



GUJARAT TECHNOLOGICAL UNIVERSITY

BACHELOR OF ENGINEERING SYLLABUS

Subject Code : N116AC01 (w.e.f. AY 2025-26)

Subject Name : Design of Formwork

Prerequisite : Mechanics of Solids, Structural Analysis I

Rationale : Formwork is known as the most important but temporary kind of activity in concrete work. Poor quality formwork never gives good quality concrete. Many new techniques are developed over the time to speed up the construction. Special type of formwork requires for special type of structures. The course gives extensive exposure to different types of formworks from ordinary to special and design of formwork.

Course Scheme :

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Practical		
				ESE (E)	PA(M)	ESE (V)	PA (I)	
3	0	2	4	70	00	30	00	100

Course Content :

Sr. No.	Course Content	No. of Hours	% of Weightage
1	Introduction: Requirements and selection of formwork based on Structure, Materials used in Formworks, Construction methods.	6	15
2	Design of Formworks: Design of formwork for Foundations, Walls, Beams, for Slabs and for special structures such as Bridges, Heavy duty forms, Overhead tanks, Folded plates structures, Shells, Domes. Cost of formwork work the different structure.	14	35
3	Special Formworks: Slip form formworks, Table form, Tunnel forms, Formworks for precast construction.	10	25
4	Formwork Management: Sequence of construction, Formwork management issues, formwork failures case study-causes and lessons learnt, Safety of formwork and false works. Re-use/Recycling of form work material.	12	25

Reference Book :

- 1) Formwork for Concrete structures, Neeraj Kumar Jha, Macgraw Hill Education
- 2) Formwork for concrete Structures, Robert L Peurifoy, Garold G. Oberlander
- 3) Modern Practices in formwork for civil engineering structures, Dr. Janardan Jha, S. K. Sinha
- 4) Austin. C.K., "Formwork for Concrete", Cleaver- Hume Press ltd., London 2006.
- 5) Indian Concrete Institute, "Technical Monograph for Formwork", 2002. P. Chandra, Projects: Planning, analysis, selection, financing, implementation, and review, Tata McGraw-Hill, New Delhi, 2009.



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Course Outcome :

After Completion of the Course, Student will able to :

No.	Course Outcomes	RBT Level*
01	Select proper formwork, accessories and material.	UN, AP
02	Design the form work for Beams, Slabs, columns, Walls and Foundations and special Structures.	AN, EL, CR
03	Explain special formworks for tunnels, table forms and slip forms for particular structures.	UN, AP
04	Judge the formwork failures through case studies.	AP, AN, CR

*RM: Remember, UN: Understand, AP: Apply, AN: Analyze, EL: Evaluate, CR: Create

Suggested Course Practical List :

- 1) Formwork - Types and Methods
- 2) Special formwork
- 3) Formwork design for slab, beam and wall
- 4) Case study - formwork failure

List of Laboratory/Learning Resources Required :

- PASCHAL Formwork designing software
- <https://nptel.ac.in/>
- Constructor.org

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