

## 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 3<sup>rd</sup> Ed. by R. D. Cook  
2. The Finite Element Method by T. J. Hughes  
3. The Finite Element Method 4<sup>th</sup> 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.