CVEN 305
Mechanics of Materials
Fall 2014
Section 504

Objectives: To introduce students to applications of stress and deformation relationships for structural members subjected to axial, torsional, and bending loads, and thin-walled pressure vessels. Students will study stress and deformation of structural members under combined loadings, stability of columns, including indeterminate members.

Prerequisites: To take CVEN 305, you must have received a passing grade in CVEN 221 or the equivalent. Concurrent registration is not permitted in a prerequisite statics course in any section of CVEN 305.

Lecture: TR 2:20 – 3:35 pm, CE 118

Instructor: W. Lynn Beason, Ph.D., P.E.
Office: 701-C CE/TTI Building
e-mail: lbeason@civil.tamu.edu

Office Hours: 1:00 - 2:00 pm TR and appointments as required.


Grading: Your letter grade for this course will be determined based upon grades from Homework assignments, two scheduled major exams, and a final exam as follows.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date/Time</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Exam I</td>
<td>10/14/2014 2:20 – 3:35 pm</td>
<td>30%</td>
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<tr>
<td>Exam II</td>
<td>11/20/2014 2:20 – 3:35 pm</td>
<td>30%</td>
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<tr>
<td>Final Exam</td>
<td>12/17/2014 1:00 – 3:00 pm</td>
<td>30%</td>
</tr>
<tr>
<td>Homework</td>
<td></td>
<td>10%</td>
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<tr>
<td>Total</td>
<td></td>
<td>100%</td>
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A: \( P \geq 90 \); B: \( 90 > P \geq 80 \); C: \( 80 > P \geq 70 \); D: \( 70 > P \geq 60 \); F: \( 60 > P \)

Beason’s Grading Rubric will be used to score all work.

THERE IS NO POSSIBILITY FOR EXTRA CREDIT IN ANY FORM -- EVERYONE IS TREATED EQUALLY
# Course Coverage:

