

Branch Name:	Civil Engineering (Structural Engineering)
Semester/Year:	Semester II / First Year
Subject Title:	Structural Dynamics and Earthquake Engineering Practical
Subject Code:	2ET2060201P
Pre-requisite Subject:	Mechanics of Solids, Structural Analysis, Matrix Methods of Structural Analysis and Engineering Mathematics

Course Objective:

1. To understand structural dynamics and earthquake concepts and techniques in relation to its applications in the design and analysis of civil structures..
2. To apply structural design approaches incorporating structural dynamics satisfying both strength and serviceability requirements of Australian Standards.
3. To communicate structural dynamics and earthquake design, including concepts and approaches to stakeholders.

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-	-	-	10	25	10	25	50

List of Experiments:

- Shake Table Experiment on the Seismic Performance Of different structures models.

Major Equipment:

- Shake Table

List of References:

1. Dynamics of Structures - A. K. Chopra
2. Structural Vibrations - Theory and Computation - Mario Paz
3. Earthquake Resistant Design - Manish Shrikhande & Pankaj Agrawal
4. Design Structural Dynamics - Clough & Penzien
5. Elements of earthquake engineering - Jaikrishna & Chandrasekaran
6. Advanced reinforce of concrete design – P.C.Vergesh
7. IS 1893-2002 ,IS 13920- 1993 & IS 4326

Course Learning Outcomes (CLO):

After successful completion of the course the students shall be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand characteristics of earthquake and its effect on structures	L-1, L-2
CLO2	Estimate lateral forces acting on symmetric as well as asymmetric buildings,	L-1, L-2, L-4
CLO3	Find mode shapes and natural frequency,	L-1, L-2, L-4
CLO4	Carry out seismic response analysis of a structure	L-1, L-2, L-4
CLO5	Design and detail to enhance ductility,	L-1, L-2, L-4, L-6
CLO6	Understand various seismic response control strategies	L-1, L-2
CLO7	Design earthquake resistant masonry structures.	L-1, L-2, L-4, L-6

L1- Remember, L2- Understand, L3- Apply, L4- Analyze, L5- Evaluate, L6- Create

Mapping of CLOs with Pos & PSOs

	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
Course Learning Outcomes	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CLO1	M	M	M									M		M	
CLO2	M	M	M	M			M					M	M	M	M
CLO3	M	M	M	M	M	M						M	M	M	M
CLO4	M	M	M	M		M	M					M	M	M	M
CLO5	M	H	M	M		M						M	M	M	M
CLO6	M	M	M	M		M							M		M
CLO7	M	M	M	M	M	M						M	M	M	M

H:High, M:Medium, L:Low