



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

# Form Synthesis, Assembly, and Applied Stress Analysis

## MECHENG 7760

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**Credit Hours:**

3.00 - 3.00

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**Course Levels:**

Graduate (5000-8000 level)

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**Course Components:**

Lecture

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**Course Description:**

Advanced form synthesis and assembly and applied stress analysis. Emphasis on shape synthesis for minimum weight assemblies and design of parts for optimum utilization of material and maximum ease of assembly.

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**Prerequisites and Co-requisites:**

Prereq: 3671 (563), or permission of instructor.

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**Course Goals / Objectives:**

- Be able to conduct complex stress analysis using finite elements
- Be able to design parts based on the principles of form synthesis
- Understand how to design a part for optimum response to torsion
- Understand how to design parts to resist buckling
- Understand the principles of assembly
- Be able to design parts for maximum ease of assembly
- Be able to conduct an accurate manual stress analysis of complex parts

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**Course Topics:**

- Principles of form synthesis
  - Design to resist torsion
  - Design to resist buckling
  - Design for maximum ease of assembly
  - Design for optimum assembly
  - Applied stress analysis of complex parts
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**Designation:**

Elective