INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE

1.	Title of the Course	Structural Engineering Laboratory
2.	Course Number	CE2292
3.	Status of the Course	Core
4.	Structure of Credits	0-0-3-2
5.	Offered To	UG
6.	New Course/Modification to	New
7.	To be Offered by	Department of Civil Engineering
8.	To take effect from	July 2018
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	**Course Objective:** This laboratory course explains the fundamental theoretical concepts in structural mechanics through experimental studies. This course also facilitates hands-on experience in performing experiments to evaluate the constitutive property of construction materials.	
12.	**Course Content:** Introduction to tensile testing on steel flat coupons and rebars; Evaluation of elastic stiffness and modulus of rigidity of closed helical spring under compression; Study on deformation behaviour of beams with different boundary conditions; Verification of Maxwell-Betti's theorem; Torsion test on solid circular steel; Stress analysis in thin- walled cylinders; Buckling of struts; Bending stresses in beams; Study on unsymmetrical bending behaviour of singly/doubly symmetric thin walled sections; Static analysis of three hinged arch, cables and propped cantilever beam.	
13.	Text book(s): 1. Timoshenko S and Young D M, *Element of Strength of Materials* , Affiliated East West Private Limited (1968).	
14.	Reference(s): 1. Popov E P, *Mechanics of Materials,* Prentice Hall of India Private Limited (1976). 2. Daniel L S and Bechthold M, *Structures,* Pearson Publications (2014).	