• 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 explores how the universe works
Learning Physics at UW

- Largest undergraduate program in the country (207 graduates last year)
  Lectures are large, but have breakout sessions in 100- and 300-level courses and in all lab courses

- Most UG do some sort of research
  > 150 students/(pre-pandemic) year in physics dept
  70% of recent grads did for-credit research/project

- Society of Physics Students provides community

SPS 2019 Trip to LIGO

Intro Tutorial

UG Collaborate on Research

Advanced Lab
Getting Started – Pick the right 100-level route for you

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Requirement</th>
<th>Starts</th>
<th>Students per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 10x</td>
<td>Conceptual Physics</td>
<td>Algebra only</td>
<td>AUT</td>
<td>20 stud/yr</td>
</tr>
<tr>
<td>PHYS 11x</td>
<td>Physics for Life Sciences</td>
<td>Pre-calculus, algebra based</td>
<td>every qtr</td>
<td>1100 stud/yr</td>
</tr>
<tr>
<td>PHYS 12x</td>
<td>Physics for Phys. Sci &amp; Engr.</td>
<td>Calculus co-requisite</td>
<td>every qtr</td>
<td>1300 stud/yr</td>
</tr>
<tr>
<td>PHYS 14x</td>
<td>Honors Physics</td>
<td>Calculus I pre-requisite</td>
<td>AUT</td>
<td>50 stud/yr</td>
</tr>
</tbody>
</table>

No HS Phys No Pre-Calc

Autumn: Math 120 + Phys 101, Then Winter Math 124 (optional PHYS 102), Spring Phys 121

No HS Phys Math 124 ready

Start Calculus First, then Phys 121 Phys 101 or Phys 104 optional

Yes HS Phys Math 124 ready

OK to take Phys 121/Math 124 together Many start calculus first or take Phys 104 with Phys 121

Yes or No HS Phys Yes HS Calc

Phys 121 + Next Math

Yes HS Phys Yes HS Calc

Phys 141 + Next Math
UW Physics Degree 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, grad school in biophysics, biomed industry
  • 7 quarters of biology and chemistry in addition to physics core

https://phys.washington.edu/declaring-major
Why major in physics?

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

• **Reasons that tend not to work out well ...**
  • Because you decided to do so in middle school
  • Because engineering turned you down
  • Because family or friends told you to

UW offers over 200 undergraduate degree options, and that is before you start to mix and match
Thirty different departments count introductory physics as a degree requirement – take time to explore!
Physics is Capacity-Constrained

WHY?

• For the past 5 years, we have had the largest undergraduate program in the country
  • Two years as became capacity constrained, we graduated > 200 bachelors
    (only 5 schools in the country graduate ≥ 100)

• Ten years earlier
  • we graduated 57 physics bachelors in a single degree track.
  • we had 4.5 more tenure-track faculty FTE than
  • we could fit our required 300-level courses in an 80-seat lecture hall

• Choice: limit the number of majors or decrease the requirements to graduate
  • Bottlenecks: Advanced Laboratory and Capstone Opportunities

GOING FORWARD

• We aim to admit to the major all students who truly want to be physics majors and who
  have the skill and knowledge base to succeed in the major.
• In the past two years, we admitted 75-80% of applicants each cycle.
What does it take to be a physics major?

• Interest –
  • Keen to learn about how and why matter interacts
  • Enjoy “mathematization” of events and processes, and using the results to predict the future
  • Proactive participation in your own learning
  • Desire to pursue a career that uses physics knowledge and skills

• Skills –
  • Time management and organization
  • Problem solving
  • Mathematical facility

• Knowledge base –
  • Algebra, Trigonometry, Calculus
  • Introductory physics series
    (mechanics, electricity, magnetism, waves, optics, quanta, heat)
Our Majors are Happy and Satisfied

**Senior Exit Survey:**
Classes of 2020, 2021 and most of 2022

**HOW SATISFIED ARE YOU WITH YOUR CHOICE OF PHYSICS AS A MAJOR?**

- Very Satisfied
- Somewhat Satisfied
- Neutral
- Somewhat Dissatisfied
- Very Dissatisfied

**QUALITY OF THE OVERALL PROGRAM.**

- A: Excellent
- A-/B+: Very Good
- B/B+: Good
- C/C+: Fair
- D/F: Poor
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.

