MEC E 480 B1 : Advanced Strength of Materials II (Jan.-April 2013)

Lectures : MWF 11:00-11:50 (ETL E2-001).
Instructor : Dr.CQ Ru (MEC 5-8D, Tel.492-4477, Email : cru@ualberta.ca). Office hours: F 13:00-15:00.

Objectives of the course : this course is designed for senior undergraduate students in engineering for advanced theory of strength of materials. It will cover basic concepts and main analysis methods for typical engineering problems regarding stress analysis and failure of engineering materials and structures.

<table>
<thead>
<tr>
<th>Lecture &amp; Topic</th>
<th>Sections in Text</th>
<th>Assignment Problems (Textbook, 6th edition) &amp; Due Day</th>
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<tbody>
<tr>
<td>Jan. 7, 9, 11; 14; 16, 18 Stress; Strain; Strain Energy &amp; Hooke's Law</td>
<td>2.1-2.5; 2.6-2.8; 3.1, 3.3, 3.4</td>
<td>Assignment 1: 2.1, 14, 15, 21, 31 Jan. 16</td>
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<td>Jan. 21, 23, 25 Inelastic materials, Yielding criteria</td>
<td>1.3, 1.4, 4.1-4.5</td>
<td>Assignment 2: 2.55, 67; 3.1, 5, 19 Jan. 23</td>
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<td>Jan. 28, 30; Feb.1, 4; 6 Torsion</td>
<td>6.1-4; 6.5, 6.7; 6.10, 6.11</td>
<td>Assignment 3: 4.3, 8, 10, 13 Jan. 30</td>
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<td>Feb. 8, 11; 13, 25 Thick-walled cylinders Midterm 1, Feb.15 (Friday) 11:00-11:50 (Lecture-room) Feb.18-22 - Reading week</td>
<td>11.1-11.4; 11.5-11.7</td>
<td>Assignment 4: 6.17, 20, 45, 47, 66 Feb. 8 (Friday)</td>
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<td>Feb. 27, March 1; 4, 6, 8 Flat plates</td>
<td>13.1-13.7, 13.8; 13.9</td>
<td>Assign. 6: 13. 1, 5, 6, 9 March 6</td>
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<td>March 11, 13, 15; 20, 22 Contact stresses Midterm 2, March 18 (Monday) 11:00-11:50 (Lecture-room)</td>
<td>17.1-17.7; 17.8, 17.9</td>
<td>Assign. 7: 13. 10, 12, 15, 17 March 13</td>
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<td>March 25, 27; April 3, 5 Stress concentration March 29, April 1 - Holidays</td>
<td>14.1-2; 14.3</td>
<td>Assign. 9: 14. 2, 6, 8, 11 April 8 (Monday)</td>
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<td>April 8, 10, 12 (last day of class) Fracture; Fatigue, Creep</td>
<td>15.1-15.3; 16.1; 18.3, 8</td>
<td>Assign. 10: 15. 13, 18, 20, 22 April 15 (Monday)</td>
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<td>Final Exam: April 19 (Friday) 9:00-11:00am</td>
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<td>Good Luck !</td>
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Prerequisites : MecE 380 or an equivalent.
Grading : Assignments 10%. Midterm1: 25%. Midterm2: 25%. Final Exam 40%.
Assignments : collected on the due-day in the box outside MEC4-9 before 11:00am. No late assignment accepted! Solutions for assignments : to be available in e-class after the due day.
**Calculator Policy**: only approved non-programmable calculators allowed in all exams.

**Plagiarism, Cheating, Misrepresentation of Facts and Participation in an Offence**

Plagiarism, cheating, misrepresentation of facts and participation in an offence are viewed as serious academic offences by the University and by the GFC Campus Law Review Committee (CLRC). Sanctions for such offences range from a reprimand to suspension or expulsion from the University.

GFC CLRC believes that students should be told, at the beginning of each term, how the University defines plagiarism and cheating, what constitutes misrepresentation of facts and participation in an offence -- and what the sanctions are. In particular, awareness of the latter offence may help students resist pressure from other students to assist them in acts of academic dishonesty. We would also like to ensure that all instructors know what they must do when they encounter instances where they believe plagiarism, cheating, misrepresentation of facts or participation in an offence might have occurred.

The "Don't Cheatsheet" is available on the University Governance website at:

[http://www.governance.ualberta.ca/](http://www.governance.ualberta.ca/) From the drop down menu click on Student Appeals and navigate to the Don’t Cheatsheet.

**University Policy regarding Academic Offences:**

“The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at [www.ualberta.ca/secretariat/appeals.htm](http://www.ualberta.ca/secretariat/appeals.htm)) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.”

**SSDS**: For students who write exams with accommodations at SSDS, please be cognizant of their deadlines and regulations. If you fail to meet these deadlines or follow the procedures, the result is most likely that SSDS will be unable to provide the necessary space and/or services you require. In these situations, you will be invited to write your exams with peers during the allotted time in the assigned room.