 1997

CE6503 ENVIRONMENTAL ENGINEERING I

UNIT I PLANNING FOR WATER SUPPLY SYSTEM

WEEK 1:Public water supply system -Planning - Objectives - Design period - Population forecasting -Water demand -Sources of water and their characteristics

WEEK 2 Surface and Groundwater- Impounding Reservoir Well hydraulics -Development and selection of source

WEEK 3: Water quality - Characterization and standards-Impact of climate change.

UNIT II CONVEYANCE SYSTEM

WEEK 4: UNIT TEST I

Water supply -intake structures -Functions and drawings -Pipes and conduits for water- Pipe materials - Hydraulics of flow in pipes -Transmission main design

WEEK 5: Laying, jointing and testing of pipes - Drawings appurtenances - Types and capacity of pumps -Selection of pumps and pipe materials.

WEEK 6: UNIT TEST II

UNIT III WATER TREATMENT

WEEK 7: Objectives - Unit operations and processes - Principles, functions design and drawing of Chemical feeding, Flash mixers, flocculators, sedimentation tanks and sand filters

WEEK 8: Disinfection- Residue Management - Construction and Operation & Maintenance aspects of Water Treatment Plants.

UNIT IV ADVANCED WATER TREATMENT

WEEK 9: UNIT TEST III

Principles and functions of Aeration - Iron and manganese removal,

WEEK 10: Defluoridation and demineralization -Water softening - Desalination - Membrane Systems - Recent advances.

WEEK 11:UNIT TEST IV

UNIT V WATER DISTRIBUTION AND SUPPLY TO BUILDINGS

WEEK 12: Requirements of water distribution -Components - Service reservoirs -Functions and drawings -Network design - Economics -Computer applications -Analysis of distribution networks -Appurtenances -operation and maintenance -Leak detection, Methods

WEEK 13 and 14: Principles of design of water supply in buildings -House service connection -Fixtures and fittings - Systems of plumbing and drawings of types of plumbing.

WEEK 15: ICD CLASSES

WEEK 16 and 17: MODEL EXAM

TEXT BOOKS:

1. Garg, S.K., "Environmental Engineering", Vol.1 Khanna Publishers, New Delhi, 2005.
2. Modi, P.N. "Water Supply Engineering", Vol. I Standard Book House, New Delhi, 2005.

3. Punmia, B.C., Ashok K Jain and Arun K Jain, "Water Supply Engineering", Laxmi Publications Pvt. Ltd., New Delhi, 2005

REFERENCES:

1. Government of India, "Manual on Water Supply and Treatment", CPHEEO, Ministry of Urban Development, New Delhi, 2003
2. Syed R. Qasim and Edward M. Motley Guang Zhu, "Water Works Engineering Planning", Design and Operation, Prentice Hall of India Private Limited, New Delhi, 2006.

CE6504 HIGHWAY ENGINEERING

UNIT I HIGHWAY PLANNING AND ALIGNMENT

WEEK 1: Significance of highway planning – Modal limitations towards sustainability - History of road development in India – Classification of highways

WEEK 2: Locations and functions – Factors influencing highway alignment – Soil suitability analysis - Road ecology

WEEK 3: Engineering surveys for alignment, objectives, conventional and modern methods.

UNIT II GEOMETRIC DESIGN OF HIGHWAYS

WEEK 4: UNIT TEST I

Typical cross sections of Urban and Rural roads — Cross sectional elements - Sight distances – Horizontal curves, Super elevation, transition curves, widening at curves

WEEK 5: Vertical curves - Gradients, Special consideration for hill roads - Hairpin bends – Lateral and vertical clearance at underpasses.

