

# CROP SCIENCE (CRSC)

## Department of Plant Agriculture, Ontario Agricultural College

The Crop Science major is designed for students who want to apply the latest advancements in the biological sciences to contemporary problems in the plant production industry with an emphasis on agronomy and cropping systems. This major is appropriate for students who wish to focus on the production of field crops for food, fuel or biomaterials, and breeding improved crop varieties. Students can also incorporate a variety of field trips, experiential learning in the workplace and independent study into their program of studies.

Students interested in adding a business emphasis to their studies are encouraged to consider the Certificate of Business ([calendar.uoguelph.ca/undergraduate-calendar/special-study-opportunities/certificates-diplomas/business/](http://calendar.uoguelph.ca/undergraduate-calendar/special-study-opportunities/certificates-diplomas/business/)) offered by the Gordon S. Lang School of Business and Economics. This may require an additional semester to complete.

Students interested in organic agriculture should consider the Certificate in Organic Agriculture ([calendar.uoguelph.ca/undergraduate-calendar/special-study-opportunities/certificates-diplomas/organic-agriculture/](http://calendar.uoguelph.ca/undergraduate-calendar/special-study-opportunities/certificates-diplomas/organic-agriculture/)).

## Credit Summary

- In semester 5 students must choose Option A: Production and Management, or Option B: Research.
  - Option A: 14.00 credits from required courses, 3.00 credits of restricted electives, 0.50 credits of humanities and social sciences, and 2.50 credits of free electives.
  - Option B: 15.50 credits from required courses, 3.00 credits of restricted electives, 0.50 credits of humanities and social sciences, and 1.00 credits of free electives.
- A humanities or social science courses (0.50 credits) at the 1000-level or above. See Program Counsellor for acceptable list of courses.

Code	Title	Credits
<b>Semester 1</b>		
AGR*1110	Introduction to the Agri-Food Systems	1.00
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
<b>Semester 2</b>		
AGR*2050	Agroecology	0.50
BIOL*1090	Introduction to Molecular and Cellular Biology	0.50
CHEM*1050	General Chemistry II	0.50
FARE*1400	Economics of the Agri-Food System	1.00
<b>Semester 3</b>		
AGR*2320	Soils in Agroecosystems	0.50
AGR*2350	Animal Production Systems, Health and Industry	0.50
AGR*2470	Introduction to Plant Agriculture	0.50
FARE*2700	Survey of Natural Resource Economics	0.50
MBG*2400	Fundamentals of Plant and Animal Genetics	0.50

## Semester 4

BIOC*2580	Introduction to Biochemistry	0.50
BOT*2100	Life Strategies of Plants	0.50
ENVS*2040	Plant Health and the Environment	0.50
STAT*2040	Statistics I	0.50
0.50 electives or restricted electives		0.50

## Option A - Production and Management

Code	Title	Credits
<b>Semester 5</b>		
ENVS*3210	Plant Pathology	0.50
FOOD*3090	Food Science and Human Nutrition	0.50
1.50 electives or restricted electives		1.50
<b>Semester 6</b>		
ENVS*4100	Integrated Management of Invasive Insect Pests	0.50
PBIO*3110	Crop Physiology	0.50
1.50 electives or restricted electives		1.50
<b>Semester 7</b>		
CROP*4240	Weed Science	0.50
ENVS*4090	Soil Management	0.50
or ENVS*4160	Soil and Nutrient Management	
1.50 electives or restricted electives		1.50
<b>Semester 8</b>		
AGR*4600	Agriculture and Food Issues Problem Solving	1.00
CROP*4220	Cropping Systems	0.50
1.00 electives or restricted electives		1.00

## Option B - Research

Code	Title	Credits
<b>Semester 5</b>		
AGR*3450	Research Methods in Agricultural Science	0.50
ENVS*3210	Plant Pathology	0.50
FOOD*3090	Food Science and Human Nutrition	0.50
1.00 electives or restricted electives		1.00
<b>Semester 6</b>		
ENVS*4100	Integrated Management of Invasive Insect Pests	0.50
PBIO*3110	Crop Physiology	0.50
1.50 electives or restricted electives		1.50
<b>Semester 7</b>		
AGR*4450	Research Project I	1.00
CROP*4240	Weed Science	0.50
ENVS*4090	Soil Management	0.50
or ENVS*4160	Soil and Nutrient Management	
0.50 electives or restricted electives		0.50
<b>Semester 8</b>		
AGR*4460	Research Project II	1.00
CROP*4220	Cropping Systems	0.50
1.00 electives or restricted electives		1.00

## Restricted Electives - Option A and Option B

A minimum of 7.00 credits must be at the 3000 level or higher, of which 5.00 credits must be in agricultural science and of which 3.50 credits must be at the 4000 level. Refer to Program Counsellor for list of agricultural science courses

Students must take a minimum of 3.00 credits of restricted electives from the following lists:

### Crop Production

A minimum of 1.50 credits from:

Code	Title	Credits
AGR*4020	Precision Techniques for Plant Agriculture	0.50
CROP*3300	Grain Crops	0.50
CROP*3310	Protein and Oilseed Crops	0.50
CROP*3340	Managed Grasslands	0.50
ENVS*3080	Soil and Water Conservation	0.50
ENVS*4390	Soil Variability and Land Evaluation	1.00
HORT*4380	Tropical and Sub-Tropical Crops	0.50
OAGR*2070	Introduction to Organic Agriculture	1.00

### Pest Management

A minimum of 0.50 from:

Code	Title	Credits
ENVS*3020	Pesticides and the Environment	0.50
ENVS*4180	Insecticide Biological Activity and Resistance	0.50
ENVS*4190	Biological Activity of Herbicides	0.50
PBIO*4070	Biological and Cultural Control of Plant Diseases	0.50

### Genetics, Biotechnology and Physiology

A minimum of 0.50 from:

Code	Title	Credits
MBG*3100	Plant Genetics	0.50
MBG*4160	Plant Breeding	0.50
PBIO*3120	Plant Physiology	0.50
PBIO*3750	Plant Tissue Culture	0.50
PBIO*4750	Genetic Engineering of Plants	0.50

### Experiential Learning

A minimum of 0.50 from:

Code	Title	Credits
AGR*2500	Field Course in International Agriculture	0.50
AGR*3010	Special Studies in Agricultural Science I	0.50
CROP*4260	Crop Science Field Trip	0.50
EDRD*3050	Agricultural Communication	0.50
IAEF*3500	Experiential Education	0.50
UNIV*3140	Flexible Internship in Agri-Food	0.50