National Data: 1 year post graduation
Classes of 2019 & 2020 (18,489 students, 5764 surveys returned)
from aip.org/statistics

- 46% Employed
- 29% Phys/Astro grad school
- 10% Engineering grad school
- 9% Other schooling
- 6% Unemployed

www.spsnational.org/careerstoolbox
gradschoolshopper.com
Immediate Plans After Physics B.S. ...

Classes of 2021 and 2022 combined (386 stud)

UW Data: After graduation, what is the probability that any of these choices will be your main activity?

- Relax/Travel
- NGO/service
- Military
- Teaching certification
- Professional school
- Grad school in engr/data science
- Grad school in cognate science
- Grad school in physics
- Work full time

FRACTION OF SENIORS

FRACTION OF SENIORS

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Typical Job Titles/Salaries 1 yr Post B.S.

Data from American Institute of Physics (aip.org/statistics)
## Who hires physics bachelors in Washington State?


<table>
<thead>
<tr>
<th>Company Name</th>
<th>Company Name</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bluetooth SIG, Inc.</td>
<td>Access Laser Company</td>
<td>AeroTEC</td>
</tr>
<tr>
<td>Aerotek</td>
<td>EASI</td>
<td>Lumotive</td>
</tr>
<tr>
<td>Allen Inst for Brain Science</td>
<td>Fatigue Technology Inc.</td>
<td>Manufacturing Technology</td>
</tr>
<tr>
<td>Alphabet inc.</td>
<td>Filter, LLC</td>
<td>MAQ Software</td>
</tr>
<tr>
<td>ALS Global</td>
<td>Fred Hutchinson Cancer Res Ctr</td>
<td>Microsoft</td>
</tr>
<tr>
<td>Amazon</td>
<td>Fremont Analytical Inc.</td>
<td>Mighty AI</td>
</tr>
<tr>
<td>Amazon Web Services</td>
<td>Garco Construction</td>
<td>MRV Systems, LLC</td>
</tr>
<tr>
<td>Applied Motion Systems</td>
<td>Google</td>
<td>nLIGHT, Inc.</td>
</tr>
<tr>
<td>Assemble Inc</td>
<td>IHME</td>
<td>Outreach.io</td>
</tr>
<tr>
<td>BTownWeb</td>
<td>Intellectual Ventures</td>
<td>Ozone International</td>
</tr>
<tr>
<td>Casaba Security LLC</td>
<td>Intellectual Ventures</td>
<td>Professional Credit Service</td>
</tr>
<tr>
<td>CB Technologies Inc.</td>
<td>Jacobs</td>
<td>Protingent, Inc.</td>
</tr>
<tr>
<td>CDC/NIOSH</td>
<td>Key Technology, Inc</td>
<td>Puget Sound Energy</td>
</tr>
<tr>
<td>Commerce Architects</td>
<td>Launch Consulting LLC</td>
<td></td>
</tr>
<tr>
<td>Department of Defense</td>
<td>Lease Crutcher Lewis</td>
<td></td>
</tr>
<tr>
<td>Eagle Harbor Technologies</td>
<td>LevelTen Energy</td>
<td></td>
</tr>
</tbody>
</table>
Occupation vs. College Degree – you have OPTIONS


Me!

Computer Science/Math
Engineering
Biological Sciences
Psychology
Social Sciences
Business
Education
Literature
History +
Arts
Communications
Other

Physics
Chemistry
Earth Sciences
Astronomy

Life-Sciences
Environment
Agriculture

Physical science
Biological, environmental, and agricultural sciences

ENGR
Science- and engineering-related
Computers, mathematics, and statistics
Liberal arts
Psychology
Multidisciplinary
Social sciences
V&P Arts
Com mu n.

Business

Education
Arts
Service
Sales
Education

Business

Social Services
Legal

Office Support

Agriculture
Construction
Production

Physical sciences

Mainstream Lifestyle

Science-related

Social Services

Legal

Agriculture
Construction
We look forward to your joining us!!

Graduation 2019

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Advanced Lab

To talk with us or get your questions answered: https://phys.washington.edu/advising-student-services. physadvs@uw.edu

SPS Annual Trip to LIGO