• Every one of you has the capability to graduate with a bachelor of science in physics.

• Every one of you is welcome, regardless of other identities you hold in addition to that of physics student.

• Every one of you may access campus resources to smooth your path through UW and help you transition to life beyond UW.
Physics explains how the universe works
So you think you want to major in physics ...

Did you ever seriously consider majoring in engineering?

- Yes, I was accepted by engineering, but switched to (or double majored in) physics.
- Yes, I applied multiple times to engineering but did not get in.
- Yes, but I was not accepted into the engineering major of my choice.
- Yes, but I never applied to engineering - I decided I liked physics better (or I got in and then switched).
- No.

Since 2011:
- 49% PreSci
- 37% PreEngr
- 12% Other

Cohort: Physics majors who applied to graduate in 2017-18
Why major in physics?

• Reasons that tend not to work out well ...
  • Because you decided to do so in middle school
  • Because engineering turned you down
  • Because mom and dad said to

• GOOD reasons
  • Because you REALLY want to WHY the world works
  • Because the list of courses you REALLY want to take at UW gets a physics degree (or at least close to one)
  • Because you checked out a number of other options, and you like physics the best

UW offers 579 degree options across 306 programs
What comes next?

- You can take any job where they want you to solve complex problems.
- You can attend any graduate program that builds on a physics base.
Who hires physics bachelor’s?

- Washington Employers that recently hired new physics bachelor recipients
  
  [https://www.aip.org/statistics/washington](https://www.aip.org/statistics/washington)

- Amazon
- Areva
- Bainbridge Parks & Recreation
- Battelle
- Best in Class Education Center
- Blue Box Group
- Bombsheller
- Bruker Elemental
- Cascade Gasket, Inc.
- Chipton Ross
- Corvus and Columba LLC
- David Evans and Associates, Inc.
- Det Norske Veritas
- Device Inside, Inc.
- Eagle Harbor Technologies, Inc.
- Electroimpact
- Exotic Metals Forming Company
- Financial Partners, Inc.
- Flexasoft
- Google
- Gravity Jack, Inc.
- HopeSource
- Hewlitt Packard
- Intentional Software
- L&S Engineering
- Lockheed Martin
- Logos Bible Software
- Marchex, Inc.
- Micro Encoder, Inc.
- Microsoft
- Milliman
- NAVSEA
- NW Medical Physics Ctr
- Octapharma Plasma, Inc.
- PNNL
- Pellego
- Physio-Control
- Procure Treatment Centers
- PSC Biotech
- Puget Sound Naval Shipyards
- RAFI USA
- Randstad
- Red Head Steering Gears
- Schneider Electric
- Schweitzer Engineering Labs.
- Seattle Children's Research Inst.
- Space-X
- Tableau Software
- TecAce Software Limited
- Telect, Inc.
- TigerStop
- US Navy
- University of Washington
- Woodruff Scientific Computing
- X2 Biosystems
- Zulily
Common Job Titles for Physics B.S.

These job titles were obtained from surveys of physics bachelor’s recipients from the classes of 2009 and 2010, conducted by the American Institute of Physics Statistical Research Center. They are not exhaustive or exclusive.

<table>
<thead>
<tr>
<th>Computer Hardware &amp; Software</th>
<th>Engineering</th>
<th>Research &amp; Technical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst</td>
<td>Application Engineer</td>
<td>Accelerator Operator</td>
</tr>
<tr>
<td>IT Consultant</td>
<td>Associate Engineer</td>
<td>Lab Assistant</td>
</tr>
<tr>
<td>Programmer</td>
<td>Design Engineer</td>
<td>Lab Technician</td>
</tr>
<tr>
<td>Software Engineer</td>
<td>Development Engineer</td>
<td>Physical Sciences Technician</td>
</tr>
<tr>
<td>Systems Analyst</td>
<td>Electrical Engineer</td>
<td>Research Assistant</td>
</tr>
<tr>
<td>Technical Support Staff</td>
<td>Engineering Technician</td>
<td>Research Associate</td>
</tr>
<tr>
<td>Web Developer</td>
<td>Field Engineer</td>
<td>Research Technician</td>
</tr>
<tr>
<td></td>
<td>General Engineer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Laser Engineer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manufacturing Engineer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manufacturing Technician</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Optical Engineer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Process Engineer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Process Technician</td>
<td></td>
</tr>
</tbody>
</table>

