VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.

B.E. Civil Engineering

Semester - V

B.E./B.Tech III (Civil) :: 5th 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
Hydrology & Open Channel Hydraulics	CE501C	3	-	2	3	100	-	20	30	150
Bldg. Design & Drawing	CE502C	3	-	4	4	100	-	40	60	200
Bldg. Construction	CE503C	3	-	2	3	100	-	20	30	150
Geo Tech. Engg - II	AM504C	3	1	-	3	100	25	-	-	125
Structural Analysis - II	AM505C	3	1	-	3	100	25	-	-	125
Structural Design & Drawing - I	AM506C	3	-	2	4	100	-	20	30	150

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CE 501 C HYDROLOGY & OPEN CHANNEL HYDRAULICS

(A) THEORY:

PART-I : HYDROLOGY :

1. INTRODUCTION TO HYDROLOGY :

Hydrologic cycle, scope and application of hydrology, hydro-metrology, hydrologic equation, stochastic hydrology.

2. PRECIPITATION :

Types of precipitation, measurement techniques, gauge network, hydrographs, averaging depth of precipitation over the basin, mass rainfall curves, intensity duration curves, elementary concepts of evaporation and infiltration, infiltration effect,recharge of ground water.

3. STREAM GAUGE :

Selection of site for storage and discharge measurements, velocity-area method, use of hydraulic structures for discharge measurement, chemicals methods, use of storage relationship.

4. RUNOFF :

Factors affecting runoff, stream flow analysis, rainfall runoff relationship, frequency analysis, peak flow formula, low flow analysis.

5. GROUND WATER HYDROLOGY :

Occurrence, distribution of ground water, specific yield of aquifers, movement of ground water, Darcy's law, permeability, safe yield of a basin, Hydraulics of wells under-steady condition in confined and unconfined aquifers, yield of wells, types of tube wells.

PART - II: OPEN CHANNEL HYDRAULICS:

6. UNIFORM FLOW IN OPEN CHANNEL :

Steady uniform flow and concept of specific energy, chezy's , Manning's and Kutter's formula velocity distribution and contours, efficient hydraulic section.

7. NON-UNIFORM FLOW IN OPEN CHANNEL :

Equation of gradually varied flow, its limitation, flow classification and surface profile, Energy and momentum for open channel, its application to hydraulic jump, location of jump, energy dissipating devices.

Flumes and Bends in channels :Standing wave flume, venturi flume, characteristics of flow through channel bend, energy loss in flow through bends.

8. FLOOD ROUTING THROUGH OPEN CHANNELS :

Basic equation for flood routing, channel routing, Muskingham's method.

(B) PRACTICALS / DRAWINGS :

1. Study of recording and non-recording type rainguages.
2. Study of pan - Evaporimeter for measurement if evaporatron.
3. Study of currentmeter for measurement of flow in open channel.
4. Preliminary study of Hele-shaw Apparatus.
5. Assignment on hydrology.
6. To determine Chezy's and Mannings constants for flow through open channel.
7. To determine amount energy dissipated by forming hydraulic jump in the channel.
8. Flow measurement using standing wave flume / venturi flume.
9. Study of surface profile on some hydraulic structures.
10. Assignment on open channel hydrauilcs.

REFERENCES:

1. K. Subramanya, " Engineering Hydrology", Tata Mc-Graw Hill Publishing Co. Ltd., New Delhi,(1990).
2. K. Subramanya, " Flow in open channels", Tata Mc-Graw Hill Publishing Co., Ltd., New Delhi, (2nd Edition,1997).
3. Todd D. K, " Ground Water Hydrology", John Wiley & Sons. Toppan Co., Japan,(1991).
4. Rangaraju, " Open Channel Hydraulics", Nem Chand Bros., Roorke,(1995).
5. V.T. Chow, " Open Channel Hydraulics", Mc-Graw Hill, New York, (1992).

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B.E. Civil Engineering

Semester - V

CE 502 C BUILDING DESIGN AND DRAWING

(A) THEORY:

1. BUILDING SYSTEM & ARCHITECTURE :

Impact of architecture, architect and engineer, organizational set-up, structural system, types of buildings, building forms.

2. FUNCTIONAL DESIGNING :

Basic areas in residential buildings, framing of family requirements, basic principles of functional planning, sketching and setting of plans.

