

# ANIMAL BIOLOGY (ABIO)

## Department of Animal Biosciences, Ontario Agricultural College

B.Sc. students who wish to declare the specialization may consult the Faculty Advisor, and must apply directly to the Department of Animal Biosciences by the last day of classes in the winter semester.

To be eligible after first year, applicants must have successfully completed at least 4.00 science credits, including the requirements below, in a B.Sc. specialization with a cumulative average of 75% or higher. Applicants in subsequent years will need to meet the same course requirements, and have maintained an average of 75% or higher in their last two semesters.

Code	Title	Credits
BIOL*1090	Introduction to Molecular and Cellular Biology	0.50
CHEM*1040	General Chemistry I	0.50
CHEM*1050	General Chemistry II	0.50
MATH*1080	Elements of Calculus I	0.50
PHYS*1080	Physics for Life Sciences	0.50
BIOL*1050	Biology of Plants & Animals in Managed Ecosystems	0.50
or BIOL*1070	Discovering Biodiversity	
or BIOL*1080	Biological Concepts of Health	
PHYS*1070	Physics for Life Sciences II	0.50
or PHYS*1300	Fundamentals of Physics	

Note that students transferring into the ABIO program will be required to register in additional program specific courses to fulfill degree requirements for completion. Admission will be competitive based on available spaces. All decisions will be made at the end of June.

## Major Requirements (Honours)

This is a major within the degree: Bachelor of Science (<https://calendar.uoguelph.ca/undergraduate-calendar/degree-programs/bachelor-science-bsc/>).

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
<b>Semester 1</b>		
BIOL*1050	Biology of Plants & Animals in Managed Ecosystems	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
<b>Semester 2</b>		
AGR*1350	Animal Production Systems and Industry: Dairy, Poultry and Egg	0.50
BIOL*1090	Introduction to Molecular and Cellular Biology	0.50
CHEM*1050	General Chemistry II	0.50
PHYS*1070	Physics for Life Sciences II	0.50

0.50 electives or restricted electives	0.50
--	------

### Semester 3

AGR*2350	Animal Production Systems and Industry: Beef, Swine and Others	0.50
BIOC*2580	Introduction to Biochemistry	0.50
MBG*2040	Foundations in Molecular Biology and Genetics	0.50
MBG*2400	Fundamentals of Plant and Animal Genetics	0.50

Select 0.50 credits from the following:

STAT*2040	Statistics I <sup>1</sup>	0.50
0.50 electives or restricted electives		0.50

### Semester 4

ANSC*2210	Principles of Animal Care and Welfare	0.50
ANSC*2340	Structure of Farm Animals	0.50
MCB*2050	Molecular Biology of the Cell	0.50
NUTR*3210	Fundamentals of Nutrition	0.50

Select 0.50 credits from the following:

STAT*2040	Statistics I <sup>1</sup>	0.50
0.50 electives or restricted electives		0.50

### Semester 5

ANSC*3080	Agricultural Animal Physiology	0.50
ANSC*3120	Introduction to Animal Nutrition	0.50
1.50 electives or restricted electives		1.50

### Semester 6

ANSC*3040	Animal Reproduction	0.50
ANSC*3270	Animal Disorders	0.50
MBG*3060	Quantitative Genetics	0.50
1.00 electives or restricted electives		1.00

### Semester 7

2.50 electives or restricted electives		2.50
--	--	------

### Semester 8

2.50 electives or restricted electives <sup>2</sup>		2.50
---	--	------

<sup>1</sup> Students have the option to take STAT\*2040 Statistics I in semester 3 or semester 4.

<sup>2</sup> Students are encouraged to consider CIS\*1200 Introduction to Computing, CIS\*1050 Web Design and Development, or CIS\*1500 Introduction to Programming as an elective if they wish to enhance their computer literacy.

## Restricted Electives

- Students must complete 2.00 credits of Liberal Education electives. ANSC\*2210 Principles of Animal Care and Welfare is a Liberal Education course, 0.50 credit. 1.50 additional credits from Liberal Education courses are required. The list of liberal education electives for B.Sc. students can be found at: <http://www.uoguelph.ca/bsc/>.
- 0.50 credits is required from each of the following areas: Animal Nutrition, Animal Breeding & Genetics, and Animal Physiology & Behaviour. Students are encouraged to consult with the Faculty Advisor for help in tailoring their selection to meet personal and career interests.

Code	Title	Credits
<b>Animal Breeding &amp; Genetics</b>		
Select 0.50 credits from of the following:		
ANSC*4050	Biotechnology in Animal Science	0.50
MBG*4020	Genetics of Companion Animals	0.50
MBG*4030	Animal Breeding Methods and Applications	0.50
<b>Animal Nutrition</b>		
Select 0.50 credits from of the following:		
ANSC*3170	Nutrition of Fish and Crustacea	0.50
ANSC*3180	Wildlife Nutrition	0.50
ANSC*4260	Beef Cattle Nutrition	0.50
ANSC*4270	Dairy Cattle Nutrition	0.50
ANSC*4280	Poultry Nutrition	0.50
ANSC*4290	Swine Nutrition	0.50
ANSC*4560	Pet Nutrition	0.50
EQN*4020	Advanced Equine Nutrition	0.50
<b>Animal Physiology &amp; Behaviour</b>		
Select 0.50 credits from of the following:		
ANSC*3090	Principles of Animal Behaviour	0.50
ANSC*4090	Applied Animal Behaviour and Welfare	0.50
ANSC*4100	Applied Environmental Physiology and Animal Housing	0.50
ANSC*4350	Experiments in Animal Biology	0.50
ANSC*4470	Animal Metabolism	0.50
ANSC*4490	Applied Endocrinology	0.50

Free Electives - any approved elective for B.Sc. students.	2.00
--	------

<b>Total Credits</b>	<b>20</b>
----------------------	-----------

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.

3. An additional 3.00 credits must be obtained by selecting courses from the above lists and from the following:

Code	Title	Credits
AGR*3200	Computing for Bioscientists	0.50
ANSC*3050	Aquaculture: Advanced Issues	0.50
ANSC*4040	Digital Technologies for Animal Production Systems	0.50
ANSC*4610	Critical Analysis in Animal Science	0.50
ANSC*4650	Comparative Immunology	0.50
ANSC*4700	Research in Animal Biology I	0.50
ANSC*4710	Research in Animal Biology II	0.50
BIOC*3560	Structure and Function in Biochemistry	0.50
EQN*3250	Equine Exercise Physiology	0.50
MICR*3230	Immunology	0.50
PATH*3610	Principles of Disease	0.50
POPM*3240	Epidemiology	0.50
POPM*4230	Animal Health	0.50

## Credit Summary

(20.00 Total Credits)

Code	Title	Credits
First year core science credits		3.50
Required courses semesters 2 - 8		7.50
Restricted electives (# 2 and # 3)		4.50
Approved Science Electives		1.00
Liberal Education Electives		1.50