MECE 301: MECHANICAL MEASUREMENT
WINTER 2012

MecE 301 course consists of a one-hour lecture per week, eight laboratory experiments, and a laboratory-based final examination. The experiments deal with various aspects of instrumentation and measurements. The course provides exposure to common measurement systems and it is independent but complimentary to the lecture series in MecE 300. Teaching Assistants supervise the laboratory periods. They will assist with data collection as well as analysis. You are to prepare and submit a report detailing the results of your work subsequent to completing an experiment. You can find the guidelines for the preparation of written reports on the eClass course web page.

1 INSTRUCTION
Lecture: M 12:00 – 12:50  Location: ETLE1-013
Laboratories: MTWR 14:00 – 16:50 Location: Mec 3-10
Instructor: Dr. Jason Olfert  Office: 5-1C
Office hours: Monday, Tuesday & Wednesday; 1:00 – 2:00 PM

You can seek assistance from your Teaching Assistant or your Instructor. When you have a question about the labs contact your Teaching Assistant first (they are the ones marking your work!). If they are unable to help you, then see your Instructor during his office hours. Contact your TA first via email.

2 SCHEDULE

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<th>Week</th>
<th>Lecture</th>
<th>Lab</th>
<th>Assignment</th>
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<td>Jan 9–13</td>
<td>Basic Definitions</td>
<td>#1 Dimensional Measurement</td>
<td>Report</td>
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<td>Jan 16–20</td>
<td>Displacement Transducers</td>
<td>#2 Displacement Measurements</td>
<td>Worksheet</td>
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<td>Jan 23–27</td>
<td>Bridge Circuits</td>
<td>#3 Strain Measurements</td>
<td>Report</td>
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<td>Jan 30–Feb 3</td>
<td>Rotation</td>
<td>#4 Rotation</td>
<td>Report</td>
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<td>Feb 6–10</td>
<td>Report writing</td>
<td>No Labs</td>
<td>No Assignment</td>
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<td>Feb 13–17</td>
<td>Digital</td>
<td>#5 Digital Measurements</td>
<td>Worksheet</td>
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<td>Feb 20–24</td>
<td>No Lecture – No Labs</td>
<td>– Reading week</td>
<td>No Assignment</td>
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<td>Feb 27–March 2</td>
<td>Pressure</td>
<td>#6 Pressure</td>
<td>Report</td>
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<td>March 5–9</td>
<td>No Lecture</td>
<td>No Labs</td>
<td>No Assignment</td>
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<td>March 12–16</td>
<td>Flow and Velocity</td>
<td>#7 Flow and Velocity</td>
<td>Report</td>
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<td>March 19–23</td>
<td>Temperature</td>
<td>#8 Temperature</td>
<td>Worksheet</td>
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<td>March 26–30</td>
<td>No Lecture</td>
<td>No Labs</td>
<td>No Assignment</td>
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<td>April 2–6</td>
<td>No Lecture</td>
<td>Lab Exam April 4</td>
<td>Lab Exam</td>
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<td>April 9–13</td>
<td>No Lecture</td>
<td>No Labs</td>
<td>No Assignment</td>
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3 MATERIALS
- Lab Précis – downloadable from the course web page on eClass. Find the eClass link on the U of A home page and log in using your CCID as user name. (Bring to lab!)
- Calculator, pencil, ruler (Bring to lab!) [If you can, bring a laptop.]

4 COURSE GRADES
Grades in the course will be based on eight laboratory reports or worksheets and the laboratory exam. The weighting for each part is shown below.

- Lab #1 report 5%
- Reports (4 at 15% each; Labs #3, #4, #6, #7) 60%
- Lab Worksheets (3 at 5% each) 15%
- Lab exam (6 PM, April 4/2011) 20%

Total 100%

NOTE: You must receive a mark greater than or equal to 40% on each assignment in order to pass the course. If you receive a mark lower than 40% (not including any late deductions) on an individual assignment, then you must correct your report and resubmit it to the instructor. You have 3 working days to resubmit the report. The instructor will decide if the resubmitted work is acceptable. The report will not be remarked and you will receive the original mark given. The University of Alberta Marking and Grading Guidelines will be followed.

5 DEADLINES
A hardcopy and digital copy of your assignments must be submitted. Assignments are due by the next laboratory period at 2:00 PM (typically one week after lab period). Hardcopies of the assignments must be submitted in the lab on or before 2:00 PM. Digital copies must be submitted on eClass before the deadline. Any report handed in after that time (either the hardcopy or digital copy) is considered late. The digital copy must be submitted as a pdf. The text in the pdf must be searchable.

6 LATE ASSIGNMENTS
All late assignments must be dropped at Room 5-1C (Dr. Olfert's office) or turned in personally to the TA designated to your group. Please DO NOT leave them in the assignment box, in which case there is no way it can be determined how late the assignment was. This may cost you the maximum late penalty.

Late assignments are subject to the following penalties:
- Less than 24 hrs late, penalty = -10%
- Less than 48 hrs late, penalty = -20%
- Less than 72 hrs late, penalty = -60%
- More than 72 hrs late, penalty = -100%
The percentages are applicable to the maximum score available. For example a report that is less than 24 hrs late and gets a mark of 80 out of 100 is adjusted to 70 out of 100.

7 PLAGIARISM
Plagiarism (to steal or pass off the words or ideas of another as one's own) will not be tolerated. Students will work together in groups to collect the data in each laboratory. However, each student must analyze their own data, create their own figures, and write their own report. You may discuss with one another key concepts or how to do calculations, but each student must submit their OWN work. Penalties for plagiarized work include permanent marks on your transcript and even suspension or expulsion. See the Code of Student Behavior for more detail.

The digital copies of your reports will be entered into a database and compared to lab reports from previous years.

8 POLICY
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 and avoid any behaviour, which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

Recording of lectures is permitted only with the prior written consent of the professor.

Policy about course outlines can be found in Section 23.4(2) of the University Calendar.

ACKNOWLEDGEMENTS
Many individuals have contributed to the earlier versions of this document, and the labs themselves. They are Mark Ackerman, David Nobes, Farbod Fahimi, Lorenz Sigurdson, and Brian Fleck. The help of Tuula Hilvo and Rick Conrad is also appreciatively noted.