VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.

B.E. Civil Engineering

Semester VIII

B.E./B.Tech IV (Civil) :: 8th Semester		Teaching Scheme (Hours)			Examination Scheme					
					Theory			Practical/ Drawing		
Course	Course No.	L	T	P	Duration (hours)	Marks	Tuto. Mark.	Cont. Int. Eval. Marks	End Sem. Marks	Total Marks
Professional Practice	CE801C	3	2	-	3	100	-	20	30	150
Construction Project Management	CE802C	3	2	-	3	100	50	-	-	150
Concrete Technology	AM803C	3	-	2	3	100	-	20	30	150
Project - I	CE804C	-	-	4	-	-	-	40 +	60	100
Project - II	AM805C	-	-	4	-	-	-	40 +	60	100
Elective - I	CE/AM81 C *	3	1	-	3/4	100	25	-	-	125
Elective - II	CE/AM83 C *	3	1	-	3/4	100	25	-	-	125

* Students have to opt one subject from each ELECTIVE GROUP – I & ELECTIVE GROUP – II as listed.

\+ Assessment by the Department by panel of 2 examiners including supervising teacher.

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CE 801 C PROFESSIONAL PRACTICE

(A) THEORY :

1. Office Practice:

Organizational set up, working of professional firms, office procedure, construction contracts, legal aspects, professional charges, role of builder and contractor.

2. Tendering and Contracting:

Tender and tendering process, types of tenders, contract, Principles of contracting, types, scope of contract, contract documents, condition of contract, execution of work, improper work and defects, time extension, liquidated damages, contract breach, certificates and payments, duties and liabilities.

3. Arbitration & Easement:

The purpose of arbitration, the powers and duties of arbitrator, Arbitration and building contract, Types of Arbitration, Fire insurance, easement characteristics, types.

4. Valuation :

Definition ,Market value, freehold & leasehold , sinking fund, depreciation methods of valuation, The rental method of valuation, Land and building bases development methods of valuation.

5. P.W.D Accounts and Procedure of works :

Organization set up, Classification of work, Execution of work, book keeping, Measurement book, Store procedure, Mode of payments, Public works accounting system.

6. Entrepreneurship developement :

Concept, need and scope of entrepreneurship, characteristic of entrepreneurship, Forms of business organization.

7. IPR and Patent Act:

Importance and scope, forms of IPR, patents, copy rights, trademarks, relevant acts.

(B) Practical/Tutorial/Drawing/Sketching :

Based on the theory course prescribed as above.

REFERENCES :

1. Patil B.S., “Civil Engineering Contracts”, Vol.- I, Orient Longman publcation, 1998.
2. Dutta. B.N., “Estimating & Costing in Civil Engineering”, UBS publishers, Bombay, 1996.
3. Rashan Nanavati, “Professional Practice”, Lakhani book Depot, Mumbai

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CE 802 C CONSTRUCTION PROJECT MANAGEMENT

(A) THEORY :

1. Introduction :

Construction industry, construction team, Project types, Practice, need of management, types of management.

2. Project Planning :

Planning philosophy, types of construction, Role of construction manager, Contractor, Project initiation, Project Organization.

3. Construction Network Analysis:

Bar chart, Mile stone, network elements, development of network, time estimation, CPM, PERT approaches, , CPM updating, network examples , LOR , PNA methodology.

4. Resources Planning & Management :

Labour requirements & productivity, Equipment management, Material management, Inventory control, personnel management, resources planning, smoothing and levelling.

5. Cost & Financial Management :

Production function, Direct & Indirect costs, Contingency cost control system, Cash flow control , appraisal of projects, budgeting, time -cost optimization.

6. Project Control & Construction Safety :

Control process, Areas of control, Schedule control, Monitoring, Quality control, Safety aspects.

7. Information Systems:

Concept and usage of Linear programming, Transportation models, Simulation, Bid analysis.

