Course Syllabus
ENGI 220 C01  Mechanics, Dynamics
3 Credit Hours

Semester/year: Spring 2010  Office location: Shields 206C
Instructor: Bill Eberlein  Office Hours: W, F 11 AM Shields 206C
E-Mail Address: eberlein@csi.edu  T, R 11 AM Canyon 114
Office Phone: 208-732-6829  M 1 PM Math Lab
By Appointment

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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 be recorded. You are responsible for everything presented in class whether you are there or not.

It is the student's responsibility to drop the course.

During the first two weeks of the term, a student may drop a course or completely withdraw without its being recorded on the student's official transcript. After the first two weeks a "W" will be recorded in any course the student drops.

A student desiring to drop a course during the first two weeks of the term may do so on-line. In order to drop or completely withdraw after the first two weeks, the student must complete and submit a drop or complete withdrawal form to the Admissions and Records Office.
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NOTE: No course may be dropped or withdrawn from after 75% of the course or twelve weeks of the term have elapsed, whichever is earlier.

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. 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 34 and 35 in the 2009-2010 CSI catalog.
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On-line course Evaluation statement:
To help instructors improve courses, students are strongly encouraged to go online to http://evaluation.csi.edu and complete anonymous evaluations which open two weeks before the end of the course and close on the last day of class. When students enter the site, they find evaluations for their enrolled courses. Thank you for this valuable input!

Student e-mail Accounts
CSI uses Google Eaglemail. Since email is the primary source of written communication with students, all registered students get a college email account. Instructors and various offices send messages to these accounts. Student e-mail can be accessed from http://eaglemail.csi.edu. Students must check their CSI e-mail accounts regularly to avoid missing important messages and deadlines.

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).

This syllabus is subject to change at any time.
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ENGI 220 C01  Dynamics  3 Credit Hours  Spring 2010

#  SECTION  TOPIC  ASSIGNMENT

Week 1  Martin Luther King Day
1  11.1  Introduction  11.1, 12, 17
2  11.2-11.3  Rectilinear motion  11.4, 11.6
Week 2  11.4-11.6  Uniformly accelerated motion  11.3, 40, 53
3  11.9-11.12  Curvilinear motion  11.97, 108, 117
4  11.13-11.14  Curvilinear motion  11.139, 144, 155
Week 3  12.1-12.6  Equations of motion  12.5, 19, 28
5  12.7-12.10  Angular momentum  12.57, 67, 82
     8  Review
Week 4  9  EXAM 1
10  13.1-13.5  Work, energy, power  13.7, 16, 28
11  13.6-13.8  Conservation of energy  13.58, 63, 74
Week 5  President’s Day
12  13.9  Application to space mechanics  13.85, 96, 100
13  13.10-13.11  Impulse and momentum  13.119, 130, 139
15  14.1-14.6  Systems of particles  14.1, 14, 17
16  14.7-14.9  Systems of particles  14.33, 38, 51
Week 7  17  14.10-14.12  Variable systems of particles  14.57, 71, 87
18     EXAM 2
19  15.1-15.4  Translation, rotation  15.1, 11, 18
Week 8  20  15.5-15.6  General plane motion  15.38, 51, 606
21  15.7  Instantaneous center  15.75, 85, 89
22  15.8-15.9  Acceleration in plane motion  15.115, 121, 132
Spring Break
Week 9  23  15.10-15.11  Coriolis acceleration in plane motion  15.151, 163, 168
24  15.12-15.13  Motion about a fixed point  15.184, 198, 205
25  15.14-15.15  Coriolis in 3-D  15.222, 232, 235
Week 10  26  16.1-16.7  Plane motion of rigid bodies  16.1, 20, 27
27  16.1-16.7  Plane motion of rigid bodies  16.47, 56, 66
28     EXAM 3
Week 11  29  16.8  Constrained plane motion  16.78, 85, 102
30  16.8  Constrained plane motion  16.119, 125, 138
31  17.1-17.7  Work and energy  17.4, 20, 24
Week 12  32  17.8-17.10  Impulse and momentum  17.54, 71, 83
33  17.11-17.12  Eccentric impact  17.98, 106, 114
34  18.1-18.4  Momentum and energy in 3-D  18.1, 10, 15
Week 13  35  18.1-18.4  Momentum and energy in 3-D  18.30, 43, 50
36  18.5-18.8  Motion in 3-D  18.55, 68, 71
37  18.5-18.8  Motion in 3-D  18.86, 99, 102
Week 14  38     EXAM 4
40  19.5  Free vibration of rigid bodies  19.38, 47, 59
Week 15  41  19.6  Energy methods  19.69, 79, 84
42  19.7  Forced vibrations  19.100, 106, 118
43  Review

Final Exam: Tuesday 5/11/10 at 10 AM

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