Course Syllabus
ENGI 220 C01  Mechanics, Dynamics
3 Credit Hours

Semester/year: Spring 2007  Office location: Shields 206C
Instructor: Bill Eberlein  Office Hours: M-F 10 AM Shields 206C
E-Mail Address: eberlein@csi.edu  TR 11 AM Canyon 114
Office Phone: 208-732-6829  M 2 PM Math Lab
TW 2 PM Shields 206C

Course Description: Particle and rigid body kinematics and kinetics, work/energy, impulse/momentum concepts, and combined scalar/vector approach.

Prerequisite: ENGI 210, Statics or equivalent


Supplies: Engineering computation paper and an engineering calculator

Course Objective: Develop the skills and expertise necessary to pass the EIT examination in Mechanics and to develop problem-solving skills required for future engineering courses.

Outcomes Assessment: Students will be assessed through homework and exams.

"As part of departmental analysis of outcomes in this course and its place in the Engineering program, student completion of the prerequisite, success in the current course, success in subsequent courses and student satisfaction will be reviewed by the instructor. A review of this information will be made by department faculty to determine what, if any, changes can be made to improve the course in terms of content, focus, and instruction."

Policies & Procedures:
Attendance will not be recorded or graded, however students are responsible for the material covered in class as well as all changes to assignments, test dates and announcements. Class attendance and participation are keys to a successful outcome.

This class meets Monday, Wednesday, and Friday at 12:00 PM in Shields 203.

Homework assignments are listed later in the syllabus. Each problem is worth 2 points. Homework is due the next day class meets after the section the homework covers is completed in lecture (by 4 PM). Late homework will not be accepted after the test covering the material closes. Each late homework problem will be penalized 1 point.
You are encouraged to stay current on the homework assignments. This will be a benefit in both understanding the material and test preparation.

**Engineering Format is required for all problems.** You must:
- Include a problem statement
- Identify the quantity being sought
- Include a free body diagram
- List assumptions
- Show work
- Underline or box the answer

Tests will be given following chapters 12, 14, 16.7, and 18. Material from chapter 19 will be included on the final.

**Grading:**

Homework will be worth 100 points. The chapter tests are worth 100 points each. The comprehensive final will be worth 200 points.

All test and homework scores will be totaled to reach a final score for the class. Letter grades will be earned according to the following percentages:

- 100-90 A
- 80-89 B
- 70-79 C
- 60-69 D
- <60 F

(or grade on final, whichever is higher)

Students are encouraged to review the policies stated on pages 14 and 15 in the 2006-2007 CSI catalog.

**On-line course Evaluation statement:**

Students are strongly encouraged to complete evaluations at the end of the course. Evaluations are very important to assist the teaching staff to continually improve the course. Evaluations are available on-line at: [http://evaluation.csi.edu](http://evaluation.csi.edu). Evaluations open up two weeks prior to the end of the course. The last day to take an evaluation is the last day of the course. During the time the evaluations are open, students can complete the course evaluations at their convenience from any computer with Internet access, including in the open lab in the Library and in the SUB. When students log in they should see evaluations for the courses in which they are enrolled. Evaluations are anonymous. Filling out the evaluation should only take a few minutes. Your honest feedback is greatly appreciated!
Disabilities: Any student with a documented disability may be eligible for related accommodations. To determine eligibility and secure services, students should contact the coordinator of Disability Services at their first opportunity after registration for a class. Student Disability Services is located on the second floor of the Taylor Building on the Twin Falls Campus. 208.732.6260 (voice) or 208.734.9929 (TTY), or e-mail aflannery@csi.edu.

This syllabus is subject to change at any time.
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#  SECTION  TOPIC  ASSIGNMENT

Week 1
1  11.1  Introduction
2  11.2-11.3  Rectilinear motion  11.3, 13, 18
Week 2
3  11.4-11.6  Uniformly accelerated motion  11.35, 44, 49
4  11.9-11.12  Curvilinear motion  11.101, 110, 121
5  11.13-11.14  Curvilinear motion  11.139, 148, 155
Week 3
6  12.1-12.6  Equations of motion  12.8, 23, 32
7  12.7-12.10  Angular momentum  12.56, 69, 80
8  Review
Week 4
9  EXAM 1
10  13.1-13.5  Work, energy, power  13.5, 16, 27
11  13.6-13.8  Conservation of energy  13.55, 62, 69
Week 5
12  13.9  Application to space mechanics  13.87, 94, 102,
13  13.10-13.11  Impulse and momentum  13.123, 131, 140
Week 6
15  President’s Day
16  Review
Week 7
17  14.1-14.12  Variable systems of particles  14.61, 75, 89
18  EXAM 2
19  15.1-15.4  Translation, rotation  15.3, 12, 19
Week 8
20  15.5-15.6  General plane motion  15.37, 50, 55
21  15.7  Instantaneous center  15.73, 80, 87,
22  15.8-15.9  Acceleration in plane motion  15.109, 120, 125
Week 9
23  15.10-15.11  Coriolis acceleration in plane motion  15.150, 159, 164
24  15.12-15.13  Motion about a fixed point  15.181, 191, 196

Spring Break
Week 10
26  16.1-16.7  Plane motion of rigid bodies  16.3, 14, 22
27  16.1-16.7  Plane motion of rigid bodies  16.45, 51, 58
28  EXAM 3
Week 11
29  16.8  Constrained plane motion  16.71, 82, 93
30  16.8  Constrained plane motion  16.113, 118, 126
31  17.1-17.7  Work and energy  17.7, 15, 22
Week 12
32  17.8-17.10  Impulse and momentum  17.47, 63, 70
33  17.11-17.12  Eccentric impact  17.86, 98, 104
34  18.1-18.4  Momentum and energy in 3-D  18.3, 12, 17
Week 13
35  18.1-18.4  Momentum and energy in 3-D  18.32, 39, 53
36  18.5-18.8  Motion in 3-D  18.57, 64, 71
37  18.5-18.8  Motion in 3-D  18.86, 93, 102
Week 14
38  EXAM 4
40  19.5  Free vibration of rigid bodies  19.38, 48, 55
Week 15
41  19.6  Energy methods  19.71, 80, 85
42  19.7  Forced vibrations  19.98, 107, 112
43  Review

Final Exam: Wednesday 5/9/07 at 10 AM

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