(B) Practicals/Oral/Sketching/Drawings :

Based on the course prescribed above.

REFERENCES

1. B Sengupta & H Guha , “Construction Management and Planning”

2. George J. Ritz “Total Construction Project Management” ,McGraw Hill, Inc. (1994)

3. Punamia B.C., & Kandelwal K.K.,“Project Planning and Control”, Laxmi Publication, Delhi, (1990)

4. K. K. Chitkara “Construction Project Management - planning, Scheduling and Controlling” Tata Mc Graw Hill Publishing Co. Ltd., New Delhi, (1998)

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AM 803C CONCRETE TECHNOLOGY

(A) THEORY :

1. Properties of Cement

Manufacturing of Portland cement, Chemical composition of Portland cement. Hydration of cement and action of gypsum. Setting of cement, Physical and chemical test for cement as per IS-4031 IS-269, Different types of cement, chemical composition, important properties and applications, Admixtures – accelerators, retarder water reducing agents, plasticizers, water proofing compounds, pumping aids.

2. Properties of Aggregates

Classification of aggregates, Important physical properties, Mechanical properties, Specific gravity, bulk density, moisture content, water absorption of aggregates, Sieve analysis, grading curves, fineness modulus, gap grading, Deletereous Substances in aggregates, alkali aggregate reaction, Maximum size of aggregates.

3. Fresh Concrete

Definition of workability, factors affecting workability. Measurement of workability. Slump test, compacting factor test, Segregation and blending of concrete, Mixing of concrete, types of mixres, Vibration of concrete, types of vibrators, internal external surface and table vibrators, Concreting in hot and cold weather, Ready mixed concrete, pumped concrete, pre placed aggregate concrete, vaccum processed concrete, shotcrete or guniting.

4. Strength of Concrete

Factors affecting strength of concrete, Methods of curing, Different methods of curing and steam curing at atmospheric pressure and high pressure curing, warm water method.

5. Testing of Hardened Concrete

Need for testing, Compression test – cube, cylinder, prism and equivalent cube test, Effects of various factors on test results e.g. end conditions, capping, moisture content, height/diameter ratio, shape of specimen, rate of loading, size of specimen, Comparision of strength of cubes and cylinders, Flexure test, Split tensile test, Non-destructive testing, needs and applications, Rebound hammer test, ultrasonic test, test cores.

6. Mix Design

Definition and need for designing mixes, Methods of mix design, IS method of mix design in detail with examples.

(B) PRACTICALS :

At least 5 to 10 experiments will be conducted in the laboratory. The students shall submit the journal with experimental results.

REFERENCES :

1. Neville A.M. (1973) – “Properties of Concrete” 3rd ed., Pitman Publishing Company, Bath, U.K.

2. Shetty M. S. (1986) – “Concrete Technology – Theory and Practice” 2nd ed., S.Chand & Company, New Delhi.

3. Gambhir M. L. (1986) – “Concrete Technology” Ist ed., Tata McGraw Hill Company, New Delhi.

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Semester VIII

CE 804 C PROJECT - I

PROJECT - I

Civil Engineering Project is aimed to provide an analytical and professional approach to the real problems in field. Project work initiated in the Seventh Semester

(CE/AM 708 C) shall be continued and to be completed . The project may cover inventory / field / laboratory observations / model building , data processing, analysing / designing processes. The technical report writing is part of project training. Computer usage in project work is desired. Final assessment of the project is by presentation and viva exam on the scheduled date, notified by the University.

AM 805C PROJECT - II

PROJECT - II

Project – II is aimed to provide an analytical and professional approach to the real problems in field. Project work initiated in the Seventh Semester

(CE /AM 708 C) shall be continued and to be completed . The project may cover inventory / field / laboratory observations/model building , data processing, analyzing/designing processes. The technical report writing is part of project training. Computer usage in project work is desired. Final assessment of the project is by presentation and viva exam on the scheduled date, notified by the University.