WEEK 6: UNIT TEST II

UNIT III DESIGN OF FLEXIBLE AND RIGID PAVEMENTS

WEEK 7: Design principles – pavement components and their role

WEEK 8 Design practice for flexible and rigid Pavements (IRC methods only) - Embankments

UNIT IV HIGHWAY CONSTRUCTION MATERIALS AND PRACTICE

WEEK 9: UNIT TEST III

Highway construction materials, properties, testing methods – CBR Test for subgrade - tests on aggregate & bitumen – Construction practice including modern materials and methods, Bituminous and Concrete road construction, Polymer modified bitumen

WEEK 10: Recycling, Different materials – Glass, Fiber, Plastic, Geo-Textiles, Geo-Membrane (problem not included) - Quality control measures - Highway drainage — Construction machineries. **WEEK 11: UNIT TEST IV.**

UNIT V EVALUATION AND MAINTENANCE OF PAVEMENTS

WEEK 12: Pavement distress in flexible and rigid pavements – Pavement Management Systems - Pavement evaluation, roughness, present serviceability index, skid resistance

WEEK 13 and 14: structural evaluation, evaluation by deflection measurements – Strengthening of pavements –Types of maintenance – Highway Project formulation.

WEEK 15: ICD CLASSES

WEEK 16 and 17: MODEL EXAM

TEXT BOOK:

1. Khanna.S. K., Justo.C.E.G and Veeraragavan A. "Highway Engineering", Nemchand Publishers, 2014.
2. Subramanian K.P., "Highways, Railways, Airport and Harbour Engineering", Scitech Publications (India), Chennai, 2010
3. Indian Road Congress (IRC), Guidelines and Special Publications of Planning and Design.

REFERENCES:

1. Kadiyali.L.R. "Principles and Practice of Highway Engineering", Khanna Technical Publications, 8th edition Delhi, 2013.
2. Yang H. Huang, "Pavement Analysis and Design", Pearson Education Inc, Ninth Impression, South Asia, 2012
3. Ian D. Walsh, "ICE manual of highway design and management", ICE Publishers, Ist Edition, USA, 2011

4. Fred L. Mannering, Scott S. Washburn and Walter P. Kilaeski, "Principles of Highway Engineering and Traffic Analysis", Wiley India Pvt. Ltd., New Delhi, 2011
5. Garber and Hoel, "Principles of Traffic and Highway Engineering", CENGAGE Learning, New Delhi, 2010
6. O'Flaherty, C.A "Highways, Butterworth – Heinemann, Oxford, 2006

CE6505 DESIGN OF REINFORCED CONCRETE ELEMENTS

UNIT I METHODS OF DESIGN OF CONCRETE STRUCTURES

WEEK 1 Concept of Elastic method, ultimate load method and limit state method

WEEK 2: Advantages of Limit State Method over other methods – Design codes and specification

WEEK 3 Limit State philosophy as detailed in IS code – Design of beams and slabs by working stress method.

UNIT II LIMIT STATE DESIGN FOR FLEXURE

WEEK 4: UNIT TEST I

Analysis and design of singly and doubly reinforced rectangular and flanged beams - Analysis and design of one way

WEEK 5: two way and continuous slabs subjected to uniformly distributed load for various boundary conditions.

WEEK 6: UNIT TEST II

UNIT III LIMIT STATE DESIGN FOR BOND, ANCHORAGE

SHEAR & TORSION WEEK 7: Behaviour of RC members in bond and Anchorage - Design requirements as per current code

WEEK 8: Behaviour of RC beams in shear and torsion - Design of RC members for combined bending shear and torsion.

UNIT IV LIMIT STATE DESIGN OF COLUMNS

WEEK 9: UNIT TEST III

Types of columns – Braced and unbraced columns

WEEK 10: Design of short Rectangular and circular columns for axial, uniaxial and biaxial bending

WEEK 12: UNIT TEST IV

UNIT V LIMIT STATE DESIGN OF FOOTING

Design of wall footing – Design of axially and eccentrically loaded rectangular pad

WEEK 13 and 14: sloped footings – Design of combined rectangular footing for two columns only.

