



**2-Year Master of Technology (M.Tech) Curriculum and
Syllabus for Civil Engineering (CE)**

Second Semester

A. Theory

Sl.	Code Number	Subject	Full Marks@	Contact Hours				Credit Point
				L	T	P	Total	
1	TIU- IPCE -T12	Theory of Plates and Shells		4	0	0	4	4

B. Sessional

2	TIU- IPCE -S12	Term Paper	100	0	0	0	0	10
3	TIU- IPCE -S14	Seminar on Term Paper	100	0	0	0	0	4
4	TIU- IPCE -S16	Seminar on Pre-stressed Concrete		0	0	0	0	4
5	TIU- IPCE -S18	Seminar on Tall Structures		0	0	0	0	4
6	TIU- IPCE -S10	Seminar on Advance RCC Design						4

Total of Semester

26

Syllabus

Theory of Plates and Shells (TIU- IPCE -T12)

Pure bending of plates; Symmetric bending of circular plates; Small deflection of laterally loaded plates; Rectangular plates with various edge conditions; Continuous rectangular plates; Plates of various shapes; Shells as space enclosure, geometry, classification, principal and Gauss curvature; General theory of thin elastic shells; Shallow and high rise shells; Circular long and short cylindrical shells, beam-arch approximation for long shells; Shells of double curvature, surfaces of revolution and translation; Circular, elliptic and hyperbolic paraboloids, conoids and funicular shells - membrane and approximate bending theories; Closed form and numerical methods of analysis of synclastic and anticlasticshells.

Text/References:

1. Timoshenko, S.L., *Theory of Plates and Shells*, McGraw Hill
2. Reddy, J.N., *Theory and Analysis of Elastic Plates and Shells*, Taylor & Francis
3. Ugural, A.C., *Stresses in plates and shells*, WCB/McGraw Hill
4. Ventsel, E. and Krauthammer, T., *Thin Plates and Shells: Theory: Analysis, and Applications*, CRC Press