2018-2019

Introductory Physics 2 (a calculus based module)
Category: Physics
Code: IS 129
Level: 4
Credits: 15

Teaching Pattern

<table>
<thead>
<tr>
<th></th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
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<tbody>
<tr>
<td>Lecture</td>
<td>3 x 1.5hrs</td>
<td>4 x 1.5hrs</td>
<td>4 x 1.5hrs</td>
<td>2 x 1.5hrs</td>
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<tr>
<td>Workshop</td>
<td>1 x 2 hrs</td>
<td>2 x 2hrs</td>
<td>2 x 2hrs</td>
<td>1 x 2hrs</td>
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<tr>
<td>Laboratory</td>
<td>1 x 3hrs</td>
<td>2 x 3hrs</td>
<td>2 x 3hrs</td>
<td>1 x 3hrs</td>
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<tr>
<td>Quiz/Exam</td>
<td>1</td>
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*you will be expected to do approximately 100 hours of independent study over the 4 weeks.

All Physics must pay a **lab fee of £200 per session** which pays for your use of the lab equipment and your custom-made Physics textbook.

Outline

This calculus-based module will provide a firm foundation in physical concepts and principles, covering electricity and magnetism, light, geometric optics, interference, wave-particle duality, atomic and nuclear physics.

Applications of physical concepts will be stressed, particularly those related to biological and medical phenomena as well as those forming the basis of much of modern technology. You gain further insight into the physics taught by carrying out a series of laboratory experiments and learning how to analyse and interpret the data.

Additional Requirement

This is an intensive module requiring good mathematical skills, including knowledge of differential and integral calculus of functions with one variable (at the level of Math 2A and 2B). If you are unsure about whether or not you are ready to take the Introductory Physics modules, we recommend that you attempt the online Diagnostic test for physics applicants. Try solving these problems to check that your mathematics meets the requirements for this module. The problems require no knowledge of Physics, though they are typical of mathematical manipulations used in solving Physics problems. You can check your solutions after completing them. If you are currently at university, you may also want to speak to your local study abroad advisor. Further information can be found under the module directory on our website.

Learning Outcomes

By the end of the course a successful student should:
• have a basic knowledge of the physics topics covered in the course
• be able to solve physics problems at the appropriate level which requires use of this knowledge
• be able to demonstrate familiarity with simple scientific equipment, make accurate measurements, keep records of observations, analyse and interpret data and write scientific reports on experiments.

**Indicative Reading List**

Students will be provided with the customized text book, the cost of which is included in the lab fee. Students are also provided with a Casio FX calculator, the cost of which is included in the lab fee.

**Contacts**

<table>
<thead>
<tr>
<th>Dr Jackie Grant</th>
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<tbody>
<tr>
<td>Prof Mark Hindmarsh</td>
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