

## OVERVIEW

Depending on the module(s) and basic medical science disciplines included in a student's BMSc degree, the subjects studied can range widely:

- molecular bases of disease
- genome dynamics
- microcirculation and cancer metastasis
- principles of medical imaging and nuclear medicine science
- gross anatomical features of the human body systems
- cellular mechanisms governing normal and pathological processes
- bacterial pathogenesis
- clinical biochemistry
- forensic pathology
- neuropharmacology and cardiovascular pharmacology
- endocrine, gastrointestinal and fetal physiology

### KEY FEATURES OF THE BMSc PROGRAM

#### Flexibility

Choose Basic Medical Science courses of interest and relevance to you.

#### Challenge

Pursue exciting and demanding learning opportunities in the Basic Medical Sciences.

#### Hands-on Experience

Gain valuable hands-on experience in problem-solving and laboratories as well as computer, analytical, applied laboratory, communication, and organizational skills.

#### Interaction between Basic and Clinical Medical Sciences

Learn and understand the interrelationships between basic science and its application in the clinical medical sciences, as discoveries move from the bench to the bedside.

#### Internship Program

Work in career-related placements arranged through the Dean's Office, Faculty of Science.

#### Graduate with two Honors degrees in five years

Combine the Honors BMSc (Honors Specialization in Medical Sciences) and HBA (Honors Business Administration) degrees.

### CAREER OPPORTUNITIES

#### Career Choices

BMSc graduates have the background for careers in specialized areas of:

- Law (bioethics, patent development for biological products)
- Business (biotechnology – marketing, research and development, quality control)
- Government Laboratories (agriculture, marine and environmental sciences)
- Industry (pharmaceutical, biotechnology, biosafety regulation and enforcement)

#### Professional Schools

BMSc students develop an excellent foundation to apply for various professional schools and programs:

- Medicine
- Dentistry
- Education
- Law
- Business
- Pharmacy
- Optometry
- Veterinary Medicine
- Applied Health Sciences

#### Graduate Studies

The BMSc (Honors) degree prepares students for Master of Science or doctoral programs (PhD) in any of the basic medical and biological sciences or for entry into associated fields such as forensic science, molecular genetics, genetic engineering, biomedical engineering, and bioinformatics.

### LOOKING FOR MORE INFORMATION?

To learn more about the BMSc Program, the Basic Medical Science departments, and the modules available, please visit the following websites:

#### Bachelor of Medical Sciences

[www.uwo.ca/bmsc](http://www.uwo.ca/bmsc)

#### Department of Anatomy and Cell Biology

[www.uwo.ca/anatomy](http://www.uwo.ca/anatomy)

#### Department of Biochemistry

[www.biochem.uwo.ca](http://www.biochem.uwo.ca)

#### Department of Medical Biophysics

[www.uwo.ca/biophysics](http://www.uwo.ca/biophysics)

#### Department of Microbiology and Immunology

[www.uwo.ca/mni](http://www.uwo.ca/mni)

#### Department of Pathology

[www.uwo.ca/pathol](http://www.uwo.ca/pathol)

#### Department of Physiology and Pharmacology

[www.schulich.uwo.ca/physpharm](http://www.schulich.uwo.ca/physpharm)

### OTHER LINKS

#### Faculty of Science

[www.uwo.ca/sci](http://www.uwo.ca/sci)

#### Academic Calendar

[www.westerncalendar.uwo.ca](http://www.westerncalendar.uwo.ca)

#### BMSc degree – Admission Criteria and Requirements

[www.uwo.ca/bmsc/admission\\_criteria.html](http://www.uwo.ca/bmsc/admission_criteria.html)

Basic Medical Sciences Undergraduate Education  
Schulich School of Medicine & Dentistry  
Medical Sciences Building – M138  
The University of Western Ontario  
London ON N6A 5C1  
Phone: 519-661-2111 x83169  
Fax: 519-661-3472  
Email: [bmscprogram@uwo.ca](mailto:bmscprogram@uwo.ca)



## BACHELOR OF MEDICAL SCIENCES (BMSc)



The University of  
Western Ontario



# BACHELOR OF MEDICAL SCIENCES (BMSc)

www.uwo.ca/bmsc

## VISION

TO BE THE LEADER IN PROVIDING UNDERGRADUATE EDUCATION IN THE BASIC MEDICAL SCIENCES IN PREPARATION FOR EMPLOYMENT, GRADUATE STUDIES AND PROFESSIONAL SCHOOLS.

