



GUJARAT TECHNOLOGICAL UNIVERSITY

Master of Engineering

Subject Code: 3722017

Semester – II

Subject Name: Design of Formwork

Type of course: Program Elective - III

Prerequisite: Building Construction, Design of Structures

Rationale: To study the temporary structures that contractors have to build in order to construct the primary structure. This includes form work, scaffolding, support excavation systems, and equipment for hoisting materials, personnel, and erecting structures.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE (E)	PA (M)	ESE (V)	PA (I)	
03	02	02	04	70	30	30	20	150

Content:

Sr. No.	Content	Total Hrs
1	Introduction: Formwork and false work, Temporary work systems, Construction planning and site constraints, Materials and construction of the common formwork and false work systems, Special and proprietary forms.	09
2	Formwork Design: Concrete pressure on forms, Design of timber and steel forms, Loading and moment of form work.	09
3	Design of Decks and False works: Types of beam, decking and column formwork, Design of decking, False work design, Effects of wind load, Foundation and soil on false work design	09
4	Special Forms: The use and applications of special forms	06
5	Formwork Failures: Causes and Case studies in Formwork Failure, Formwork Issues in Multi-Story Building Construction	05
6	Construction Sequence and Safety in use of Formwork: Sequence of construction, Safety use of formwork and false work.	04



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Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
30	40	15	5	5	5

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

Reference Books:

- Formwork for Concrete Structures, First Edition, McGraw Hill -2012, Kumar Neeraj Jha.
- Formwork for Concrete Structures, McGraw- Hill, 2006, Robert L. Peurifoy and Garold D. Oberlender.
- Formwork for concrete structures, McGraw Hill – 2011, Peurifoy, R.L. and Oberlender,G.D.
- Technical Monograph for Formwork,2002, Indian Concrete Institute.
- IS 14687: 1999, False work for Concrete Structures Guidelines, BIS.

Course Outcomes:

Sr. No.	CO statement	Marks % weightage
CO-1	Design decking, form work and false work.	40
CO-2	Apply the sequence of construction of civil Engineering structures	30
CO-3	Apply the safety norms involved in the design of form work and false work	10
CO-4	Use of right material for manufacturing false work and form work suiting specific requirements.	20