| **6th Semester** | | **Finite Element Method** | **L-T-P 3-0-0** | **3 Credits** |
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**Module – I** INTRODUCTION

Review of basic approximate methods of analyses – Stiffness and Flexibility matrix for simple cases – Governing equation and convergence criteria of finite element method.

**Module – II** DISCRETE ELEMENTS

Bar, Frame, beam elements – Application to static, dynamic analysis.

**Module – III** CONTINUUM ELEMENTS

Various types of 2-D-elements Application to plane stress, plane strain and axisymmetric problems.

**Module – IV** ISOPARAMETRIC ELEMENTS

Applications to two and three-dimensional problems(four, eight and nine nodded element), Numerical Integration

**Module – V** FIELD PROBLEM

Applications to other field problems like heat transfer and fluid flow.

**Books**

1. Tirupathi.R.C and Ashok D.B, "Introduction to Finite Elements in Engineering", Prentice Hall India, Third Edition, 2003.
2. Reddy J.N. "An Introduction to Finite Element Method", McGraw-Hill, 2000.
3. Krishnamurthy, C.S., "Finite Element Analysis", Tata McGraw-Hill, 2000.
4. Bathe, K.J. and Wilson, E.L., "Numerical Methods in Finite Elements Analysis", **Prentice Hall of India, 1985.**