

FDP on

Elasticity

&

Analysis of Plates

for Civil Engineers

25 - 31 January 2016

Organized by

Department of Civil Engineering



VIDYA JYOTHI

Institute of Technology

An Autonomous Institution

Objective:

Theory of Elasticity builds mathematical expressions for basic solid deformations and stress building for given loading scenarios and is a branch of continuum mechanics. As real structures undergo small deformations in a linear state, the same is assumed i.e. infinitesimal strains or small deformations and components of stresses are directly proportional to strain components. These assumptions are reasonable for many engineering materials and engineering design scenarios. Therefore, elasticity becomes a fundamental subject and is widely used in structural analysis and engineering design.

Theory & Analysis of plates deals with deriving or formulating mathematical expression for different plate based on their geometry, boundary conditions & loading understanding elasticity will help in easier analysis of plates.

This one week course deals with all the fundamentals of major concepts of both elasticity & plates with live examples. This course will help a student & faculty members to understand the roots of the structural analysis and at the same time it will also give confidence for analysis of any structure either be it a simple or complex.

About VJIT:

Founded in 1998, by a group of committed academicians and enterprising educationists, VJIT quickly won the confidence of the parent community and the students to become one of the select destinations for future engineers. Soon the lamp of knowledge began to spread its radiance far and wide. VJIT is closely located in the picturesque surroundings of the cool and breezy Osman Sagar Lake on one side and the serene and peaceful Chilkur temple, the abode of Lord Balaji, on the other. The governing board of VJIT is a combination of experience and management skills, supported by a team of dedicated and highly successful faculty.

Director:

Dr. P Venugopal Reddy

Course Coordinator:

Dr. Archana Dongre
HoD, Civil Engineering

Course Faculty:

P V Dilip Kumar
IIIT Hyderabad

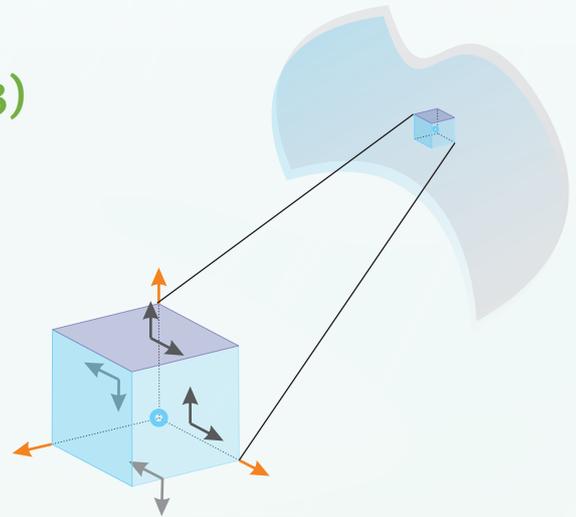
Course Committee:

| | |
|---------------|----------------|
| S Bhargavi, | Asst. Prof. |
| Srinivas, | Asst. Prof. |
| P Govardhan, | M.Tech Student |
| N Sai Ram, | M.Tech Student |
| K Venkatesh, | M.Tech Student |
| K Rakesh, | M.Tech Student |
| N Vishwanath, | M.Tech Student |
| M Vivek, | M.Tech Student |
| Ch Karun, | M.Tech Student |

List of Topics

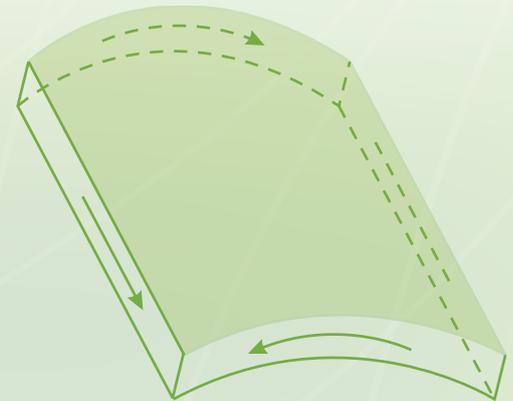
Theory of Elasticity & Plasticity (Day 1 - 3)

- ⇒ Introduction to Elasticity
- ⇒ Notation, Equations of Equilibrium
- ⇒ Plane Stress & Plane Strain Problems
- ⇒ 2D Problem in Rectangular Coordinates
- ⇒ Polar Coordinates & its Applications
- ⇒ Bending of Simple Beams
- ⇒ Introduction to 3 Dimensional Problems
- ⇒ principal Stress
- ⇒ Understanding General Theorems
- ⇒ Introduction to Torsion of Prismatic Bars
- ⇒ Torsion of Rectangular Bars
- ⇒ Journey from Elasticity to Plasticity



Theory & Analysis of Plates (Day 4 - 6)

- ⇒ Introduction to Plates
- ⇒ Derivation Plate Equation
- ⇒ Pure Bending of Plates
- ⇒ Differential Equation for Thin Plates
- ⇒ Plate under Sinusoidal Load
- ⇒ Navier's & Levy's Solution
- ⇒ Symmetrical Loading in Circular Plates
- ⇒ Understanding Orthotropic Plates
- ⇒ Plates on Elastic Foundation - I
- ⇒ Plates on Elastic Foundation - II
- ⇒ Buckling of Plates
- ⇒ Finite Difference Methods



Daily Program Schedule

| | |
|---------------|-------------------|
| 9.30 - 10.00 | Basics / Revision |
| 10.00 - 11.00 | Session - I |
| 11.00 - 12.00 | Session - II |
| 12.00 - 1.00 | Lunch |
| 1.00 - 2.00 | Session - III |
| 2.00 - 3.00 | Session -IV |
| 3.00 - 3.15 | Tea Break |
| 3.15 - 4.00 | Problem Solving |

Who Should Attend

- ⇒ Students studying in M Tech / ME and PhD.
- ⇒ Faculties from Academics & Institutes
- ⇒ Professionals from Industry, Consultants and Engineer / practitioners.

Registration:

| | | |
|-----------------|------------------|--|
| Students | Rs.2000/- | * Registration fee includes:- Course Material, Participation Certificate & Lunch. |
| Faculty | Rs.2500/- | |

The payment of the registration fee should be in the form of Demand Draft/local cheque in favor of "Principal VJIT", payable at Canara Bank, Hyderabad (Himayatnagar Branch).

Contact Details:

- ⇒ P Govardhan (M: +91 90596 20623)
- ⇒ N Sai Ram (M: +91 96528 69470)

* Send the scanned copy of DD & filled registration form to civil@vjit.ac.in

* Last date for registration: 20 Jan 2016.

* Accommodation is available in private hostel for Rs.200/- per day. (to be paid separately)

Registration Form:

Full Name (In block letters):-

Designation:-

Affiliation with Addresses:-

.....

Contact Number: (O):-

(M):-

E-mail:-

Details of Registration Fees:

Amount Rs. Only)

DD No:-

Dated:

Signature of the Participant