

# AGRICULTURE (AGR)

## **AGR\*1110 Introduction to the Agri-Food Systems Fall Only (LEC: 6) [1.00]**

This introductory course provides an overview of Canadian and global agri-food systems. Students will be introduced to many different facets of agriculture, including primary production (conventional and organic) of commodity, mid-value and high-value crops, and livestock. Students will explore the agri-food system by tracing consumer end-products back to primary production. Modern, industrial agri-food systems as well as subsistence farming will be discussed. The course incorporates an experiential learning component in which students will explore a new agri-food opportunity for Ontario by designing and assessing the value chain.

**Restriction(s):** AGR\*1100, AGR\*1250. Restricted to students in BAH.FARE, BSC(AGR), Minor in Agriculture

**Department(s):** Department of Plant Agriculture, Department of Animal Biosciences

**Location(s):** Guelph

## **AGR\*1350 Animal Production Systems and Industry: Dairy, Poultry and Egg Winter Only (LEC: 3, LAB: 3) [0.50]**

This course is designed to introduce the student to animal production systems in Canada. Dairy, poultry and egg productions are covered throughout the value-chain. Topics include food, health and wellness (domestic animals and human), nutrition, housing, genetics, reproduction, husbandry practices and processing. The course includes laboratories and animal production unit tours.

**Prerequisite(s):** 1 of BIOL\*1050, BIOL\*1070, BIOL\*1080 BIOL\*1090

**Restriction(s):** AGR\*2350. Restricted to students in BSCH.ABIO, BBRM.EQM, and BSAG majors/minor.

**Department(s):** Department of Animal Biosciences

**Location(s):** Guelph

## **AGR\*2050 Agroecology Winter Only (LEC: 3) [0.50]**

This course considers the interactions of all important biophysical, technical and socioeconomic components of farming systems and examines these systems as the fundamental units of study. Mineral cycles, energy transformations, biological processes and socioeconomic relationships are analyzed as a whole in an interdisciplinary fashion.

**Prerequisite(s):** (AGR\*1110 or AGR\*2150), (BIOL\*1050 or BIOL\*1070)

**Restriction(s):** CROP\*2110

**Department(s):** Department of Plant Agriculture, Department of Animal Biosciences

**Location(s):** Guelph

## **AGR\*2150 Plant Agriculture for International Development Fall Only (LEC: 3) [0.50]**

This course will provide students interested in international development with an introductory mechanistic understanding of the biology underlying crop production in developing nations. Emphasis will be placed on simple, low-cost solutions from biology that have the potential to aid efforts in international development. This course is accessible to science and non-science students.

**Prerequisite(s):** 4.00 credits

**Restriction(s):** AGR\*2470

**Department(s):** Department of Plant Agriculture

**Location(s):** Guelph

## **AGR\*2320 Soils in Agroecosystems Fall Only (LEC: 3, LAB: 2) [0.50]**

This course is an introduction to soil resources with emphasis on management practices that will sustain the productivity of these resources and enhance the quality of the ecosystems of which they are a part. Students will develop a management plan for a farm that will take into account the roles of geological, geomorphological, biological, climatic and temporal factors on the formation, properties and uses of soils. The management plans will be placed in the broader context of provincial policies related to soil, air and water resources and local zoning regulations.

**Prerequisite(s):** 2.50 credits

**Restriction(s):** ENVS\*2060 or SOIL\*2010

**Department(s):** School of Environmental Sciences

**Location(s):** Guelph

## **AGR\*2350 Animal Production Systems and Industry: Beef, Swine and Others Fall Only (LEC: 3, LAB: 3) [0.50]**

This course is designed to introduce the student to animal production systems in Canada. Beef, swine, companion animals, aquaculture, mink and other alternative animals will be covered throughout the value-chain. Topics include food, health and wellness (domestic animals and human), nutrition, housing, genetics, reproduction, husbandry practices and processing. The course includes laboratories and animal production unit tours.

**Prerequisite(s):** (2 of BIOL\*1050, BIOL\*1070, BIOL\*1080, BIOL\*1090)

**Department(s):** Department of Animal Biosciences

**Location(s):** Guelph

## **AGR\*2470 Introduction to Plant Agriculture Fall Only (LEC: 3, LAB: 3) [0.50]**

The basic principles of plant morphology, nutrition, growth and development will be related to where and how agriculturally significant plants are grown. Agroecosystems and farming systems will be considered as frameworks for crop production analyses. The course uses examples from temperate, sub-tropical and tropical crops and cropping systems. Labs include problem-solving exercises in the context of plant production.