<table>
<thead>
<tr>
<th>Week</th>
<th>Textbook Reading Assignments</th>
<th>Daily Problem Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>9/1-9/5 Sections 1.1 - 1.5</td>
<td>1.1, 1.2, 1.3, 1.4, 1.6, 1.8, 1.14, 1.15 (9/9) 1.16, 1.19, 1.21, 1.23, 1.30, 1.37, 1.47, 1.51 (9/11)</td>
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<tr>
<td>2)</td>
<td>9/8 – 9/12 Sections 2.1A - 2.1G, 2.2</td>
<td>2.3, 2.4, 2.7, 2.9, 2.10, 2.13, 2.14 (9/16) 2.18, 2.24, 2.27, 2.33, 2.35, 2.36, 2.39, 2.46 (9/18)</td>
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<tr>
<td>3)</td>
<td>9/15 - 9/19 Sections 2.3-2.5, 2.7, 2.10, 2.11.</td>
<td>2.47, 2.49, 2.51, 2.58, 2.61, 2.64, 2.68 (9/23) 2.69, 2.79, 2.81, 2.94, 2.95, 2.97, 2.99, 2.100 (9/25)</td>
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<tr>
<td>4)</td>
<td>9/22 - 9/26 Sections 3.1A - 3.1C, 3.2 - 3.5</td>
<td>At this juncture, students are strongly encouraged to study Appendix A thoroughly. 3.11, 3.13, 3.15, 3.21, 3.23, 3.36, 3.37 (9/30) 3.48, 3.53, 3.55, 3.64, 3.67, 3.72, 3.84, 3.90 (10/2)</td>
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<tr>
<td>5)</td>
<td>9/29 - 10/3 Sections 4.1A, 4.1B, 4.2 - 4.5</td>
<td>4.2, 4.4, 4.5, 4.7, 4.9, 4.10, 4.15 (10/7) 4.17, 4.21, 4.23, 4.33, 4.34, 4.37, 4.40, 4.61 (10/9)</td>
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<tr>
<td>6)</td>
<td>10/6 - 10/10 Sections 4.7 - 4.9, 5.1</td>
<td>4.63, 4.102, 4.105, 4.106, 4.108, 4.127, 4.132 (10/16) 4.133, 4.144, 4.146, 5.3, 5.5, 5.9, 5.11, 5.16 (10/21)</td>
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<td>7)</td>
<td>10/13 - 10/17 <strong>EXAM I: 10/14/2014 2:20 – 3:35 pm</strong> Sections 5.2, 5.3</td>
<td>5.22, 5.44, 5.54, 5.57, 5.60, 5.74, 5.76, 5.77, 5.79, 5.81 (10/23)</td>
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<td>8)</td>
<td>10/20 - 10/24 Sections 6.1A - 6.1C, 6.3, 6.4</td>
<td>6.1, 6.2, 6.3, 6.5, 6.7, 6.9, 6.11 (10/28) 6.13, 6.16, 6.21, 6.29, 6.33, 6.36, 6.37, 6.41, 6.45 (10/30)</td>
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<tr>
<td>9)</td>
<td>10/27 - 10/31 Sections 7.1A - 7.1B, 72</td>
<td>7.1, 7.3, 7.13, 7.16, 7.17, 7.5, 7.7 (11/4) 7.9, 7.10, 7.12, 7.31, 7.32, 7.33, 7.34, 7.35 (11/6)</td>
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<tr>
<td>10)</td>
<td>11/3 - 11/7 Sections 7.2 - 7.6</td>
<td>7.27, 7.28, 7.49, 7.51, 7.52, 7.54, 7.55 (11/11) 7.56, 7.68, 7.70, 7.98, 7.104, 7.109, 7.115, 7.117, 7.120 (11/13)</td>
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<tr>
<td>13)</td>
<td>11/24 - 11/26 Sections 9.4A</td>
<td><strong>Thanks Giving Holiday 11/27-11/28</strong></td>
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<tr>
<td>14)</td>
<td>12/1 - 12/5 Sections 9.4B, 10.1, 10.1A, 10.1B, 10.3</td>
<td>9.81, 9.86, 9.88, 9.90, 9.92, (12/9) 10.9, 10.10, 10.12, 10.13, 10.15, 10.19, 10.20, 10.23 (NTI)</td>
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<tr>
<td>15)</td>
<td>12/8 Final Exam Review</td>
<td>none</td>
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**Final Exam: 12/17/2014, Wednesday, 1:00 – 3:00 pm**
Major Exams: There will be two major exams as scheduled above. Each exam will consist of six questions. The questions that appear on the exams will be inspired by homework problems relating to the pertinent material. The exam dates and times are not “suggested” times and dates – they are “the” times for which the exams will be given. It is your job to show up for the scheduled exams and take them at the appointed time. There is no scheduled “make-up” exam. It is an extremely serious matter for you to miss a scheduled exam. If the scheduled exam times are not convenient for your schedule then it is your responsibility to drop this course and sign up for another section with more convenient testing times.

If a major exam is missed for a valid university excused reason (see below), then you will be given a similar exam, or the missed exam will not be counted in your final average at the discretion of the instructor.

Homework: Homework is nominally due 1 week after it is assigned, except that no homework is assigned on examination days and no homework is due on examination days. The schedule indicates the exact due date for each assignment.

Late homework (up to 1 week) is subject to a 50% penalty. Homework that is more than 1 week late will not be accepted without a documented excused absence.

Homework assignments may receive a check if turned in on time and the solution appears to be substantially complete depending on the level of grading support provided to the course.

Prepare formal solution reports on 8-1/2” x 11” engineering paper using a pencil/pen and your hand. An acceptable engineering paper template is presented on my website if you do not want to buy commercial engineering paper. You are free to construct your own custom paper or use free engineering paper that you received from potential employers. Work submitted on paper torn out of a spiral notebook will not be accepted.

All work should be presented on one side of the paper only. Begin each new problem on a new sheet. Your name, course, section number, problem number, and due date must appear at the top of each page. The current page number as well as the total number of pages in the assignment must appear in the upper right corner of each page. Initial each page in the lower right hand corner of your paper. The body of the report for each problem will consist of seven sections:

Problem: Give a problem statement in complete sentences.

Given: State all that is known about the problem in complete sentences.

Required: State what you have been asked to determine in complete sentences.

Figures: Almost every problem in this course will require a detailed Free-Body-Diagram in support of your solution! Draw all
figures using a straight edge, show an appropriate and consistent set of units, number each figure, and when appropriate in the solution refer to a figure by its number.

