COURSE CONTENT

STRENGTH OF MATERIALS LABORATORY								
III Semester: CE								
Course Code	**Category**	**Hours/ Week**			**Credits**	**Maximum Marks**		
2530172	**Core**	**L**	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
		0	0	2	1	40	60	100
Contact Classes: Nil	**Tutorial Classes: Nil**	**Practical Classes: 30**				**Total Classes: 30**		
Prerequisites: NIL								

Course Overview :

The Strength of Materials Laboratory provides hands-on experience with experiments on tension, compression, bending, torsion, and shear. Students study stress–strain behavior, elastic constants, failure modes, and verify theoretical concepts through practical testing of engineering materials and structural elements.

Course Objectives: The objectives of the course are to

- Conduct the Tension test, Compression test on various materials
- Conduct the Shear test, Bending test on determinate beams
- Conduct the Compression test on spring and Hardness test using various machines
- Conduct the Torsion test, Impact test on various materials

Course Outcomes: After the completion of the course, students should be able to

- Determine the yield stress, ultimate tensile stress, percentage elongation of steel, compressive strength of brick and concrete
- Determine the ultimate shear stress, modulus of elasticity of steel
- Determine the stiffness of the close coiled helical spring and hardness number of mild steel, brass, copper and aluminum.
- Determine the modulus of rigidity and impact strength of steel**.**

List of Experiments:

1. Tension test
2. Bending test on (Steel/Wood) Cantilever beam.
3. Bending test on simple support beam.
4. Torsion test
5. Hardness test
6. Spring test
7. Compression test on concrete.
8. Impact test
9. Shear test
10. Verification of Maxwell's Reciprocal theorem on beams.
11. Use of electrical resistance strain gauges.
12. Continuous beam–deflection test.

MATERIALS ONLINE:

1. Course template
2. Lab Manual
3. Open-ended experiments
4. E-Learning Readiness Videos(ELRV)