



## Your Technical Hiring Solution

Physics is concerned with the fundamental studies of the interaction of matter, from the sub-atomic to the astronomic. Students study the basic building blocks of matter and how the four fundamental forces of nature explain the universe. Students use computer technology to investigate probes such as nuclear magnetic resonance, X-ray and nuclear scattering. The study of molecular, nuclear, and condensed matter physics, using principles of quantum mechanics and thermodynamics, is central in the physics curriculum at Guelph.

## University of Guelph Advantage

The University of Guelph Physics department has an international reputation for excellence in research. Grants awarded to faculty have been higher than the national average for over a decade.

Five Faculty members have been named Fellows of the Royal Society of Canada.

Our co-op process responds to your needs. Employers can post, interview and hire throughout the semester and our students are available for 4 or 8 month work terms. The **Experience Guelph** hiring tool makes hiring Guelph co-op students easy!

## Student Strengths

- Excellent communication and problem-solving abilities
- By the first work term students are competent in basic mechanics and electricity and magnetism, and have scientific programming and desktop computing skills
- As students begin the second and third work terms, they have added wave theory, circuit theory, electronics, and optics to their repertoire
- By their final work term, students are experienced in electromagnetic theory, statistical physics, quantum mechanics, wave propagation and thermodynamics

# Physics Course Sequencing

YEAR	FALL (SEPT-DEC)	WINTER (JAN-APRIL)	SUMMER (MAY-AUG)
<b>ONE</b>	<ul style="list-style-type: none"> <li>GENERAL CHEMISTRY I</li> <li>PROGRAMMING</li> <li>INTEGRATED MATHEMATICS &amp; PHYSICS I</li> <li><u>ONE OF:</u> DISCOVERING BIODIVERSITY <b>OR</b> BIOLOGICAL CONCEPTS OF HEALTH <b>OR</b> INTRODUCTION TO MOLECULAR AND CELLULAR BIOLOGY</li> </ul>	<ul style="list-style-type: none"> <li>GENERAL CHEMISTRY II</li> <li>INTEGRATED MATHEMATICS &amp; PHYSICS II</li> <li>LINEAR ALGEBRA I</li> <li><u>ONE OF:</u> DISCOVERING BIODIVERSITY <b>OR</b> BIOLOGICAL CONCEPTS OF HEALTH <b>OR</b> INTRODUCTION TO MOLECULAR AND CELLULAR BIOLOGY</li> </ul>	<b>OFF</b>
<b>TWO</b>	<ul style="list-style-type: none"> <li>ADVANCED CALCULUS I</li> <li>THERMAL PHYSICS</li> <li>ELECTRICITY AND MAGNETISM I</li> <li>INTRODUCTION TO CO-OPERATIVE EDUCATION</li> <li>APPLIED DIFFERENTIAL EQUATIONS</li> <li>1 LIBERAL EDUCATION ELECTIVE</li> </ul>	<ul style="list-style-type: none"> <li>EXPERIMENTAL TECHNIQUES IN PHYSICS</li> <li>MECHANICS</li> <li>ELECTRICITY AND MAGNETISM II</li> <li>1 ELECTIVE</li> <li><u>ONE OF:</u> INTERMEDIATE PROGRAMMING <b>OR</b> 1 ELECTIVE</li> </ul>	<b>WORK TERM ONE</b>
<b>THREE</b>	<ul style="list-style-type: none"> <li>SCIENCE COMMUNICATION</li> <li>MATHEMATICAL PHYSICS</li> <li>QUANTUM MECHANICS I</li> <li>ADVANCED MECHANICS</li> <li>1 ELECTIVE</li> </ul>	<b>WORK TERM TWO</b>	<b>WORK TERM THREE</b>
<b>FOUR</b>	<ul style="list-style-type: none"> <li>ADVANCED ELECTROMAGNETIC THEORY</li> <li><u>ONE OF:</u> DATA STRUCTURES <b>OR</b> 1 ELECTIVE</li> <li><u>ONE OF:</u> STATISTICAL PHYSICS II <b>OR</b> 1 ELECTIVE</li> <li>2 ELECTIVES</li> </ul>	<ul style="list-style-type: none"> <li>COMPUTATIONAL METHODS IN MATERIALS SCIENCE</li> <li>INTERMEDIATE LABORATORY</li> <li>QUANTUM MECHANICS II</li> <li><u>ONE OF:</u> COMPLEX ANALYSIS <b>OR</b> 1 ELECTIVE</li> <li>OPTICS: FUNDAMENTALS AND APPLICATIONS</li> </ul>	<b>WORK TERM FOUR</b>
<b>FIVE</b>	<b>WORK TERM FIVE</b>	<ul style="list-style-type: none"> <li>ADVANCED PHYSICS LABORATORY</li> <li><u>ONE OF:</u> SUBATOMIC PHYSICS <b>OR</b> 1 ELECTIVE</li> <li><u>ONE OF:</u> SOLID STATE PHYSICS <b>OR</b> 1 ELECTIVE</li> <li>2 ELECTIVES</li> </ul>	

BASED ON THE 2022/23 UNDERGRADUATE CALENDAR

PLEASE SEE THE CURRENT UNDERGRADUATE CALENDAR FOR MORE INFORMATION