Education

- High School Physics Teacher
- High School Science Teacher
- Middle School Science Teacher
Common Physics Core – taken by all majors*

• 5-quarter overview of physics
  • Motion; Electricity & Magnetism; Waves; Thermal Physics; Quantum Physics
• Key tools for doing physics
  • Mathematical tools
  • Electronics lab
  • Overview of physics research
• Common sequence for applying those tools
  • Advanced Electricity and Magnetism
• At least 4 quarters of math
  • One year of Calculus
  • Selections from Linear Algebra, Differential Equations, Vector Calculus, Partial Diff. Eqn, Complex Analysis

* Completing most of the core gets you a minor in physics
UW Physics Major Options

• **Comprehensive**
  • Graduate school in physics or astronomy
  • Full range of physics and math

• **Applied**
  • Technical job at B.S. level or M.S. in engineering
  • More flexibility in electives

• **Teaching**
  • Communicate science to HS or general audience
  • Physics by Inquiry sequence

• **Biological**
  • Medical school or grad school in biophysics
  • 7 quarters of biology and chemistry in addition to physics core
# Physics Option Requirements

<table>
<thead>
<tr>
<th></th>
<th>Comprehensive (+38-41 cr)</th>
<th>Applied (+34-39 cr)</th>
<th>Teaching (+38-41 cr)</th>
<th>Biological (+51-55 cr)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Math</strong></td>
<td>Math Phys II + Another adv. math</td>
<td>Matlab or Python + +2 adv. math</td>
<td>Math Phys II + Another adv. math</td>
<td>Math Phys II</td>
</tr>
<tr>
<td><strong>32x</strong></td>
<td>Relativity &amp; Particles, Quantum Mechanics; 3 of E&amp;M, QM, Astro, Classical Mech, Stat Mech</td>
<td>One from “call me a physicist” list</td>
<td>Relativity &amp; Particles, Quantum Mechanics; 1 more “call me a physicist”</td>
<td>Quantum Mechanics Statistical Physics 1 more “call me a physicist”</td>
</tr>
<tr>
<td><strong>Lab</strong></td>
<td>Two advanced labs</td>
<td>Data Analysis lab Two advanced labs</td>
<td>One advanced lab</td>
<td>(in bio/chem)</td>
</tr>
<tr>
<td><strong>Capstone</strong></td>
<td>Research or Seminar</td>
<td>Research, internship or Seminar</td>
<td>Teaching practicum</td>
<td>bio-related research</td>
</tr>
<tr>
<td><strong>UD Elect</strong></td>
<td>2 additional Phys/Cognate Class</td>
<td>3 additional Phys/Cognate (may include 1 lab; 1 intro sci)</td>
<td>Sequence for future teachers</td>
<td>Biophysics</td>
</tr>
<tr>
<td><strong>Other Sci</strong></td>
<td></td>
<td></td>
<td></td>
<td>1 year intro chemistry 2 qtrs. Intro biology 2 additional bio/chem</td>
</tr>
</tbody>
</table>
Physics Minor

<table>
<thead>
<tr>
<th>Core</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Motion, Electricity &amp; Magnetism, Oscillations &amp; Waves, Thermal Physics, Quantum Physics</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specialization (Pick 1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics Education</td>
<td>Physics by Inquiry Series</td>
</tr>
<tr>
<td>Experimental Physics</td>
<td>Intro Laboratory Analysis</td>
</tr>
<tr>
<td></td>
<td>Electronics Lab</td>
</tr>
<tr>
<td></td>
<td>Additional Advanced Lab</td>
</tr>
<tr>
<td>Mathematical Physics</td>
<td>Math Physics I and II: Phys 227, 228</td>
</tr>
<tr>
<td></td>
<td>Either Electricity &amp; Magnetism (321) or Quantum Mechanics (324)</td>
</tr>
</tbody>
</table>
Physics Student Services: C139/C141

• Staff Advisors
  • Margot Nims
    • All undergraduate issues
  • Catherine Provost
    • All graduate issues
    • Grad school-related UG issues

• Faculty Advisor
  • Prof. Marjorie Olmstead
    • advice from a faculty member
    • petition admission to major
    • waivers and substitutions; transfer credit equivalency

• Program Assistant
  • Paula Newcomer