



Your Technical Hiring Solution

Nanoscience is an interdisciplinary science focusing on science at the molecular or atomic level. The term “nanoscience” generally refers to materials of 100 nm or smaller. The integration of chemistry and physics at the nanoscale help prepare students to create, control and understand the properties of matter and materials. Nanoscience supports nanotechnology, advanced materials research, efficient energy production and storage. It is also crucial to the development of new materials and devices with a wide range of applications.

The University of Guelph created the first Nanoscience B.Sc. degree program in Canada in 2008. This program is offered jointly by the Departments of Chemistry and Physics and offers students the benefits of research and teaching from both departments. Students use state-of-the-art laboratory equipment such as Atomic Force and Scanning Electron Microscopes as part of their undergraduate program.

University of Guelph Advantage

- The University of Guelph Departments of Chemistry and Physics have national and international reputations for excellence in research and teaching
- This program is the first of its kind in Canada delivering uniquely skilled employees to the labour market

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

- By the first work term students have developed a firm foundation in Chemistry, Physics and Calculus. Students have also had experience in a laboratory working with various types of microscopy.
- By the third and fourth work term, students have a firm understanding of nanoscale properties of materials

Nanoscience Course Sequencing

YEAR	FALL (SEPT-DEC)	WINTER (JAN-APRIL)	SUMMER (MAY-AUG)
ONE	<ul style="list-style-type: none"> • INTRODUCTION TO MOLECULAR & CELLULAR BIOLOGY • GENERAL CHEMISTRY I • INTEGRATED MATHEMATICS & PHYSICS I • INTRODUCTION TO NANOSCIENCE 	<ul style="list-style-type: none"> • <u>ONE OF</u>: DISCOVERING BIODIVERSITY OR BIOLOGICAL CONCEPTS OF HEALTH • GENERAL CHEMISTRY II • INTEGRATED MATHEMATICS & PHYSICS II • LINEAR ALGEBRA I 	OFF
TWO	<ul style="list-style-type: none"> • STRUCTURE AND BONDING • SYNTHESIS AND CHARACTERIZATION OF NANOMATERIALS I • APPLIED DIFFERENTIAL EQUATIONS • ELECTRICITY AND MAGNETISM I • INTRODUCTION TO CO-OPERATIVE EDUCATION • <u>ONE OF</u>: THERMODYNAMICS AND KINETICS OR THERMAL PHYSICS 	<ul style="list-style-type: none"> • STRUCTURE AND SPECTROSCOPY • SYNTHESIS AND CHARACTERIZATION OF NANOMATERIALS II • MECHANICS • 2 ELECTIVES 	WORK TERM ONE
THREE	<ul style="list-style-type: none"> • <u>ONE OF</u>: QUANTUM CHEMISTRY OR QUANTUM MECHANICS I • THIN FILM SCIENCE • NANOLITHOGRAPHIC TECHNIQUES • 2 ELECTIVES 	WORK TERM TWO	WORK TERM THREE
FOUR	<ul style="list-style-type: none"> • CONCEPTS IN QUANTUM COMPUTING • BIOLOGICAL NANOMATERIALS • 3 ELECTIVES 	<ul style="list-style-type: none"> • COMPUTATIONAL METHODS IN MATERIALS SCIENCE • SPECTROSCOPY OF NANOMATERIALS • 3 ELECTIVES 	WORK TERM FOUR
FIVE	WORK TERM FIVE	<ul style="list-style-type: none"> • TOPICS IN NANOMATERIALS • 4 ELECTIVES 	

BASED ON THE 2022/23 UNDERGRADUATE CALENDAR

PLEASE SEE THE CURRENT UNDERGRADUATE CALENDAR FOR MORE INFORMATION