PLANT SCIENCE (PLSC)

Department of Plant Agriculture, Ontario Agricultural College
School of Environmental Sciences, Ontario Agricultural College
Department of Integrative Biology, College of Biological Science
Department of Molecular and Cellular Biology, College of Biological Science

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. The major requires the completion of 20.00 credits.

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*1070	Discovering Biodiversity	0.50
CHEM*1040	General Chemistry I	0.50
ENGL*1030	Effective Writing	0.50
MATH*1080	Elements of Calculus I	0.50
PHYS*1080	Physics for Life Sciences	0.50
Semester 2		
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 Liberal Education electives		0.50
Select 0.50 credits from the following:		
CIS*1200	Introduction to Computing	0.50
CIS*1500	Introduction to Programming	0.50
MATH*1090	Elements of Calculus II	0.50
Semester 3		
AGR*2470	Introduction to Plant Agriculture	0.50
BIOC*2580	Introduction to Biochemistry	0.50
BOT*2100	Life Strategies of Plants	0.50
MBG*2040	Foundations in Molecular Biology and Genetics	0.50
0.50 Liberal Education electives		0.50
Semester 4		
MCB*2050	Molecular Biology of the Cell	0.50
STAT*2040	Statistics I	0.50
1.50 electives or restricted electives		1.50
Semester 5		
BOT*3410	Plant Anatomy	0.50
BOT*3050	Plant Functional Ecology	0.50
1.50 electives or restricted electives		1.50
Semester 6		
BOT*3310	Plant Growth and Development	0.50
2.00 electives or restricted electives		2.00
Semester 7		
1.50 to 2.00 electives or restricted electives		1.50 to 2.00
Select ONE course from the following: [1]		
AGR*4450	Research Project I	1.00
IBIO*4500	Research in Integrative Biology I	1.00
MCB*4500	Research Project in Molecular and Cellular Biology I	1.00
MCB*4600	Topics in Molecular and Cellular Biology	0.50
Semester 8		
BOT*4380	Metabolism in the Whole Life of Plants	0.50
2.00 electives or restricted electives		2.00

1 AGR*3010 Special Studies in Agricultural Science I may be taken to fulfill the research requirement with approval of the Plant Science faculty advisor.

Restricted Electives

1. A minimum of 1.00 credits of Liberal Education electives is required. The list of Liberal Education electives for B.Sc. students can be found at: https://www.uoguelph.ca/bsc/

2. Core Electives: A minimum of 2.00 credits from any of the following lists of courses. The courses are broken into disciplines which will help students tailor their electives towards a specific field, if desired.

Code	Title	Credits
Applied Plant Science		
CROP*4240	Weed Science	0.50
ENVS*2060	Soil Science	0.50
ENVS*3210	Plant Pathology	0.50
ENVS*4100	Integrated Management of Invasive Insect Pests	0.50
Plant Biotechnology and Plant Genetics		
MBG*3100	Plant Genetics	0.50
MBG*3350	Laboratory Methods in Molecular Biology	0.75
PBIO*3750	Plant Tissue Culture	0.50
PBIO*4750	Genetic Engineering of Plants	0.50
Plant Ecology and Evolution		
BIOL*2400	Evolution	0.50
BIOL*2060	Ecology	0.50
BIOL*4120	Evolutionary Ecology	0.50
BOT*3710	Plant Diversity and Evolution	0.50

3. Subject Area Electives: 3.00 credits within or among the following groupings:

Code	Title	Credits
Applied Plant Science		
CROP*3300	Grain Crops	0.50
CROP*3310	Protein and Oilseed Crops	0.50
CROP*3340	Managed Grasslands	0.50
CROP*4220	Cropping Systems **	0.50
CROP*4240	Weed Science	0.50
ENVS*2040	Plant Health and the Environment	0.50
ENVS*2060	Soil Science	0.50