Solution: Present your solution in a logical and methodical manner.

Summary: Provide an organized summary of the problem by listing each item from the required statement followed by its corresponding result from the solution section.

Initials: Initial each page in the lower right hand corner in indelible ink to indicate that you take full responsibility for the contents of the solution.

Assemble all of the numbered calculation sheets for each assignment into a single packet and place a staple in the upper left corner (normally I do not have a stapler with me in class).

It is recommended that you make copies of all homework submitted for your personal records. These copies will be very helpful in the case that homework assignments are misplaced during the grading process. In addition, these copies will help you study for major exams that will almost surely be given prior to the return of all of the relevant graded homework.

Excused Absences (excerpt from Student Rules:)
http://student-rules.tamu.edu/

7.1 The student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for absence. Among the reasons absences are considered excused by the university are the following: (Muster)

7.1.1 Participation in an activity appearing on the university authorized activity list. (see List of Authorized and Sponsored Activities)

7.1.2 Death or major illness in a student’s immediate family. Immediate family may include: mother, father, sister, brother, grandparents, spouse, child, spouse’s child, spouse’s parents, spouse’s grandparents, stepmother, step-father, step-sister, step-brother, step-grandparents, grandchild, step-grandchild, legal guardian, and others as deemed appropriate by faculty member or student’s academic Dean or designee.

7.1.3 Illness of a dependent family member.

7.1.4 Participation in legal proceedings or administrative procedures that require a student’s presence.

7.1.5 Religious holy day. (See Appendix IV.)

7.1.6 Injury or Illness that is too severe or contagious for the student to attend class.

7.1.6.1 Injury or illness of three or more days. For injury or illness that requires a student to be absent from classes for three or more business days (to include classes on Saturday), the student should obtain a medical confirmation note from his or her medical provider. The Student Health Center or an off-campus medical professional can provide a medical confirmation note only if medical professionals are involved in the medical
care of the student. The medical confirmation note must contain the date and time of the illness and medical professional’s confirmation of needed absence.

7.1.6.2 Injury or illness less than three days. Faculty members may require confirmation of student injury or illness that is serious enough for a student to be absent from class for a period less than three business days (to include classes on Saturday). At the discretion of the faculty member and/or academic department standard, as outlined in the course syllabus, illness confirmation may be obtained by one or both of the following methods:


b. Confirmation of visit to a health care professional affirming date and time of visit.

7.1.6.3 An absence for a non acute medical service does not constitute an excused absence.

7.1.7 Required participation in military duties.

7.1.8 Mandatory admission interviews for professional or graduate school which cannot be rescheduled.

You will be expected to comply with both 7.1.6.2.a and 7.1.6.2.b to receive an excused absence.

Academic Integrity Statement:

“An Aggie does not lie, cheat, or steal or tolerate those who do.” Students are expected to understand and abide by the Aggie Honor Code presented on the web at: http://www.tamu.edu/aggiehonor. No form of scholastic misconduct will be tolerated. Academic misconduct includes cheating, fabrication, falsification, multiple submissions, plagiarism, complicity, etc. These are more fully defined in the above web site. Violations will be handled in accordance with the Aggie Honor System Process described on the web site.

Copyright Statement:

The handouts used in this course are copyrighted. By “handouts,” it is meant that all materials that have been generated for this course including those materials generated in all previous semesters. Such materials include but are not limited to syllabi, quizzes, exams, problem sets, worked problems, materials presented on my internet site, in-class materials, review sheets, additional problem sets, and/or solutions prepared for these materials. Because these materials are copyrighted, you do not have the right to copy them, or possess copies of them outside of the normal course uses for which they were intended. Certain violations of these copyrights can be treated as violations of academic integrity and will be handled in accordance with the Aggie Honor System Process described on the following web site: http://www.tamu.edu/aggiehonor.
Americans with Disabilities Act:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit [http://disability.tamu.edu](http://disability.tamu.edu).

It is your responsibility to contact the Office of Disability Services and notify me early in the semester if you intend to exercise your rights under the ADA. The Office of Disability Services is in complete charge of administering the ADA provisions. The Office of Disability Services has very strict rules regarding scheduling and timing. You must clear your participation in the ADA program with the Office of Disability Services early in the semester.