



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Diploma of Vocation (D.Voc), 4th Semester

Branch: Architecture Assistantship

Subject Name: Advanced Construction Technology

Subject Code: 1240601

Type of course: Core

Focus:

- To study the construction systems of roofing for large span and complex buildings.
- To study construction systems with focus on modern & contemporary building elements.
- Understanding of specialized construction system

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE (E)	PA (M)	ESE (V)	PA (I)		
3	0	0	3	50	0	0	0	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Content:

Sr. No.	Contents:	Teaching Hour	% Weightage
1	Materials and Construction Technology for large span Structures (Temporary/Permanent) – Materials – concrete and steel Large span structures – waffle slab, grid slab, shell structures	6	20
2	Exterior skin of a structure - Structural glazing, aluminum composite panel Cladding of a wall – stone, brick, glass fiber	6	10
3	Understanding and application of Precast – paver blocks, door and window frames, ventilation/jhali Understanding and application of pre-stressed concrete components – sleepers	6	20
4	Plastics – types, properties, and uses of plastics such as polycarbonates, acrylics, PVC polymer films, fiber reinforced plastic. Rubber and Asbestos cement products.	6	10
5	Waterproofing elements – Bitumin, epoxy, concrete, plastic, sealants (silicon) Construction chemicals and additives – Accelerator, Retarder, air entering agent, pigments	6	10
6	Firefighting systems – smoke detector, fire alarming system, fire hydrants, dry carbon, sprinkler	6	10
7	Glass – its types like plate, tinted, decorative reinforced, laminated glass block, fiberglass, glass murals, partially colored glass, etching of glass, toughened glass and its applications in building industry for interiors and their fixing details.	6	20



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	Total	42	100
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Suggested Specification table with Marks (Theory):

Distribution of Theory Marks				
R Level	U Level	A Level	N Level	E Level
5	20	15	5	5

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate and above levels (Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

References:

- Barry's, Advanced Construction of Buildings, Wiley-Blackwell
- Roy Chudley, Roger Greeno, Construction Technology, Pearson Education Limited
- Khanna P.N., Civil Engineers Handbook, UBS Distributors Ltd ...
- Kumar Sushil-Building Construction, Standard. Edition.
- Mackay W.B., Building Construction, Pearson Education India

Course Outcomes:

Sr. No.	CO Statement	Marks % weightage
1	To understand Materials and Construction Technology used in large span Structures (Temporary/Permanent)	20
2	To understand Glass as a material, Structural glazing, aluminum composite panel, Cladding used in building industry	30
3	To Understand Precast and Pre-stressed concrete components and their applications in the building/construction industry.	20
4	To understand Plastics – types, properties and uses in construction.	10
5	To understand Waterproofing elements, construction chemicals and additives	10
6	To understand Firefighting systems design in building design	10

Projects:

By site visits, model making, case study along with preparation of site reports/reports and documents drawings.

Method:

Site visits, Video's, Presentations, Market study etc.