MECH 322 Instrumentation (Sensors and Actuators)  
Spring 2015 Syllabus

Description: Theory and practical use of instruments for static and dynamic measurement of strain, acceleration, temperature, pressure, volumetric flow rate, and fluid velocity. Engineering data presentation and analysis. Computer-based data acquisition and control.

Location and times:  
Lectures: OB 102: 9 to 9:50 AM, MWF  
Labs: PE 2:

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<th>Section</th>
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<tbody>
<tr>
<td>1101</td>
<td>Fr 2:00 to 4:45 PM</td>
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<td>1102</td>
<td>Tu 4 to 6:45 PM</td>
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<td>1202</td>
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<td>1103</td>
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<td>1106</td>
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Instructors: Professor M. Greiner, Ph.D., Palmer Engineering Building, Room 213, (775) 784-4873, greiner@unr.edu. TuTh 1-2 PM  
Marissa Tsugawa, M.S., tsugawam@nevada.unr.edu

Supplementary Instructors:  
Nishan Pandey nishanpandey92@gmail.com  
Joseph Young joseph.young@nevada.unr.edu  
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Hayden Nickel hnickel12@gmail.com

(Lab instruction, Tutorials, Homework and Lab Grading)

Text:  

Grading:  
Lab Participation and Reports 15%  
Homework 12%  
Midterm (written, February 19, 2016) 25%  
Midterm (written, March 30, 2016) 25%  
Final (Lab Practicum, May 9-18, 2016) 23%  
Extra Credit (not required) ~4%

NO MAKE-UP EXAMS WILL BE GIVEN unless arrangements are made with the instructor before the exam period.

No late homework or lab reports will be accepted. Please put your assigned ME322 Student Number on your homework, available on WebCampus (Do not put your name on it).
Your homework must be turned in before lecture starts. One-line answers are posted on the course website. Full solutions will be posted on WebCampus after it is due.

**Disabilities:** UNR welcomes students with documented disabilities and encourages them to contact the [Disability Resource Center](#) to discuss appropriate accommodations.

**Drop Date:** Individual courses may not be dropped after March 29, 2016.

**Courtesies:** Please arrive to lecture and lab on time. **If you are late, please sit by the door (do not walk in front to find a seat or turn in an assignment).** **If you are on time, please do not sit by the door.** Please participate in lecture and ask questions, but be careful not to distract other students or the instructor.

**Recording:** Surreptitious or covert video-taping of class or unauthorized audio recording of class is prohibited by law and by Board of Regents policy. This class may be videotaped or audio recorded only with the written permission of the instructor. In order to accommodate students with disabilities, some students may have been given permission to record class lectures and discussions. Therefore, students should understand that their comments during class may be recorded.

**Academic Dishonesty:**
Academic dishonesty may be grounds for receiving an F in this course.

**Course Objectives**
- Observe important physical phenomena
- Perform steady and transient measurements related to those phenomena
- Gain confidence using instruments and computerized data acquisition systems
- Create clear tables and charts to present engineering data (this is an important way engineers and scientist communicate)
- Quantitatively analyze and draw concise conclusions based on data
- Estimate uncertainty in measurements, its affect on calculations, and understand its importance when drawing conclusions and designing experiments
- Reasonable work load
  - Write reports in lab
- Motivate further interest in measurement and experimentation
  - Intriguing and enjoyable
- Develop good lab practices
  - Engage in laboratory practices and measurements
  - Troubleshooting instruments, backing up data, not rushing
  - Be open (prepared) to observe things in lab you do not expect
    - This is why we go to lab!
    - Has the potential to be very interesting, except when rushed