SYLLABUS

MAE 316-001, 602, 605
Strength of Mechanical Components
Dr. Eischen
NC State University

MW 3-4:15PM 2213 EBIII Spring Semester 2016

Moodle Link:

https://moodle1516-courses.wolfware.ncsu.edu/course/view.php?id=4921#section-7

Instructor: Dr. J. W. Eischen
Email: eischen@ncsu.edu
Office: 3290 EBIII (919 515-5263)
Office Hours: TuTh 2-3pm
Online Office Hours: 11-12 TH mini-studio live hookup

TA/Grader:
Email:
Office:
Office Hours:

UNCA Facilitator: Daniel Miller
Email: dgmiller@ncsu.edu

Havelock Facilitator: Bill Fortney
Email: wbfortne@ncsu.edu

**Course Prerequisites/Co-requisites**

Preq: *ME, AE, or NE Majors, C- or better in MAE 314 or CE 313*

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**Textbook:**


http://highered.mcgraw-hill.com/sites/0073398209/information_center_view0/

**Grading:**

- Homework (partial grading, full solution postings) 10%
- Test #1 (Wed Feb 17th) 25%
- Test #2 (Wed Mar 30th) 25%
- Final Exam (Friday April 29th, 1-4PM) 40%

**Student Learning Objectives**

The students will be asked to demonstrate their knowledge of the material covered in MAE 316 through their mastery of the following course objectives.

Through the study of MAE 316 the student will be able to:
1. Perform engineering analysis on basic mechanical components including but not limited to: bars, beams, shafts, thick wall pressure vessels, beams with skew loads and non-symmetric cross sections, curved beams, columns, bolted joints.
2. Formulate and solve engineering mechanics problems with advanced techniques such as: Castigliano’s theorem matrix methods (finite elements) for beam analysis.
3. Perform design analysis on mechanical components using taking into account: failure theories, fatigue analysis, fracture mechanics analysis.
4. Perform limited design calculations on machine components such as: beams, thick wall pressure vessels, beams with skew loads and non-symmetric cross sections, curved beams, columns, bolted joints.

**Instructor's Academic Integrity Statement:**

- The University's policy on academic integrity found may be found in the Code of Student Conduct

- Students will be expected to abide by the following NC State Honor Pledge on
exams and other assignments as noted by the instructor.

"I have neither given nor received unauthorized aid on this test or assignment."

Statement for Students with Disabilities:

"Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation

www.ncsu.edu/policies/academic_affairs/pols_regs/REG205.00.28.php"

Online Class Evaluations:

Schedule: Online class evaluations will be available for students to complete during the last 2 weeks of spring term: 8 a.m. April 13 through 8 a.m. April 27. Students will receive an email message directing them to a website where they can login using their Unity ID and complete evaluations. All evaluations are confidential; instructors will never know how any one student responded to any question, and students will never know the ratings for any particular instructors.
Evaluation website: https://classeval.ncsu.edu/
Student help desk: classeval@ncsu.edu
More information about ClassEval: http://www.ncsu.edu/UPA/classeval/