NIRMA UNIVERSITY

Institute of Technology

School of Engineering

Master of Technology - Civil Engineering

(Computer Aided Structural Analysis and Design)

Semester- II

L	T	P	C
0	0	2	1

Course Code	6CL153
Course Name	Experimental Techniques in Structural Engineering

Course Outcomes:

At the end of the course, students will be able to –

1. list objectives, scope, techniques and expected outcomes for an experiment
2. develop experimental setup for testing of structural elements
3. interpret outcomes of an experiment.

Syllabus: Laboratory hours: 30

Need of structural testing, Test objectives, scope, techniques and outcomes, Study and use of various types of sensors and actuators for structural application.

Instrumentation and testing techniques for structural elements under static and dynamic loads

Testing of structural models such as beam, column, frame, slab and joints etc. under static loading

Dynamic tests on structural models, Evaluation of damping.

Laboratory work:

Laboratory work will be based on above syllabus with minimum 04 experiments to be incorporated

Suggested Readings:

1. Harris, H. G. & Sabnis, G. M. *Structural Modeling and Experimental Techniques*, CRC Press.
2. Beyon, J. *Hands on Exercise Manual for LabVIEW Programming, Data Acquisition and Analysis*, Prentice Hall.
3. Wilson, J., Ball, S. & Kester, W. *Test and Measurement*, Burlington.
4. Bungey, J. H., Millard, S. G. & Grantham, M. G. *Testing of Concrete in Structures*, Taylor & Francis.
5. Doebelin, E. O. & Manik, D. N. *Measurement System*, McGraw Hill.

L= Lecture, T= Tutorial, P= Practical, C= Credit