## ABOUT BMSc

THE BACHELOR OF MEDICAL SCIENCES (BMSc) DEGREES ARE FOUR-YEAR UNDERGRADUATE DEGREES, OFFERED JOINTLY BY THE FACULTY OF SCIENCE AND THE SCHULICH SCHOOL OF MEDICINE & DENTISTRY, AND ARE DESIGNED FOR STUDENTS INTERESTED IN ADVANCED STUDY IN ONE OR MORE OF THE BASIC MEDICAL SCIENCES.

The Basic Medical Sciences include:

- Anatomy and Cell Biology
- Biochemistry
- Epidemiology and Biostatistics
- Medical Biophysics
- Microbiology and Immunology
- Pathology
- Pharmacology
- Physiology

The Medical Sciences modules are designed to provide an interdisciplinary approach for students wishing a broad education in the basic medical sciences.



## APPLYING FROM HIGH SCHOOL

Students interested in the BMSc Program at Western should apply to the Faculty of Science by selecting either the ES (Science) or ESM (Biological and Medical Sciences) option on the OUAC application. Historically, the ESM entry option has required a higher admission average.

Students register in the Faculty of Science in Years 1 and 2, studying general science. In Years 3 and 4, students register in the Schulich School of Medicine & Dentistry, studying courses primarily from the basic medical science disciplines.

Registration in the BMSc Program begins in Year 2 after completion of a full course load including the following:

### YEAR 1 COURSES:

- Biology
- Chemistry
- Math
- Physics (may be deferred until Year 2)

## ENROLMENT IN THE BMSc PROGRAM IS LIMITED AND COMPETITIVE

Approximately 400 students are admitted to the BMSc Program in each of Years 2 and 3. To be admitted to Year 2, students must achieve the minimum marks in the Year 1 courses listed above and satisfy admission criteria, including an average of 78% in first-year Biology, Chemistry and Math.

To be admitted to Year 3, students must satisfy admission criteria, including an average of 78% in the Year 2 "foundation" courses. Students must be registered in a BMSc degree in Year 3 to advance into Year 4.

## YEAR 2 "FOUNDATION" COURSES INCLUDE:

- Biochemistry
- Cell Biology
- Genetics
- Organic Chemistry
- Scientific Methods in Biology
- Statistics

## THE BMSc DEGREE AND MODULES

BMSc and BMSc Honors degrees must contain one of the following:

- (i) an **Honors Specialization (HSP)** module offered through a Basic Medical Sciences Department. Admission into these modules is competitive due to the limited number of spaces available in labs and Year 4 research projects (*BMSc Honors*),
- (ii) a **Specialization (SPZ)** module offered through a Basic Medical Sciences Department (*BMSc*),
- (iii) two **Major** modules, both of which must be offered through the Basic Medical Sciences Departments (*BMSc* or *BMSc Honors*).

## ADMISSION TO THE BMSc PROGRAM

For more detailed information about applying to Years 2 - 4 refer to: [www.uwo.ca/bmsc/admission\\_to\\_bmsc.html](http://www.uwo.ca/bmsc/admission_to_bmsc.html)

A Major or Minor module, offered by the Basic Medical Science departments, can be taken alone or combined with modules from other Western faculties to earn degrees such as a BSc or BA.

The chart below outlines the modules offered in the Basic Medical Sciences.

MODULES	HSP	SPZ	MAJOR	MINOR
Biochemistry	•	•	•	•
Biochemistry and Cell Biology	•			
Biochemistry of Infection and Immunity	•			
Clinical Biochemistry	•			
Medical Biophysics	•	•	•	•
Medical Cell Biology	•		•	•
Medical Sciences	•	•	•	•
Microbiology and Immunology	•	•	•	•
Pathology and Toxicology	•	•		
Pharmacology	•	•	•	•
Physiology	•	•	•	
Physiology and Pharmacology	•	•		



BACHELOR OF MEDICAL SCIENCES PROGRAM