Plan preparation for bungalows, duplexes, apartments and row houses, structure forms, space forms, space analysis, activity space, size and dimension decision, furniture layouts.

Planning of typical public buildings, space norms, basic areas, functional setting of different areas, application to planning of hostel, hotel, small offices, schools and dispensary etc.

3. ENVIRONMENTAL DESIGNING :

Nature and shelter, climatic zones, tropical climate, elements of climate, ventilation, daylight, and acoustic aspects in planning.

4. ARCHITECTURAL COMPOSITION :

Aesthetic expression, basic principles, mass composition, elevational treatment, landscaping.

5. BUILDING REGULATION :

Building byelaws - typical terms, F. S. I. margins, plot coverage, building height, plot size and room spaces.

6. BUILDING DRAWING :

Drawing scales, different drawings, presentation drawings, drawing parallel and oblique perspective views, working drawings, staircase detailing and drawing, foundation layouts, landscape and other sketches.

(B): PRACTICALS / DRAWING / STUDIO :

1. Assignment on planning of residential building

(a) Bunglow

(b) Duplex

(c) Appartment

(d) Row House

2. Assignment on planning of public building

REFERENCE BOOKS:

1. Shah M. G. Kale C. M., and S. Y. Patki, " Building Drawing ", Tata Mc-Graw Hill Pub. Co. Ltd, New Delhi (1997).

2. Sane Y. S., " Planning & Designing of Building ", Allies Book Stall, Poona 4.

3. " General Development Control Regulations", SUDA, Surat.

4. Ernest Pickering, " Architectural Design", John Wiley & Sons.

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B.E. Civil Engineering

Semester - V

CE 503 C BUILDING CONSTRUCTION

(A) THEORY:

1. FOUNDATION CONSTRUCTION :

Types of soils, bearing capacity, types of foundations, excavation, timbering of trenches, construction of shallow - grillage and raft foundations.

2. MASONARY CONSTRUCTION :

Types of masonary, choice of masonary, bonding in masonary, brick bonds, brick masonary in foundation and super structure. reinforced and cavity brick masonary, composite walls, dressing of stones, construction of stone masonary, types and construction of partition walls lintels and arches.

3. CONCRETE CONSTRUCTION :

Concrete in construction, different concrete mixes and usage's, placing compacting and curing of concrete, reinforced concrete, reinforcement details of foundations, columns, beams and slabs, formworks.

4. FLOORING :

Types of floors, construction of terrazzo, mosaic tiles, I. P. S. floors, R.C.C. ribbed floors, floor covering, timber and jack arch floors, tiles, rubber, PVC covering.

5. ROOF CONSTRUCTION :

Types of Roof, terminology, trussed roofs, special type concrete roofs, roof coverings, tiling, A.C.C. and G.I. sheets.

6. DOORS, WINDOWS AND STAIRCASE CONSTRUCTION :

Types of doors, windows, ventilators , choice, fixtures, types of stairs, terminology, choice of staircases.

7. BUILDING FINISHES :

Different types of plastering, pointing, mortar proportions, choices, white and colour washing, distempering, cement painting, varnishing and painting of woodwork and steel.

8. SPECIAL CONSTRUCTIONS TECHNIQUES :

Construction for thermal insulation, materials and treatments, damp prevention ,fire prevention construction.

9. SCAFFOLDING AND FORMWORK :

Different types of scaffolding, formwork - requirements, material, centering & shuttering for beams, columns and slabs.

(B) PRACTICALS / TUTORIALS:

1. Foundation Construction
2. Special Construction Techniques
3. Masonary Construction
4. Scaffolding Formwork
5. Concrete Construction
6. Flooring
7. Roof Construction
8. Doors, Windows & Staircases
9. Building Finishes

REFERENCES :

1. Barry , " Building Constructions", Vol. I , II & III , ELBS Publications.
2. McCay , " Building Construction " , Vol. I , II & III , ELBS Publications.
3. Arora and Bindra , " A Textbook of Building Construction " , Dhanpat Rai & Sons , New Delhi.
4. Sharma & Kaul , " A Textbook of Building Construction " , S. Chand & Co. , New Delhi.

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Semester - V

AM 504 C GEOTECHNICAL ENGINEERING - II

Information Awaited

AM 505 C STRUCTURAL ANALYSIS - II

Information Awaited

AM 506 C STRUCTURAL DESIGN & DRAWING - I

Information Awaited