Course Description:
Designed for liberal arts, pre-medical, pre-dental, pre-law, and vocational and technical students. The subject matter is covered with less emphasis on derivations of formulas and more emphasis on the social significance of science and its applications to everyday life. Topics covered are fluids, mechanics, wave motion, and sound.

Statement of Prerequisites:
DVST 0930 or an ACT math score of 23 or better or an appropriate COMPASS exam within the past year.

Goal:
This course uses advanced algebra and trigonometry as the primary tools for problem solving. The course covers basic physics topics in Newtonian mechanics, fluid mechanics, thermal physics, waves and optics. Upon successful completion of the class, each student should, at an introductory level,
1) understand the basic laws of physics and how they apply to scientific situations
2) have the ability to identify, formulate, and solve problems in applied and basic physics
3) have the ability to conduct experiments and to analyze and interpret data
4) have an appreciation for the role of physics in contemporary scientific issues

Outcomes:
Students will have an understanding of basic concepts and be able to work basic physics problems in the following topic areas:

- Units and Vectors
- Motion in One-Dimension
- Motion in Two-Dimensions
- Newton’s Laws of Motion
- Circular Motion and Gravity
- Work and Energy
- Momentum
- Rotational Kinematics
• Rotational Dynamics
• Simple Harmonic Motion
• Mechanical Waves and Sound
• Fluid Mechanics
• Thermodynamics
• Optics

Methodology:
The course will consist of lecture and laboratory sessions.

Lectures:
There are 3 lectures per week (Monday, Tuesday, and Friday). The purpose of the lecture is to introduce new concepts, show how these can be applied to problems, and demonstrate physical phenomena. You should read the assigned text material before (as well as after) the lecture. You should take notes in lecture and review them after lecture.

Laboratory:
There is one two-hour laboratory per week (Wednesday). Students are expected to attend and complete each lab exercise. If you know you will miss a lab due to a serious complication (illness, military duty, etc.), please contact me in advance to make arrangements. A written note will be required explaining your absence. Labs that are missed and for which I have not received a prior notification will result in a zero grade for the lab exercise and cannot be made up. Lab exercises will be equally weighted in the grading process, and the lowest lab grade of the semester will be dropped when the grades are averaged.

Laboratory work is an integral part of the learning process. It is within these sessions that new information may be introduced. The lab work will involve a significant amount of quantitative and qualitative analysis. Information introduced during the labs is considered as testable material for exams.

Problem Assignments:
A problem set and reading assignment will be assigned each week. Problem sets will be due the following Monday at the beginning of the class period, before the lecture starts. Homework handed in after the lecture starts will be considered LATE. Late homework will receive a 10% deduction for each calendar day that it is late.

Suggestion:
Physics is a challenging subject and will require hard work and dedication on your part. Don’t let yourself fall behind! Problems will be assigned at the beginning of the week and you are encouraged to start working on them as soon as the material is covered in class. Please do NOT put the assignment off until the weekend and try to do it the night before.

In my experience, physics is mastered by boldly trying to do what you can and then receiving help at crucial times after you have worked on it a bit. I believe that doing homework and lab experiments are the best ways to learn physics. I will assign the minimum number of problems which I feel gives you adequate experience with the material. I encourage you to do more problems than I assign if you are not fully comfortable with any topic. Sorry, I do not know of any substitute for hard work.

Evaluation Criteria:
Grade is based upon homework, laboratory performance, and exams. A makeup exam may be allowed depending on the reason, student class status to date, and attendance. Typically, makeups will require prior notice and/or a written excuse.
The course is designed to run the entire academic year. Chapters 1-10 will be covered during the fall semester while Chapters 11-16 and 24-26 will be covered in the spring. A grade will be figured for each semester (fall and spring) according to the following breakdown:

- Homework: 30%
- Laboratory: 20%
- Exam 1: 10%
- Exam 2: 10%
- Exam 3: 10%
- Final: 20%

Fall and spring grades will then be averaged to produce an overall grade for the class. This is the grade that will go on a student’s transcript. Letter grade is based on the scale below:

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

Required Text, Readings, & Materials:
2) Graphing scientific calculator (Cell phone calculators are not sufficient).
3) Engineering computation paper.

Class Policy:
You are encouraged to discuss course topics and assignments with one another; however, the homework and lab reports turned in by each student must be that individual’s own work.

Last date to change to Audit status or to withdraw with a “W” grade: November 3rd, 2006 unless it is a full withdrawal from Casper College--which may be done at anytime.

Student rights and responsibilities: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor in order to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take your problem through the appropriate chain of command starting with the department head, then the division chair, and lastly the vice president for academic affairs.

Academic Dishonesty - Cheating & Plagiarism: Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct.

ADA Accommodations Policy: It is the policy of Casper College to provide appropriate accommodations to any student with a documented disability. If you have a need for accommodation in this course, please make an appointment to see me at your earliest convenience
SAFETY: Personal and equipment safety standards will be strictly enforced. It is the individual’s responsibility to develop a safe work attitude.

Tentative Schedule: (subject to revision)
The course is designed to run the entire academic year. Chapters 1-10 will be covered during the fall semester while Chapters 11-16 and 24-26 will be covered in the spring. The following is an approximate schedule for the fall. Adjustments will be made as necessary as the course progresses:

<table>
<thead>
<tr>
<th>Week #</th>
<th>Week of</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Sept. 4th</td>
<td>Measurement</td>
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<tr>
<td>2</td>
<td>Sept. 11th</td>
<td>Vectors &amp; 1-D Motion</td>
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<tr>
<td>3</td>
<td>Sept. 18th</td>
<td>2-D Motion</td>
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<td>4</td>
<td>Sept. 25th</td>
<td>Circular Motion</td>
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<tr>
<td></td>
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<td>Exam #1 (Chapters 1-3)</td>
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<td>5</td>
<td>Oct. 2nd</td>
<td>Newton’s Laws</td>
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<td>6</td>
<td>Oct. 9th</td>
<td>Applying Newton’s Laws</td>
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<td>7</td>
<td>Oct. 16th</td>
<td>Applying Newton’s Laws</td>
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<tr>
<td>8</td>
<td>Oct. 23rd</td>
<td>Circular Motion</td>
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<td>9</td>
<td>Oct. 30th</td>
<td>Circular Motion &amp; Gravitation</td>
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<td>Exam #2 (Chapters 4-6)</td>
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<td>10</td>
<td>Nov. 6th</td>
<td>Work &amp; Energy</td>
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<td>11</td>
<td>Nov. 13th</td>
<td>Momentum</td>
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<td>12</td>
<td>Nov. 20th</td>
<td>Momentum</td>
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<td>13</td>
<td>Nov. 27th</td>
<td>Rotational Motion</td>
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<td>Exam #3 (Chapters 7-9)</td>
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<td>14</td>
<td>Dec. 4th</td>
<td>Rotational Dynamics</td>
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<td>15</td>
<td>Dec. 11th</td>
<td>Rotational Dynamics &amp; Review</td>
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<tr>
<td>16</td>
<td>Dec. 18th</td>
<td>Final exam (Cumulative Chapters 1-10)</td>
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Syllabus subject to change with Notice!

Rev: 8/06