

# GUJARAT TECHNOLOGICAL UNIVERSITY

**ME Civil (Construction Engineering & Management)**  
**Advanced Construction Techniques**  
**SUBJECT CODE: 3711409**

**Type of Course:** Core

**Prerequisite:** NIL

**Teaching and Examination Scheme:**

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE	PA(M)	Viva	PA (I)		
3	0	2	4	70	30	30	20	150

**Contents:**

Sr.No.	Topics	Hrs.	% Weightage
1	Introduction to Advanced Construction Techniques	2	05
2	Construction Techniques for Excavations, Dewatering of Excavations, Pile Foundations and Piling Techniques, Caissons, Box Jacking, Pipe Jacking, Construction of Cofferdams. Trenchless Technology. Construction for High Rise Structures, Buildings, Chimneys, Cooling Towers.	10	28
3	Construction Techniques of Special Structures: Lattice Towers and Transmission Line Structures, On Shore and Off Shore Structures, Geodesic Structures. Tunnels, Bridges, Roads	10	28
4	Temporary Structures for new and damaged structures, Advance Demolition and Dismantling Techniques, Retrofitting, Strengthening of Various R.C.C Structures, Strengthening of Masonry Structures	6	17
5	Precast and Pre Stressing Techniques. Modular Coordination: Basics of Modular Co-Ordination, Advantages of Modular Coordination, applications of Modular Coordination, Erection Technology: Erection Cycle, Erection Methods for Various Types of Buildings And Steel Structures	8	22
		<b>36</b>	<b>100</b>

**Reference Book(s):**

1. S.S. Ataev, “*Construction Technology*”, Mir Publishers.
2. P. Dyanchenko and S. Mirotvorsky, “*Prefabrication of Reinforced Concrete*”, Mir Publishers.

3. Henrick Nissen, "*Industrial Building and Modular Design*", Cement Concrete Association, London.
4. R. Chudlay, "*Construction Technology (Vol. I to IV)*", Longman.
5. Robert wade Brown, "*Practical foundation engineering hand book*", McGraw Hill Publications.
6. Patrick Powers, and J. John, "*Construction Dewatering: New Methods and Applications*", Wiley & Sons.
7. Roy Chudley and Roger Greeno, "*Advanced Construction Techniques*", Pearson Prentice Hall.
8. Peurifoy, "*Construction Planning, Equipment & Method*", Tata McGraw Hall Pub.
9. Sanksar S and Saraswati S., "*Construction Technology*", Oxford University Press.
10. M.S. Shetty, "*Concrete Technology: Theory and Practice*", S.Chand Pub. 5.

**List of Experiments:** Based on Above Syllabus.