# Department of Civil Engineering

I M.Tech I SEM, **TE &P**, 2016-17

## *LESSON PLAN*

| Period | Date | Topic | Unit No | Teaching Methodology | Cumulative Periods |
|---|---|---|---|---|---|
| 2 | 26-08-2016 | Introduction on Elasticity and Plasticity and its basics | I | CR/BB | 2 |
| 2 | 29-08-2016 | Notation for forces and stresses & components of stresses | I | CR | 4 |
| 2 | 02-09-2016 | Components of strain- Hooke's law | I | CR | 6 |
| 2 | 09-09-2016 | Plane stress and plane strain analysis | I | CR | 8 |
| 2 | 16-09-2016 | Plane stress and plane strain, Stress at point & strain at point | I | CR | 10 |
| 2 | 19-09-2016 | Differential equation of equilibrium and boundary conditions | I | CR/BB | 12 |
| 2 | 23-09-2016 | Compatibility equation boundary conditions and stress function | I | CR | 14 |
| 2 | 26-09-2016 | Two – Dimensional problems in rectangular coordinates – solution by polynomials | II | CR | 16 |
| 2 | 30-09-2016 | Saint-venant's principle | II | CR/BB | 18 |
| 2 | 03-10-2016 | Determination of displacements, bending of simple beams, application of fourier series for two dimentional problems for gravity loading | II | CR | 20 |
| 2 | 07-10-2016 | Two – Dimentional problems in polar coordinates general equation in polar coordinates | III | CR | 22 |
| 2 | 14-10-2016 | Strain components in polar coordinates-displacements for symmetrical stress distribution | III | CR | 24 |
| 2 | 24-10-2016 | Circular discs-stress on plates with circular holes | III | CR | 26 |
| 2 | 28-10-2016 | Analysis of stress and strain in three dimensional principle stress – strain ellipsoid and stree director surface | IV | CR | 28 |
| 2 | 31-10-2016 | Determination of principal stress maximum shear stress | IV | CR/BB | 30 |
| 2 | 04-11-2016 | Homogenious deformation principle axes of strain | IV | CR | 32 |

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| 2 | 07-11-2016 | Torsion of prismatical bars – bars with elliptical cross section | IV | CR | 34 |
| 2 | 11-11-2016 | Other elementary solution membranes analogy | IV | CR/BB | 36 |
| 2 | 14-11-2016 | Torsion of rectangular Bars | IV | CR | 38 |
| 2 | 18-11-2016 | Theory of plasticity introduction | V | CR/PPT | 40 |
| 2 | 21-11-2016 | Concepts and assumptions of plasticity | V | CR/BB/PPT | 42 |
| 2 | 28-11-2016 | Torsion: Torsion of straight bars | VI | CR | 44 |
| 2 | 02-12-2016 | Saint venent's solution- stress function | VI | CR | 46 |
| 2 | 05-12-2016 | Warp function – Elliptical cross section | VI | CR | 48 |
| 2 | 09-12-2016 | Membrane Analogy torsion of narrow rectangular cross section | VI | CR/PPT/BB | 50 |

NOTE: C.R / BB- Class Room Teaching (Black Board, PPT)

Signature