4.8.2020

CEA6 21

FINITE ELEMENT METHODS

TAUGHT BY

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COURSE TOPICS

- introduction
- ~~Small~~ strong and weak forms for one dimensional heat conduction and elasticity problems.
- finite element formulation for one dimensional problems
- shape functions
- finite element equations
- examples

- numerical integration
- mathematical preliminaries
- green's theorem
- divergence theorem
- scalar field problems

4.8.2020
2

AUGUST

9 Saturday

221-144 • WK 32

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13	14					
20	21					
27	28					
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- strong and weak form for two dimensional heat conduction

9

- three node triangular elements.

10

- four node rectangular elements

11

- iso-parametric elements

12

- four node quadrilateral element.

1

- numerical integration

2

- higher order elements

3

- multi-dimensional elasticity
- strain tensor
- stress tensor

10 Sunday

- constitutive law
- coordinate transformations
- Strong form
- weak form
- finite element formulation

2014

- iso-parametric finite elements
- structural mechanics
- beams
- euler-bernoulli beam theory
- strong and weak forms
- finite element formulation
- coordinate transformations
- timoshenko beam theory
- plane truss
- plane frame

TEXT BOOKS

1. finite element method; kwon
2. finite element method; SS rao
3. finite element method; JN reddy