WEEK 15: ICD CLASSES

WEEK 16 and 17: MODEL EXAM

TEXT BOOKS:

1. Varghese, P.C., “Limit State Design of Reinforced Concrete”, Prentice Hall of India, Pvt. Ltd., New Delhi, 2002.
2. Gambhir.M.L., "Fundamentals of Reinforced Concrete Design", Prentice Hall of India Private Limited, New Delhi, 2006.
3. Subramanian,N.,”Design of Reinforced Concrete Structures”,Oxford University Press, New Delhi, 2013.

REFERENCES:

1. Jain, A.K., “Limit State Design of RC Structures”, Nemchand Publications, Roorkee, 1998
2. Sinha, S.N., “Reinforced Concrete Design”, Tata McGraw Hill Publishing Company Ltd., New Delhi, 2002
3. UnnikrishnaPillai, S., DevdasMenon, “Reinforced Concrete Design”, Tata McGraw Hill Publishing Company Ltd., 2009
4. Punmia.B.C., Ashok Kumar Jain, Arun Kumar Jain, “Limit State Design of Reinforced Concrete”,Laxmi Publication Pvt. Ltd., New Delhi, 2007.
5. Bandyopadhyay. J.N., "Design of Concrete Structures"., Prentice Hall of India Pvt. Ltd., New Delhi, 2008.
6. IS456:2000, Code of practice for Plain and Reinforced Concrete, Bureau of Indian Standards, New Delhi, 2000
7. SP16, IS456:1978 “Design Aids for Reinforced Concrete to Bureau of Indian Standards, New Delhi, 1999
8. Shah V L Karve S R., "Limit State Theory and Design of Reinforced Concrete", Structures Publilcations, Pune, 2013

CE6506 CONSTRUCTION TECHNIQUES, EQUIPMENT AND PRACTICE

UNIT I CONCRETE TECHNOLOGY

WEEK 1 Cements – Grade of cements - concrete chemicals and Applications – Grade of concrete - manufacturing of concrete

WEEK 2: – Batching – mixing – transporting – placing – compaction of concrete – curing and finishing - Testing of fresh and hardened concrete

WEEK 3:quality of concrete – Extreme Weather Concreting - Ready Mix Concrete - Non-destructive testing.

UNIT II CONSTRUCTION PRACTICES

WEEK 4: UNIT TEST I

Specifications, details and sequence of activities and construction co-ordination – Site Clearance – Marking – Earthwork - masonry – stone masonry – Bond in masonry - concrete hollow block masonry – flooring – damp proof courses

WEEK 5:construction joints – movement and expansion joints – pre cast pavements – Building foundations – basements – temporary shed – centering and 53

shuttering – slip forms – scaffoldings – de-shuttering forms – Fabrication and erection of steel trusses – frames – braced domes – laying brick — weather and water proof – roof finishes – acoustic and fire protection.

WEEK 6: UNIT TEST II

UNIT III SUB STRUCTURE CONSTRUCTION

WEEK 7: Techniques of Box jacking – Pipe Jacking -under water construction of diaphragm walls and basement-Tunneling techniques – Piling techniques - well and caisson - sinking cofferdam **WEEK 8**scable anchoring and grouting-driving diaphragm walls, sheet piles - shoring for deep cutting - well points -Dewatering and stand by Plant equipment for underground open excavation. **UNIT IV SUPER STRUCTURE**

CONSTRUCTION

WEEK 9: UNIT TEST III

Launching girders, bridge decks, off shore platforms – special forms for shells - techniques for heavy decks – in-situ pre-stressing in high rise structures

WEEK 10: Material handling - erecting light weight components on tall structures - Support structure for heavy Equipment and conveyors - Erection of articulated structures, braced domes and space decks.

