MINOR IN BIOPHYSICS

Why is our world the way it is? How can we understand and explain what we observe around us, from the smallest sub-atomic particles to the largest galaxies? How can we apply this understanding to manipulate our world? Studying physics gives insight into the fundamental laws of nature.

But an education in physics gives so much more. The rigorous training our students receive in analyzing and understanding complex problems is valuable in many future careers. While many of our graduates have established careers in universities and in the high tech sector as research and development scientists, others have used their physics degrees as a springboard to careers in finance, administration, medicine, management or education. The range of career opportunities is perhaps wider than for any other students with a science education.

Physicists have revolutionized the way we live our lives, with groundbreaking discoveries and new technologies, transferable to other fields such as biology or finance. Our professors and graduates are an important part of this chain. Many of our professors have also been recognized for their teaching and are seen as world-class researchers in their fields of expertise.

The research conducted by the professors in the Department of Physics is concentrated in several sub-specialties, including the physics of biological and complex systems, condensed matter physics, photonics and the physics of geomaterials. Depending upon your choice of program, you have the opportunity to take courses and participate in research projects in these specialized areas.

In addition to the Honours BSc in Physics, we offer three other Honours BSc programs. The first is in physics-mathematics, which provides enriched mathematics training within a physics program. The second is the option in photonics, which gives students a solid training in physics and a more applied and industry-related training in photonics. The third is the option in biological physics, which teaches students to apply a rigorous education in physics to various areas of life sciences. We also offer a Major in Physics that can form the core of an Honours BSc when combined with a major or a minor in another discipline in the Faculty of Science, or in another faculty. Finally, starting in fall 2016, we will offer a five-year integrated program in physics (BSc) and electrical engineering (BASc), jointly with the School of Electrical Engineering and Computer Science (SEECS). This unique program will offer a full education in physics and electrical engineering. Graduates will be sought after by industry and academia, as they will have the capacity to develop technology from a basic physics idea to the final product.

The Department of Physics also has strong graduate programs, leading to an MSc or PhD. They give students the opportunity to work on cutting edge science in a research group led by one or more department professors.

This program is offered in English and in French.

Program Requirements

The table below includes only discipline-specific courses. Please refer to the Academic Regulations (https://www.uottawa.ca/about-us/policies-regulations/academic-regulations/b-2-program-studies/) for information on including a minor to your degree.

This program cannot be combined with the following programs: Honours BSc in Physics, Honours BSc in Physics-Mathematics, Honours BSc in Physics with Option in Biological Physics, Honours BSc in Physics with Option in Photonics and BSc with Major in Physics.

Requirements for this program have been modified. Please consult the 2025-2026 calendars (http://catalogue.uottawa.ca/en/archives/) for the previous requirements.

Compulsory courses at the 1000 level		
BIO 1141	Introduction to Cell and Molecular Biology	3 Units
CHM 1311	Principles of Chemistry	3 Units
Compulsory course at the 2000 level		
PHY 2325	Physics in Biology	3 Units
Compulsory courses at the 3000 level		
BIO 3153	Cell Biology	3 Units
PHY 3325	Introduction to Molecular Biophysics	3 Units
Compulsory course at the 4000 level		
PHY 4322	Biological Physics	3 Units
Optional courses		
One option from the following:		6 Units
Option 1 :		
MAT 1330	Calculus for the Life Sciences I	
MAT 1332	Calculus for the Life Sciences II	
Option 2:		
MAT 1320	Calculus I	
MAT 1322	Calculus II	
One option from the following:		6 Units
Option 1:		
PHY 1121	Fundamentals of Physics I	
PHY 1122	Fundamentals of Physics II	
Option 2:		
PHY 1321	Principles of Physics I [1]	
PHY 1322	Principles of Physics II	
3 optional course units in physics (PHY) at the 2000, 3000 or 4000 level [2]		3 Units
Total:		**33 Units**

Note(s)

1. PHY 1321 may be replaced by PHY 1331.
2. MAT 1341 is a prerequisite to some second year physics courses; check the university calendar. Students interested in applying for graduate studies in biological physics in the Department of Physics at uOttawa are recommended to take some of the following courses: PHY 2361, PHY 3350, PHY 3355, MAT 2324, MAT 2384. For more details, the interested student should consult with the potential research supervisor of the Department of Physics.