Physics 111N - Fundamentals of Physics I - Section 1
Fall Semester 2009

LECTURES: MTWR 9:10 - 10:10am, CHCB Room 131

INSTRUCTOR: Andrew Ware  Office: CHCB 130  Phone: 243-6221
Email: andrew.ware@umontana.edu
Office Hours: M 9 - 10am, T 3 - 5pm, W 9 - 10am, R 2 -3pm
(and by appointment)

WEBSITE: http://www.physics.umt.edu/phys111/

TEXTBOOKS: Physics - Principles with Applications

PREREQUISITE: Math 112 or 121 or equivalent and (coreq.) Phys 113N.
Prerequisite to this course is a working knowledge of college algebra and trigonometry.

GENERAL ED.: This course satisfies the general education group XI Natural
Science. This course is the first half of a broad overview of the discipline of physics. Through this course you will be exposed to the general principles of mechanics, fluids, oscillations, waves, and thermodynamics.

HOMEWORK: Reading assignment (about 1 chapter per week)
Problem assignments (15-20 problems per week)
Homework problems will not be collected but students will use clickers to answer questions based on the homework. An i-clicker is required for this class.

EXAMS: Six mid-term exams on Thursday evenings from 6-8 pm,
9/17, 10/1, 10/15, 10/29, 11/12, & 12/3
* Will cover two to three chapters per exam.
* Closed book but each student is allowed to bring one 3” x 5” card on which notes can be written.
* Two help sessions will be scheduled before each exam.
One 2-hour final exam (10:10am-12:10pm, Tu 12/14)
* Comprehensive and closed book but each student is allowed to bring six 3” x 5” cards on which notes can be written.

GRADING: 50-minute exams  60 % (5 best, 12 % each)
Homework questions  10 %
Final exam  30 %

[This course can be taken for a traditional letter grade (A,A-,B+,B,B-,C+,C,C-,D,F) only]
Drop/add by CyberBear through 2/10; drop/add by paper form from 2/11-3/6;
drop add by petition after 3/6.
## TENTATIVE COURSE OUTLINE:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Chapters in Text</th>
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| 1    | introduction  
1-D kinematics | Chap. 1  
Chap. 2 |
| 2    | more on 1-D kinematics, vectors, 2-D kinematics | Chap. 2  
Chap. 3 |
| 3    | more on 2-D kinematics, dynamics, Newton’s laws | Chap. 3  
Chap. 4 |
| 4    | applications of Newton’s laws  
introduction to circular motion | Chap. 4  
Chap. 5 |
| 5    | circular motion (kinematics & dynamics), gravitation | Chap. 5 |
| 6    | work and energy, energy conservation, work energy principle | Chap. 6 |
| 7    | momentum, collisions, impulse  
momentum conservation | Chap. 7 |
| 8    | center of mass  
rotational kinematics and dynamics | Chap. 7  
Chap. 8 |
| 9    | more on rotational dynamics  
statics | Chap. 8  
Chap. 9 |
| 10   | Archimedes’ principle, fluid mechanics  
vibrations | Chap. 10  
Chap. 11 |
| 11   | vibrations and waves | Chap. 11 |
| 12   | more on waves  
acoustics, sound intensity | Chap. 11  
Chap. 12 |
| 13   | temperature, the ideal gas law, | Chap. 13 |
| 14   | heat, internal energy | Chap. 14 |
| 15   | introduction to thermodynamics | Chap. 15 |

**FINAL EXAM WEEK**