3. IS: 456 – 2000, IS: 800 – 2007, IS: 875 – 1964, BIS, New Delhi.

4. *"Large Panel Prefabricated Constructions, Proc. of Advance Course"* by SERC, Madras, 2004.

1. *"National Building Code*", BIS, New Delhi, 2005.

2. Subrahmanyam, N., *"Space Structures",* Wheeler & Co., Allahabad, 1st Edition, 1999.



## EXPERIMENTAL TECHNIQUES IN STRUCTURAL ENGINEERING LAB

Course Code: 13CE 2208

| L | P | C |
|---|---|---|
| 0 | 3 | 2 |

**Course Outcomes**:

At the end of the course the student will be able to

CO1 : Draw stress-strain curve of concrete
CO2 : Determine elastic properties of steel
CO3 : Assess the flexural and shear capacity of R.C beams
CO4 : Measure the strength of concrete using Non-Destructive testing methods
CO5 : Estimate the double shear strength of steel specimen.

1. Elastic properties of concrete.
2. Elastic properties of steel.
3. Shear capacity of R.C. beams.
4. Flexural test on R.C. Beams.
5. Modulus of rupture of concrete
6. Flexural capacities of R.C. slabs.
7. Flexural capacity of corrugated metal decks.
8. Non-Destructive testing of Concrete.
9. Double shear test on steel rod specimen.
10. Pre-stressing of beam (pre-tensioning)
11. Pre-stressing of beam (post-tensioning)

12. Strain measurement using strain gauges.

**REFERENCES**

1. Relevant IS Codes: 456-2000, IS: 800-2007, IS: 10262-2009.
2. Shetty M.S; *"Concrete Technology"* , 3rd Edition, S chand Publications – 2008.
3. Neville A.M. *"Properties of Concrete",* 4th Edition, S Chand Publications.



## ADVANCED STEEL STRUCTURAL DESIGN

Course Code: 13CE 2209 **L P C**
**4 0 3**

**Course Outcomes**:

At the end of the course, the student will be able to:

CO1 : Analyse and design the Truss type Rolling stock (moving vehicles) and Pedestrian bridges.
CO2 : Analyse and design High Tension Transmission line towers.
CO3 : Analyse and design Self-supporting steel chimneys for Industrial purposes
CO4 : Analyse and design North light roof trusses and Lattice girders for Industrial buildings.
CO5 : Associate and perform analysis and design of elevated steel water tanks to store oil and water.

**UNIT-I**

Design of pedestrian Bridge (N-Truss and Pratt), Design of through type truss bridge member for dead load and equivalent live load including top, bottom bracings and portal bracing.

**UNIT-II**

Analysis and design for transmission line tower.

**UNIT-III**

Design of self supporting steel chimneys including foundations.

**UNIT-IV**

Design of North light trusses and Lattice girder.

**UNIT-V**

Design of water storage and oil storage steel tanks.

**TEXT BOOKS**

1. Ramchandra. *"Design of Steel Structures Vol. I & II",* 3rd Edition, Standard Book House, New Delhi, 1998