ENVS*3020	Pesticides and the Environment	0.50
ENVS*3080	Soil and Water Conservation **	0.50
ENVS*3140	Management of Turfgrass Diseases **	0.50
ENVS*3300	Introduction to Controlled Environment Systems	0.50
ENVS*3310	Soil Biodiversity and Ecosystem Function **	0.50
ENVS*4090	Soil Management	0.50
ENVS*4100	Integrated Management of Invasive Insect Pests	0.50
ENVS*4180	Insecticide Biological Activity and Resistance	0.50
ENVS*4190	Biological Activity of Herbicides	0.50
HORT*2450	Introduction to Turfgrass Science	0.50
HORT*3010	Annual, Perennial and Indoor Plants - Identification and Use †	0.50
HORT*3050	Management of Turfgrass Insect Pests and Weeds **	0.50
HORT*3150	Principles and Applications of Plant Propagation	0.50
HORT*3270	Medicinal Plants	0.50
HORT*3280	Greenhouse Production	0.50
HORT*3310	Plants, Food and Health	0.50
HORT*3430	Wine-Grape Culture †	0.50
HORT*3510	Vegetable Production	0.50
HORT*4200	Plants, the Environment and Society	0.50
HORT*4300	Postharvest Physiology	0.50
HORT*4420	Fruit Crops	0.50
HORT*4450	Advanced Turfgrass Science	0.50
OAGR*2070	Introduction to Organic Agriculture †	1.00
OAGR*4050	Design of Organic Production Systems †,**	1.00
PBIO*3110	Crop Physiology	0.50
PBIO*4290	Cannabis Production **	0.50
Plant Biotechnology and Plant Genetics		
BIOL*3020	Population Genetics	0.50
BIOL*3300	Applied Bioinformatics	0.50
ENVS*3210	Plant Pathology	0.50
MBG*2400	Fundamentals of Plant and Animal Genetics	0.50
MBG*3350	Laboratory Methods in Molecular Biology	0.75
MBG*3660	Genomics	0.50
MBG*3100	Plant Genetics	0.50
MBG*4160	Plant Breeding	0.50
MBG*4300	Plant Molecular Genetics	0.50
MICR*2420	Introduction to Microbiology	0.50
MICR*3090	Mycology	0.50
MICR*3220	Plant Microbiology	0.50
MICR*3330	World of Viruses	0.50
MCB*4010	Advanced Cell Biology **	0.50
PBIO*3750	Plant Tissue Culture	0.50
PBIO*4000	Molecular and Cellular Aspects of Plant-Microbe Interactions	0.50
PBIO*4150	Molecular and Cellular Aspects of Plant Development	0.50
PBIO*4750	Genetic Engineering of Plants	0.50
Plant Ecology and Evolution		
AGR*2050	Agroecology	0.50
BIOL*2060	Ecology	0.50
BIOL*2400	Evolution	0.50
BIOL*3060	Populations, Communities and Ecosystems **	0.50
BIOL*3130	Conservation Biology **	0.50
BOT*3710	Plant Diversity and Evolution	0.50
ENVS*3010	Climate Change Biology **	0.50
ENVS*3270	Forest Biodiversity	0.50
ENVS*3310	Soil Biodiversity and Ecosystem Function **	0.50
ENVS*3370	Terrestrial Ecosystem Ecology **	0.50
ENVS*4350	Forest Ecology **	0.50
PBIO*4530	Plants and Environmental Pollution	0.50
Research Methods		
AGR*3450	Research Methods in Agricultural Science	0.50
AGR*4460	Research Project II	1.00
IBIO*4510	Research in Integrative Biology II	1.00
MCB*4510	Research Project in Molecular and Cellular Biology	1.00
STAT*2050	Statistics II	0.50
STAT*3210	Experimental Design **	0.50
Experiential Learning		
BIOL*3660	Internship In Biological Science	0.50
IAEF*3500	Experiential Education	0.50
UNIV*3140	Flexible Internship in Agri-Food †	0.50

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Restricted electives indicated with † are non-science electives. If non-science restricted electives are chosen students are reminded that they will still be responsible for meeting the minimum requirement of 16.00 credits in science and that the credit summary may vary from what is specified below.

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Restricted electives indicated with ** require other restricted electives as prerequisites. Students should consult the most recent undergraduate calendar for specific requirements.

Credit Summary

(20.00 Total Credits)

Code	Title	Credits
First year science core		4.00
Required science courses semesters 3 - 8		5.00
Core restricted elective		2.00
Research project		0.50-1.00
Subject area restricted electives [2]		3.00
Science Electives		1.00-1.50
Liberal Education Electives		1.00
ENGL*1030	Effective Writing	0.50
Free electives [3]		2.50
Total Credits		**20**

2

Some restricted electives do not count as science electives towards the degree. Therefore additional science electives may be required.

3

Any approved elective for B.Sc. Students (could be less if restricted electives do not count as science)

Of the total credits required, students are required to complete a minimum of 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.

Minor (Honours Program)

A minor in Plant Science requires a minimum of 5.00 credits in the Plant Science Program chosen in consultation with the Faculty Advisor. The courses include:

Code	Title	Credits
AGR*2470	Introduction to Plant Agriculture	0.50
BOT*2100	Life Strategies of Plants	0.50
BOT*3310	Plant Growth and Development	0.50
BOT*3410	Plant Anatomy	0.50
BOT*3710	Plant Diversity and Evolution	0.50
BOT*4380	Metabolism in the Whole Life of Plants	0.50
2.00 credits from any courses listed in the core electives or subject area electives.		2.00