

BIOMEDICAL TOXICOLOGY (BTOX)

Interdisciplinary Program, Departments of Biomedical Sciences, Chemistry, School of Environmental Sciences, Molecular and Cellular Biology

Major (Honours Program)

Students may enter this major in Semester 1 or any semester thereafter. A student wishing to declare the major may wish to consult the Faculty Advisor. A minimum of 20.00 credits are required for graduation.

Students lacking Grade 12 or 4U Biology, Chemistry or Physics should follow the revised schedule of study for this major found at: https://www.uoguelph.ca/bsc/revised_SS (https://www.uoguelph.ca/bsc/revised_SS/)

Code	Title	Credits
Semester 1		
BIOL*1090	Introduction to Molecular and Cellular Biology	0.50
CHEM*1040	General Chemistry I	0.50
MATH*1080	Elements of Calculus I	0.50
PHYS*1080	Physics for Life Sciences	0.50
0.50 Liberal Education electives		0.50
Semester 2		
BIOL*1080	Biological Concepts of Health	0.50
CHEM*1050	General Chemistry II	0.50
PHYS*1070	Physics for Life Sciences II	0.50
STAT*2040	Statistics I	0.50
0.50 Liberal Education electives		0.50
Semester 3		
BIOC*2580	Introduction to Biochemistry	0.50
MBG*2040	Foundations in Molecular Biology and Genetics	0.50
TOX*2000	Principles of Toxicology	0.50
1.00 elective or Liberal Education electives		1.00
Semester 4		
BIOM*3200	Biomedical Physiology	1.00
CHEM*2480	Analytical Chemistry I	0.50
CHEM*2700	Organic Chemistry I	0.50
0.50 electives or restricted electives		0.50
Semester 5		
BIOC*3560	Structure and Function in Biochemistry	0.50
CHEM*3430	Analytical Chemistry II: Instrumental Analysis	0.50
MCB*2050	Molecular Biology of the Cell	0.50
NUTR*3210	Fundamentals of Nutrition	0.50
0.50 electives or restricted electives		0.50
Semester 6		
BIOM*3090	Principles of Pharmacology	0.50
PATH*3610	Principles of Disease	0.50
TOX*3360	Environmental Chemistry and Toxicology	0.50
BIOM*3040	Medical Embryology	0.75

or MBG*3350	Laboratory Methods in Molecular Biology	
Electives or Restricted Electives to a maximum of 2.75 total credits in this semester		0.50
Semester 7		
NUTR*4510	Toxicology, Nutrition and Food	0.50
TOX*4000	Medical Toxicology	0.50
TOX*4590	Biochemical Toxicology	0.50
TOX*4900	Toxicology Research Project I (or 1.00 Electives or Restricted Electives)	1.00
Semester 8		
ENV*4000	Toxicological Risk Assessment	0.50
TOX*4100	Toxicological Pathology	0.50
TOX*4200	Topics in Toxicology	0.50
1.00 electives or restricted electives		1.00

Restricted Electives

At least 1.50 credits must be completed from the following list of allowable courses.

Note: Students are advised to pay particular attention to pre-requisite requirements when choosing individual courses, and seek advice as needed.

Code	Title	Credits
ANSC*4650	Comparative Immunology	0.50
BIOM*3040	Medical Embryology	0.75
BIOM*4050	Biomedical Aspects of Aging	0.50
BIOM*4070	Biomedical Histology	0.50
BIOM*4090	Pharmacology	0.50
BIOM*4150	Cancer Biology	0.50
CHEM*3750	Organic Chemistry II	0.50
CHEM*3760	Organic Chemistry III	0.50
CHEM*4740	Topics in Bio-Organic Chemistry	0.50
MBG*3040	Molecular Biology of the Gene	0.50
MBG*3350	Laboratory Methods in Molecular Biology	0.75
MBG*4270	DNA Replication, Recombination and Repair	0.50
MCB*4010	Advanced Cell Biology	0.50
MICR*3230	Immunology	0.50
NUTR*4090	Functional Foods and Nutraceuticals	0.50
NUTR*4320	Nutrition and Metabolic Control of Disease	0.50
PATH*3040	Principles of Parasitology	0.50
POPM*3240	Epidemiology	0.50
POPM*4040	Epidemiology of Food-borne Diseases	0.50
STAT*2050	Statistics II	0.50
STAT*3510	Environmental Risk Assessment	0.50
TOX*4900	Toxicology Research Project I	1.00
TOX*4910	Toxicology Research Project II	1.00

Credit Summary

(20.00 Total Credits)

Code	Title	Credits
	First year science credits	4.00
	Required science courses semesters 3 – 8	10.75

Restricted electives	1.50
Liberal Education electives	1.50
Free electives - any approved elective for B.Sc. students	2.25
Total Credits	20

Of the total credits required, students are required to complete 16.00 credits in science of which 2.00 credits must be at the 4000 level and an additional 4.00 credits must be at the 3000 or 4000 level.