WEEK 11: UNIT TEST IV

UNIT V CONSTRUCTION EQUIPMENT

WEEK 12: Selection of equipment for earth work - earth moving operations - types of earthwork equipment - tractors, motor graders, scrapers, front end loaders, earth movers

WEEK 13 and 14: Equipment for foundation and pile driving. Equipment for compaction, batching and mixing and concreting - Equipment for material handling and erection of structures - Equipment for dredging, trenching, tunneling

WEEK 15: ICD CLASSES

WEEK 16 and 17: MODEL EXAM

TEXT BOOKS:

1. Peurifoy, R.L., Ledbetter, W.B. and Schexnayder, C., "Construction Planning, Equipment and Methods", 5th Edition, McGraw Hill, Singapore, 1995.
2. Arora S.P. and Bindra S.P., "Building Construction, Planning Techniques and Method of Construction", DhanpatRai and Sons, 1997.
3. Varghese, P.C. "Building construction", Prentice Hall of India Pvt. Ltd, New Delhi, 2007. 4. Shetty, M.S, "Concrete Technology, Theory and Practice", S. Chand and Company Ltd, New Delhi, 2008.

REFERENCES

1. Jha J and Sinha S.K., "Construction and Foundation Engineering", Khanna Publishers, 1999.
2. Sharma S.C. "Construction Equipment and Management", Khanna Publishers New Delhi, 2002.
3. Deodhar, S.V. "Construction Equipment and Job Planning", Khanna Publishers, New Delhi, 2012.
4. Dr. Mahesh Varma, "Construction Equipment and its Planning and Application", Metropolitan Book Company, New Delhi, 1983.
5. Gambhir, M.L, "Concrete Technology", Tata McGraw Hill Publishing Company Ltd, New Delhi, 2004

GE6674 COMMUNICATION AND SOFT SKILLS - LABORATORY BASED

UNIT I LISTENING AND SPEAKING SKILLS

Conversational skills (formal and informal) – group discussion and interview skills – making presentations. Listening to lectures, discussions, talk shows, news programmes, dialogues from TV/radio/Ted talk/Podcast – watching videos on interesting events on Youtube

UNIT II READING AND WRITING SKILLS

Reading different genres of texts ranging from newspapers to philosophical treatises – reading strategies such as graphic organizers, summarizing and interpretation Writing job applications – cover letter – resume – emails – letters – memos – reports – blogs – writing for publications.

UNIT III ENGLISH FOR NATIONAL AND INTERNATIONAL EXAMINATIONS AND PLACEMENTS

International English Language Testing System (IELTS) – Test of English as a Foreign Language (TOEFL) – Graduate Record Examination (GRE) – Civil Service (Language related) – Verbal ability.

UNIT IV SOFT SKILLS (1)

Motivation – self image – goal setting – managing changes – time management – stress management – leadership traits – team work – career and life planning.

UNIT V SOFT SKILLS (2)

Multiple intelligences – emotional intelligence – spiritual quotient (ethics) – intercultural communication – creative and critical thinking – learning styles and strategies

CE6511 SOIL MECHANICS LABORATORY

LIST OF EXPERIMENTS:

1. DETERMINATION OF INDEX PROPERTIES

- a. Special gravity of soil solids
- b. Grain size distribution – Sieve analysis

- c. Grain size distribution Hydrometer analysis
 - d. Liquid limit and Plastic limit tests
 - e. Shrinkage limit and Differential free swell tests
2. **DETERMINATION OF INSITU DENSITY AND COMPACTION CHARACTERISTICS**
- a. Field density Test (Sand replacement method)
 - b. Determination of moisture – density relationship using standard Proctor compaction test.
3. **DETERMINATION OF ENGINEERING PROPERTIES**
- a. Permeability determination (constant head and falling head methods)
 - b. One dimensional consolidation test (Determination of coefficient of consolidation only)
 - c. Direct shear test in cohesion-less soil
 - d. Unconfined compression test in cohesive soil
 - e. Laboratory vane Shear test in cohesive soil
 - f. Tri-axial compression test in cohesion-less soil (Demonstration only)
 - g. California Bearing Ratio Test

CE6512 SURVEY CAMP

During IV Semester Summer Vacation) (2 Weeks)

Two weeks Survey Camp will be conducted during summer vacation in the following activities:

1. Triangulation
2. Trilateration and
3. Rectangulation
