## ME230 Winter 2014

### Kinematics and Dynamics

**Instruction Team:**

**Instructor:** Wei-Chih Wang  
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Office hours: M,W, F 1:30-2:30PM

**TA:**  
David Schipf  
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Office hours: Monday 1:00- 4:00PM  
Jinyuan Zhang  
jinyuan@uw.edu  
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Paul Murphy  
pgmurphy@uw.edu  
Office hours: Friday 2:00-5:00PM  
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All TA Office hours are held in MEB 238

**Schedule:**  
Lecture: MWF  12.30-1:20 PM EEB  105

**Text:**  

Supplemental reading materials and assignment solution are available:  
http://courses.washington.edu/engr100/me230

**Grading:**  
Assignments – 20%, Due on Wednesday in Class  
Two midterms – 50% (25% each)  
Final Exam or Project – 30%

Schedule is a guideline and is subject to change throughout the quarter.

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<table>
<thead>
<tr>
<th>Week</th>
<th>Monday</th>
<th>Wednesday</th>
<th>Friday</th>
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| 6    | Lecture: Rectilinear kinematics: Continuous motion  
Reading: 12.1-12.2 | Lecture 1: Rectilinear kinematics: Erratic motion  
Reading: 12.3 | Lecture 2: Curvilinear motion: Rectangular components, Motion of a projectile  
Reading: 12.4-12.6 |
| 13   | Lecture 3: Curvilinear motion: Normal & tangential components and cylindrical components  
Reading: 12.7-12.8 | Lecture 4: Absolute dependent motion analysis of two particles, Relative motion  
Reading: 12.9-12.10 | Lecture 5: Newton’s laws of motion, equation of motion  
Reading: 13.1-13.3 |
| 20   | HOLIDAY | Lecture 6: Equations of motion: Rectangular coordinate system, n-t coordinates  
Reading: 13.4-13.5 | Lecture 7: Equations of motion: Cylindrical coordinates  
Reading: 13.6 |
| 3    | Lecture 10: Impulse and Momentum  
Reading: 15.1-15.3 | Lecture 11: Impact  
Reading: 15.4 | Lecture 12: Angular momentum, relation between moment of a force and angular momentum, angular impulse and momentum principles  
Reading: 15.5-15.7 |
| 17   | Holiday | Lecture 15: Planar kinetics of a rigid body: Moment of Inertia  
Reading: 17.1 | Lecture 16: Planar kinetics of a rigid body: Equations of motion: translation  
Reading: 17.2-17.3 |
| 24   | Lecture 18: Planar kinetics of a rigid body: Equations of Motion: Rotation about a fixed axis  
Reading: 17.4-17.5 | Lecture 19: Planar kinetics of a rigid body: Kinetic energy, Work of a force, Work of a couple, Principle of work and energy  
Reading: 18.1-18.4 | Lecture 21: Linear and angular momentum, Principle of impulse and momentum, Conservation of momentum  
Reading: 19.1-19.3 |
| 3    | Lecture 20: Work and Energy  
Reading: 18.5 | Lecture 21: Linear and angular momentum, Principle of impulse and momentum, Conservation of momentum  
Reading: 19.1-19.3 | Lecture 22: Linear and angular momentum, Principle of impulse and momentum, Conservation of momentum  
Reading: 19.1-19.3 |
| 10   | Review and Final project | Review and Final project | Review and Final project |

Final project is due on Fri. March 21 5PM ME main office!!!
General Policy

**Homework:** Homework will be assigned in class. Homework for each week is due the following Wednesday (*During Class*). The homework has usually 10-12 problems per week. Late homework will not be accepted (partial credit will not be given). Homework solution will be available every Wednesday on the web. Please write down your section number on your homework.

**Grading of Homework:**
Only one or two questions (chosen by the instructor) from the homework (assigned for each week) will be graded – the resulting grade will constitute the grade for that week’s homework. Therefore, answer all the questions correctly to get full credit for the homework.

**Exams:** Exams will be open book and open notes. There will be no alternate exams if you miss any. Exams will include materials covered in the text, class, and homework.

**Final Exam or Project:**

**Grading Policy:** Homework (20%), Two Midterms (25% each), and a Final (30%).
**GPA Formula:** GPA = (Score-50)/40*(4.0-2.0)+2.0 (94=4.0 and 50=2.0.)

Lectures and Recitations

**Regular Lectures:** MWF 12:30 - 1:20 (EEB 105).
**Recitations:**
- Section AA   8:30-10:20   (MEB  242)
- Section AB   10:30-12:20  (DEN  209)
- Section AC   12:30-2:20   (LOW  205)
- Section AD   2:30-4:20    (MEB  103)

First hour of recitation will be lectures by TA or small group collaborative learning. The second hour will be explanation of the homework problems to be due next day.