121-122-123 Courses

The PHYS 121-122-123 introductory physics sequence is targeted for students in physical sciences and engineering. Upon successful completion, students should be able to develop calculus-based models to describe the physical world and apply them to other fields of science and everyday phenomena. Each course consists of three major components: lecture laboratory, and tutorial.

<table>
<thead>
<tr>
<th>Course/Section</th>
<th>Instructor</th>
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</thead>
<tbody>
<tr>
<td>Physics 121 A</td>
<td>Marjorie Olmstead</td>
</tr>
<tr>
<td>Physics 121 B</td>
<td>Armita Nourmohammad</td>
</tr>
<tr>
<td>Physics 121 C</td>
<td>Jason Detwiler</td>
</tr>
<tr>
<td>Physics 122 A</td>
<td>Paul Wiggins</td>
</tr>
<tr>
<td>Physics 122 B</td>
<td>Aurel Bulgac</td>
</tr>
<tr>
<td>Physics 122 C</td>
<td>Amal al-Wahish</td>
</tr>
<tr>
<td>Physics 123 A</td>
<td>Shih-Chieh Hsu</td>
</tr>
<tr>
<td>Physics 123 B</td>
<td>Arka Majumdar</td>
</tr>
</tbody>
</table>

PHYS 121: Mechanics

- **Prerequisites:**
  - MATH 124 or MATH 134, either or which may be taken concurrently

- **Contents:**
  - One dimensional motion
  - Momentum
  - Energy
  - Motion in two or more dimensions
  - Rotational motion
  - Gravity

PHYS 122: Electromagnetism

- **Prerequisites:**
  - PHYS 121
  - MATH 125 or MATH 134, either or which may be taken concurrently

- **Recommendations:** a minimum grade of 1.7 in PHYS 121

- **Contents:**
  - Electric and magnetic interactions
  - Electric circuits
Electromagnetic waves

PHYS 123: Waves, Light, and Heat

- **Prerequisites:**
  - PHYS 122
  - MATH 126 or MATH 135, either or which may be taken concurrently

- **Recommendations:** a minimum grade of 1.7 in PHYS 121

- **Contents:**
  - Simple harmonic rotation
  - Wave propagation
  - Wave interference and diffraction
  - Optics
  - Heat transfer
  - Converting heat to work

**Grading Standard**

A student who understands some of the material very well but needs some improvement in the remaining material should get a grade of about 3.0.

**Course Material**

You need to purchase the following items:

- The Tutorial Coursepack
  - Only available from the University Bookstore.
  - This will be used to fill in your tutorial work and tutorial homework, so you cannot use a used one.

- Access code for MyLab and Mastering
  - See purchasing options below

- Textbook: *Principles & Practice of Physics, 1st edition by Mazur*
  - See purchasing options below

**Purchasing Options**

**UNIVERSITY BOOKSTORE OPTIONS**

If you purchase the textbook from the University Bookstore, the access code is included.

You have the following four purchasing options that include both textbook and the access code from the University Bookstore. Choose the one that best fits your need and budget. The 2-year access can be used for all the courses in the series, so you will not need to purchase access again.

<table>
<thead>
<tr>
<th>Option</th>
<th>Access Duration</th>
<th>eText</th>
<th>Hardcopy Text</th>
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<tr>
<td>A (Bookstore)</td>
<td>1 quarter</td>
<td>√</td>
<td>Loose leaf</td>
</tr>
<tr>
<td>B (Bookstore)</td>
<td>2 years</td>
<td>√</td>
<td>Loose leaf</td>
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<tr>
<td>C (Bookstore)</td>
<td>2 years</td>
<td>√</td>
<td>Hardcover</td>
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The options labelled A through D above, correspond to the following descriptions at the University Bookstore.

A. 3 P/S Phys 121 Only Loose Leaf Principles & Practice Of Physics (Custom) W/ Modified Masteringphysics
B. 3 P/S Loose Leaf Principles & Practice Of Physics W/ Modified Masteringphysics
C. 3 P/S Principles & Practice Of Physics W/ Modified Masteringphysics
D. Mastering Access w/eBook for Principles & Practices of Physics - Multi Term

Note that the order of the options shown above may be different from those shown at the University Bookstore.

**ALTERNATIVE OPTIONS**

If you do not purchase the textbook from the University Bookstore, you can purchase the access code online.

During the steps in the *access to the online homework system* instructions you will be given the following two choices to purchase directly from Pearson. Choose the one that fits your need and budget. Both choices can be used for all the courses in the series, so you will not need to purchase access again.

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<th>Hardcopy Text</th>
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<td>E (Pearson)</td>
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<td>No</td>
</tr>
<tr>
<td>F (Pearson)</td>
<td>2 years</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

You need a textbook for this course, so if you choose option F you need to obtain a textbook elsewhere. Note that there is one hardcover textbook with a white cover titled "Principles and Practice of Physics" and another with a black cover titled "Principles and Practice of Physics". If you do not purchase the textbook from the University Bookstore or Pearson, you might be missing the black copy, which includes the end-of chapter problems. But you have access to many of these problems through MyLab and Mastering.

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