Course Type	Course Code	Name of Course	L	T	P	Credit
DP	NCEC528	Advanced Structural Engineering Laboratory	0	0	3	1.5

Course Objective
The course aims to impart knowledge of advanced testing methods related to Structural Engineering.
Learning Outcomes
Upon successful completion of this course, the students should be able to: • Develop knowledge of materials and methods related to Structural Engineering.

Unit No.	Topics to be Covered	Contact Hours	Learning Outcome
1	Fatigue analysis of structures	3	Understand the fatigue response of structures.
2	Torsion of circular shafts	3	Understand the effect of torsion on circular shafts.
3	Stress-strain behavior of reinforcing steel	3	Understand stress-strain response of reinforcing steel.
4	Dynamic Properties of Different Structures: Basic dynamic properties of SDOF and MDOF System.	9	Understand the basic dynamic properties of different structures.
5	Buckling and axial testing of Columns: Buckling behavior of columns under different parameter variations like length, support condition and material types.	6	Knowledge about the buckling effect on columns.
6	Stress Analysis: Stress analysis by electric resistance strain gauges and observation of stress concentration.	3	Understanding stress analysis and stress concentration.
7	Photoelasticity	3	Understanding stress analysis and stress concentration using photoelasticity.

8	Revision	6	Revision of previous classes.
Total Contact Hours		**42**	

Text Books:

1. Moondra H S, Gupta Rajiv (2009), " Laboratory Manual For Civil Engineering", 2nd Edition, CBS Publication.

Reference Books:

1. Respective Indian Standard/ International Standard Codes of Practices.