AME341bL: Mechatronics Laboratory II  


Lecture: MWF 8-8:50 or 9-9:50   ZHS 159  
Lab: M, T, W or Th  2-4:50  BHE 301

Instructors: C. Radovich  RRB 202  (213) 740-5359  radovich@usc.edu  Office hours: see Blackboard  
B. Bycroft  BHE 313  (213) 740-4304  bycroft@usc.edu  Office hours: see Blackboard

<table>
<thead>
<tr>
<th>Wk</th>
<th>Date</th>
<th>Lecture</th>
<th>Lab (Assignment)</th>
<th>Assn. Due</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M 1/12</td>
<td>Introduction</td>
<td>No Lab.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W 1/14</td>
<td>Turbulence, Jets and Plumes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>M 1/19</td>
<td>MLK Day</td>
<td>No Lab.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W 1/21</td>
<td>Dynamic Pressure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>M 1/26</td>
<td>2nd Order Systems I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W 1/28</td>
<td>Strain Gauges</td>
<td>E1: Turbulent Jets I (R1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>F 1/30</td>
<td>Wheatstone Bridge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>W 2/4</td>
<td>Thermocouples</td>
<td>E2: Strain gauges/Vibrating Beams (S1)</td>
<td>R1</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>F 2/6</td>
<td>R1 recap</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>M 2/9</td>
<td>Convective Heat Transfer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W 2/11</td>
<td>Quiz Preview/Proposal (TJP) Info</td>
<td>E3: Thermocouples/Heat Transfer (T1)</td>
<td>SS1</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>F 2/13</td>
<td>SS1 recap</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>M 2/16</td>
<td>President's Day</td>
<td>No Lab but…</td>
<td>T1</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>W 2/18</td>
<td>Lab View I</td>
<td>MiniTalks from TC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>F 2/20</td>
<td>T1 recap</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>M 2/23</td>
<td>Lab View II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W 2/25</td>
<td>Terror Quiz</td>
<td>E4: LabVIEW I – Custom Thermo  (E4b)</td>
<td>TJP TQ</td>
<td>5 18</td>
</tr>
<tr>
<td></td>
<td>F 2/27</td>
<td>TQ Post Mortem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>M 3/2</td>
<td>Electric Motors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W 3/4</td>
<td>More on Turbulent Jets</td>
<td>E5: LabVIEW II – Motor Control</td>
<td>E4b</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>M 3/9</td>
<td>No lecture – plan E6 in lab</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W 3/11</td>
<td>Presentations for 341/TJ2</td>
<td>E6: Turbulent Jets II  (T2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>M 3/16</td>
<td>SPRING BREAK</td>
<td>No Lab.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W 3/18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>M 3/23</td>
<td>Optics1 – basics</td>
<td>SE1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W 3/25</td>
<td>Optics2 – digital optics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>M 3/30</td>
<td>Compressible Flows</td>
<td>Presentation from E6: TJ2</td>
<td>T2</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>W 4/1</td>
<td>Shock Tube Measurements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>F 4/3</td>
<td>TJ2 recap, SS2 Details, AME441</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>M 4/6</td>
<td>Controls I</td>
<td>SE1 &amp; SE2</td>
<td>(SE1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W 4/8</td>
<td>Controls II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>M 4/13</td>
<td>Uncertain</td>
<td>SE2 &amp; SE3</td>
<td>(SE1,2)</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>W 4/15</td>
<td>Engineering Aerodynamics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>M 4/20</td>
<td>Lift and Drag of Airfoils</td>
<td>SE3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W 4/22</td>
<td>Not sure yet</td>
<td>Sign-up for SS2</td>
<td>(SE2,3)</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>M 4/27</td>
<td>Last Words</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>W 4/29</td>
<td>Grad School (9am section only)</td>
<td>Final Spreadsheet/Presentation  (SS2)</td>
<td>SS2 (SE3)</td>
<td>12</td>
</tr>
</tbody>
</table>

- 3% of the total grade will be determined by a Performance measure compiled by staff over the whole semester. It includes all aspects of engagement in lectures, labs, the discussion board and office hours.
- The last three Special Experiments (SE1, SE2, SE3) are run for two weeks each. There will be sign-up sheets for each. Each student must complete at least 2 of the 3 Special Experiments.
- A full written report (12% of course grade) is required for one of the Special Experiments and is due one week after the experiment is performed.
- A presentation with a data analysis demonstration (SS2, also 12%) is required for the other Special Experiment and is given in a 10 minute timeslot on your regular lab day during the last week of classes.