

Introduction to Finite Element Method

(Fall Semester, 2022, Last class at SNU)

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Text : Class note by the instructor (Downloadable at the homepage)
Reference : 1. Concepts and Application of Finite Element Analysis 3rd Ed. by R. D. Cook
2. The Finite Element Method by T. J. Hughes
3. The Finite Element Method 4th Ed. by O. C. Zienkiewicz

Contents

1. Introduction to Numerical Solutions of Partial Differential Equation (1)
2. Approximation of functions & Variational Calculus (1-2)
3. Differential Equations in One Dimension (2-4)
4. Multi-dimensional Problems-Elasticity (5-6)
5. Discretization with Finite Elements/2-D elasticity problems (8-9)
6. Various Types of Elements - Isoparametric Formulation - (10-11)
7. Numerical Integration (12)
8. Miscellaneous Topics (13-14)
9. Problems with Higher Continuity requirement – Beam/Mixed Formulation (14-15)

Evaluation

(to be adjusted as needed)

1. Mid-Term Exam. : 25 % (Oct. 17, 90 min.)
2. Final Exam : 40 % (Dec. 7, 180 min. at least)
3. Home Works/Att. : 25 %/10%
4. Term Project : to be announced if any.

Rules for Class

1. All grades including C, D, F are possible.
2. No homework will be accepted after due dates.
3. No cellular phone during class
4. The final grade of F will be given if any cheating is found in exams or homeworks.
5. **Final grades are final. Absolutely no chance to alter them by any excuse.**