

- Course Number and Title: M E 331. Intermediate Strength of Materials
- Catalog Description: Covers stress and strain, theories of failure, curved flexural members, flat plates, pressure vessels, buckling, and composites.
- Credit Hours: 3 Credits (3)
- Prerequisite(s) / Corequisite(s): Prerequisite(s): M E 328 and C E 301  
Corequisite(s): None
- Required: Required for BSME Degree (as Mechanics Elective)
- Course Availability: Spring Semester Only
- Instructor (Usual): Dr. Borys Drach (See <https://mae.nmsu.edu/people/faculty.html>)
- Textbook: Ugal, A.C., and Fenster, S.K., *Advanced Mechanics of Materials and Applied Elasticity*, 6th Ed., Pearson, 2020 (ISBN-13: 978-0134859286)
- Course Learning Objectives: After completing this course, a student should be able to:
  - 1) Perform stress and strain analysis for bending of straight and curved beams, torsion of prismatic bars, and complex loading cases
  - 2) Apply governing equations of elasticity
  - 3) Use common failure theories for failure prediction of ductile metals
- Topics Covered:
  - Stress Analysis
  - Strain and Stress-Strain Relationships
  - Bending of Beams
  - Torsion of Prismatic Bars
  - Combined Loading
  - Failure Criteria
  - Plastic Behavior of Materials