**PHYSICS - Sample 1st year schedule**

<table>
<thead>
<tr>
<th>Fall: 15 hours</th>
<th>Spring: 15 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-Year Seminar-3</td>
<td>ENGL 2030-3</td>
</tr>
<tr>
<td>ENGL 1020-3</td>
<td>MATH 2411-4</td>
</tr>
<tr>
<td>MATH 1401-4</td>
<td>PHYS 2331-4</td>
</tr>
<tr>
<td>PHYS 2311-4</td>
<td>PHYS 2341-1</td>
</tr>
<tr>
<td>PHYS2321-1</td>
<td>PHIL 1012</td>
</tr>
</tbody>
</table>

*Note:* Many students interested in the physics major are still completing math requirements prerequisite to calculus and the general physics sequence. These students are encouraged to take the course: PHYS 1332-3 *Explorations in Physics: The Physics of Crime.* This course will provide good preparation for the rigorous sequence of study that follows in the physics major. Math requirements are algebra and trigonometry. We also recommend, but do not require, that students take calculus (MATH 1404-4) *before* taking Phys 2311.

**DEPARTMENT HIGHLIGHTS:**

The B.S. in Physics has 3 options:
- Applied
- Medical Physics
- Pure Physics

- A major feature of the student experience in the UCDHSC Physics program is the opportunity to participate in research. Nearly every physics major works on research projects.
- Special initiatives such as the Auraria Emerging Technologies Prototyping Lab and the new 38th and York site scale up the number of student opportunities by an order of magnitude. An effort is underway to develop a well-recognized undergraduate track in *biophysics* and *medical physics* including instrumentation design.

The UCDHSC, Downtown Denver Campus, Physics department collaborates with multiple departments at the Health Sciences Center Campus, with Metropolitan State College and with the Community College of Denver.

**CAREER PATHS:**

What do physics graduates do?
- Graduate school
- Teach in secondary schools
- Work in government labs (e.g. NIST, NREL, NASA)
Work in industry: research/development, engineering design, engineering sales

UCD Career Center at [http://www.cudenver.edu/Student+Life/Career+Center/default.htm](http://www.cudenver.edu/Student+Life/Career+Center/default.htm)
UCDHSC Physics Program

Biophysics and Medical Physics Track

Discover the exciting applications of physics to the understanding of biological systems and the improvement of health care!

We are developing curriculum around the following topics:

- Calculus-based physics with biomedical applications
- Oscillations, signals & images in medical diagnostics
- Physics of the body
- Biophysics of the cell
- Radiation medical physics
- Electrophysiology
- Topics in scientific & medical instrumentation

Undergraduate students are active in several research areas, such as:

- Laser light scattering to detect cancer
- Dynamical modeling of tissue
- Electrical impedance spectroscopy of tissue
- Liposome encapsulation of quantum dots
- Models of the neurological control of animal gaits
- Multicellular dynamics in Dictyostelium discoideum
- Low-cost medical instrumentation for developing countries

Advanced instruments include:

- Scanning laser confocal microscope
- Patch-clamp apparatus
- Home-built cell flow cytometer (in preparation)

Career paths:

- Medical school
- Medical physics (radiation therapy and radiology)
- Industry jobs & entrepreneurship in biomedical instrumentation
- Graduate school in bioengineering
- Graduate school in biophysics and physiology

For further information, please contact:

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