

# PCI6D001 APPLICATION OF MATRIX METHOD IN STRUCTURAL ANALYSIS (HONOR) (4-0-0)

## Module I

Introduction to Flexibility Matrices and Stiffness Matrices, Static and kinematic indeterminacy - properties of stiffness and flexibility matrices, concept of co-ordinates, solution of simple problems.

## Module II

Analysis of Beams: Flexibility and stiffness matrices for beams, solution of problems, bending moment diagram

Analysis of Plane Truss: Flexibility and stiffness matrices for plane truss, solution of problems, internal forces due to thermal expansion, lack of fit.

## Module III

Analysis of Plane Frame: Flexibility and stiffness matrices for plane frame, solution of problems, bending moment diagram.

## Module IV

Use of Software Packages

Analysis of beam, plane truss & plane frame by STAAD-PRO.

## Reference Books

1. Mukkopadhyay M and Sheikh A.H (2004) Matrix and Finite element analyses of structures, First edition, Ane Books Pvt. Ltd.
2. Pandit G.S., & Gupta S.P. (1998), Structural Analysis (A matrix approach), Tata McGraw Hill Publishing Ltd.