# SCOPE OF MIDTERM EXAM

CEE 361-513: Introduction to Finite Element Methods

Thurday Oct. 19

The midterm exam will take place in Friend 008 from 11:00am-12:20pm on Thursday October 26th. The midterm exam will be closed book and closed notes. Non-conceptual formulas (i.e. $\boldsymbol{K_{fw}} = 12/EI \ldots$ ) will be provided if needed). Below are *some* (not all) possible topics of relevance for the mid-term. More generally, anything that has been covered until the end of Lecture 11 on Thursday October 19th is of relevance.

- Vectors and vector algerba
- Tensors and tensor algebra
- PDEs
  - Classification of PDEs
  - Classification of differential problems
  - Classification of boundary conditions
- Matrix structural analysis:
  - Truss elements; governing equations, 1-d elements, and $n-d$ elements
  - Frame elements; governing equations, 1-d elements, and $2-d$ elements
  - Different constraints (eg. hinges, sliding on planes etc . . . )
  - Direct stiffness method for the assembly of global equations