Physics 205N: College Physics I

Course Information
- Instructor: Dr. David A. Macaluso
- Office: CHCB 119
- Office extension: (406) 243-6641
- Email: david.macaluso@umontana.edu
- Lectures: M, Tu, W, Tr, 12:10 – 1:00 PM
- Office Hours: M, Tu, W, 1-2. I am happy to help students and answer questions outside my normally scheduled office hours and I strongly encourage students to seek my assistance whenever necessary. If I am not in my office, I can be reached via email.

Course Description
This course will introduce students to the fundamental concepts of college-level Classical Physics. We will explore Kinematics in 1-D, 2-D, and circular motion, Gravity, Work and Energy, Torque, Momentum (linear and angular), Fluids, Thermodynamics, and begin Electricity and Magnetism. We will also concentrate on developing problem solving skills and strengthening applied mathematics skills. This course will also stress the application of logical methodology to problem solving in an effort to raise awareness of the rigors involved in scientific inquiry and analysis.

Textbook
*College Physics I* – Etkina, Gentile, Van Huevelen
Access to Mastering Physics for online homework

Website
Online homework: http://www.masteringphysics.com
Grades and other materials will be posted on Moodle

Expectations
This is a university-level physics course. The expectations are therefore appropriate for undergraduate students who should all be familiar with the concepts of personal responsibility, accountability, and academic honesty:

*Attendance*
Exams will be based on lectures, in-class discussions, and in-class assignments. In addition, quizzes and i-Clickr lecture questions represent a significant percentage of the course grade. Thus regular attendance, while not mandatory, is vital to student success.

*Prerequisites/Corequisites*
I expect all students to have completed the prerequisite courses (M122 or M151 or equivalent) and to be concurrently enrolled in the co-requisite lab course (PHSX 206N).

*Reading Assignments*
Students are expected to read the assigned material before class. Intermittent quizzes will be given during class that will be based at least partially on the reading. These quizzes will not be demanding, so reading ahead will both prepare you for the upcoming lecture and help assure you earn the “low hanging fruit” of reading quizzes.
**Homework Assignments**
Weekly homework assignments make up a large portion of your grade and are the primary tool by which you learn physics and develop your problem solving skills. These assignments usually take 2-5 hours to complete so don’t procrastinate. At UM, one unit represents 3 hours of student work. This is a four unit course, so it is reasonable to expect to put 12 hours per week into the course; four hours in class, and eight hours at home per week.

**Mathematics**
The language of physics is math. In this course we will use algebra, geometry, and trigonometry and you must be comfortable with these to be successful.

**Original Work**
I encourage students to work together and to seek assistance from me whenever necessary. However, work submitted in this class must be the original work of the student. In addition, the majority of your grade will be based on quizzes and exams that test your mastery of the homework problems, so doing the problems on your own will give you the best chance to succeed.

**Grading Policy**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Exams (three @ 10% each)</td>
<td>30%</td>
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<tr>
<td>Cumulative Final Exam</td>
<td>25%</td>
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<tr>
<td>Homework</td>
<td>25%</td>
</tr>
<tr>
<td>Quizzes &amp; i-Clickr Questions</td>
<td>20%</td>
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Grades will be based on the normal letter grade percentage scale (90s = A, 80s = B, etc.). This course can only be taken with the traditional grading option.

**Policies and Procedures**
- The three midterm exams will be held in Urey Lecture Hall on Mondays from 6 - 8 PM (2/23, 3/23, 4/27). You will be given a universal notecard for each exam (notecards will be available on Moodle beforehand).
- The final exam will be held in the normal room (CHCB 131) on Friday, May 15th from 10 AM- noon.
- **Late homework will not be accepted and make up exams will only be given where prior arrangements have been made with me. Otherwise, late homework and missed exams will be scored as a zero.**
- This is a large lecture hall with approximately 100 students, so please:
  - Arrive on time. Lectures will begin promptly at 12:10.
  - Do not start packing your things early - I will (usually) not keep you beyond 1:00.
  - Keep phones silent or off and keep them and tablets/laptops put away during lecture.

**Academic Honesty**
Academic misconduct is subject to penalty by the course instructor and/or disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available at http://life.umt.edu/vpsa/student_conduct.php.

**Students with Disabilities:**
Whenever possible, and in accordance with civil rights laws, The University of Montana will attempt to provide reasonable modifications to students with disabilities who request and require them. Please feel free to setup a time with me to discuss any modifications that may be necessary for this course. For more information, visit the Disability Services for Students website at http://life.umt.edu/dss/.
## Tentative Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Reading</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Syllabus, Introduction to Physics, Begin Mechanics</td>
<td>Ch. 1 (all), Ch. 1 (Sections 1-2)</td>
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<tr>
<td>2</td>
<td>Newtonian Mechanics</td>
<td>Ch. 1 (Section 2)</td>
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<tr>
<td>3</td>
<td>Applying Newton's Laws</td>
<td>Ch. 1 (Section 3)</td>
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<tr>
<td>4</td>
<td>Circular Motion</td>
<td>Ch. 1 (Section 4)</td>
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<tr>
<td>5</td>
<td>Impulse and Linear Momentum</td>
<td>Ch. 1 (Section 5)</td>
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<tr>
<td>6</td>
<td>Work and Energy</td>
<td>Ch. 1 (Section 6)</td>
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<tr>
<td>7</td>
<td>Extended Bodies at Rest</td>
<td>Ch. 1 (Section 7)</td>
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<tr>
<td>8</td>
<td>Rotational Motion</td>
<td>Ch. 1 (Section 8)</td>
</tr>
<tr>
<td>9</td>
<td>Gases</td>
<td>Ch. 2 (Section 9)</td>
</tr>
<tr>
<td>10</td>
<td>Spring Break</td>
<td>Ch. 2 (Section 10)</td>
</tr>
<tr>
<td>11</td>
<td>Static Fluid</td>
<td>Ch. 2 (Section 10)</td>
</tr>
<tr>
<td>12</td>
<td>Fluids in Motion</td>
<td>Ch. 2 (Section 11)</td>
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<tr>
<td>13</td>
<td>1st Law of Thermodynamics</td>
<td>Ch. 3 (Section 12)</td>
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<tr>
<td>14</td>
<td>2nd Law of Thermodynamics</td>
<td>Ch. 3 (Section 13)</td>
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<tr>
<td>15</td>
<td>Electric Charge, Force, and Energy</td>
<td>Ch. 4 (Section 14)</td>
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<tr>
<td>16</td>
<td>The Electric Field</td>
<td>Ch. 4 (Section 15)</td>
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### Registering for Mastering Physics

1. Go to [www.masteringphysics.com](http://www.masteringphysics.com)
2. Click the STUDENT link under REGISTER

*If you purchased an access code*

3. Click yes, I have an access code and accept the licensing agreement
4. Create a User Name and Login
5. Enter your Mastering Physics access code
6. Complete the registration

*If you have not purchased an access code*

3. Click the button for no, I need to purchase online access now
4. Choose the course text
5. Decide if you want the etext or not
6. Login to Mastering Physics
7. Join the course using the Course ID given in class