**Prerequisite(s):** BIOL\*1050 or BIOL\*1070

**Restriction(s):** AGR\*2150

**Department(s):** Department of Plant Agriculture

**Location(s):** Guelph

## **AGR\*2500 Field Course in International Agriculture Winter Only (LEC: 3) [0.50]**

This course introduces students to a wide range of tropical and subtropical agricultural production systems and issues. The course is comprised of a weekly 3 hour evening lecture and a ten day field trip to Costa Rica where students will visit corporate and individual farms, and university and government research stations. The field trip occurs during Reading Week in February. This course must be recorded as part of your Winter course selection. A student fee will be assessed to cover transportation, lodging and meals in addition to tuition and compulsory fees. Students must identify their interest in taking this course by contacting the instructor before the October course selection period of the previous year. For information regarding fees, see the Department of Plant Agriculture Website.

**Prerequisite(s):** (AGR\*1110 or AGR\*1250) or registration in International Development

**Restriction(s):** Registration in BSC(AGR) or BA.ID or Minor in Agriculture. Instructor consent required.

**Department(s):** Department of Plant Agriculture

**Location(s):** Guelph

**AGR\*3010 Special Studies in Agricultural Science I Summer, Fall, and Winter (LEC: 3) [0.50]**

A special study option that enables undergraduate students in semesters 5 through 8 to undertake specific projects in agricultural sciences. The topic of the special study will be determined in consultation with a faculty member and the individual student. Students are responsible for making appropriate arrangements with faculty at the departmental and/or college level prior to registration for the course.

**Prerequisite(s):** 10.00 credits

**Restriction(s):** Instructor consent required.

**Department(s):** Department of Plant Agriculture

**Location(s):** Guelph

**AGR\*3200 Computing for Bioscientists Winter Only (LEC: 5) [0.50]**

This course focuses on computational aspects of analytical techniques for biological data. Topics covered include, how to operate a computer efficiently when using biological data, types of biological data used in animal biosciences, how to prepare biological data for analysis, programming skills for bio-data organization, manipulation and problem solving, bio-data visualization, and computational aspects of data modelling.

**Prerequisite(s):** 9.50 credits

**Restriction(s):** Restricted to students in BSCH.ABIO, BSAG.AGRS, BSAG.ANSC, BBRM.EQM.

**Department(s):** Department of Animal Biosciences

**Location(s):** Guelph

**AGR\*3450 Research Methods in Agricultural Science Fall Only (LEC: 3, LAB: 2) [0.50]**

This course provides students with an opportunity to enhance their understanding of the principles and processes of agricultural research. The course will provide students with a foundation in critical thinking, experimental design and data analysis that will be applicable to independent research projects and graduate studies. Students will also explore the practical requirements and limitations of scientific research. Laboratory and field safety, animal care, intellectual property and research ethics will be reviewed. Students will be required to practice both oral presentation and writing skills as core components of their evaluation.

**Prerequisite(s):** Completion of 7.50 credits including (1 of GEOG\*2460, STAT\*2040, STAT\*2060, STAT\*2080)

**Restriction(s):** Enrollment in the BSC(AGR), BBRM, BSC.ABIO, BSC.PLSC or Minor in Agriculture.

**Department(s):** Department of Plant Agriculture, Department of Animal Biosciences

**Location(s):** Guelph

**AGR\*4010 Special Studies in Agricultural Science II Summer, Fall, and Winter (LEC: 3) [0.50]**

This special study option enables undergraduate students in semesters 5 through 8 to undertake specific projects in agricultural science. The topic of the special study will be determined in consultation with a faculty member and the individual student. Students are responsible for making appropriate arrangements with faculty member prior to registration for the course.

**Prerequisite(s):** 15.00 credits

**Restriction(s):** Instructor consent required.

**Department(s):** Department of Animal Biosciences

**Location(s):** Guelph

**AGR\*4020 Precision Techniques for Plant Agriculture Fall Only (LEC: 3) [0.50]**

This course will be a survey of principles and applications of technologies supporting precision farming and planning for natural resource data management. Topics will include Global positioning system (GPS), yield monitoring and mapping, remote sensing, geographic information system (GIS), variable rate technologies (VRT), data layering, Internet information access, and computer software for management.

**Prerequisite(s):** AGR\*2470, STAT\*2040, (BIOL\*1050 or BIOL\*1070)

**Department(s):** Department of Plant Agriculture

**Location(s):** Guelph

**AGR\*4450 Research Project I Summer, Fall, and Winter (LAB: 6) [0.50]**

This course provides for the independent study of a current topic in agricultural or environmental science designed to encourage senior undergraduates to conduct research. The course includes participation in meetings organized by the coordinator and working with a faculty advisor to develop a research project, formulate hypotheses, and conduct a thorough literature search related to the proposed work. Students will carry out independent library research, potentially conduct preliminary research, prepare a written research proposal and make a presentation to other students on the research plan and preliminary results, if applicable. Students should make arrangements with both the faculty advisor and the course coordinator at least one semester before starting the course. The course will normally be followed by AGR\*4460 to provide 2 semesters to complete the research project.

**Prerequisite(s):** 10.00 credits

**Restriction(s):** Permission of the course coordinator (contingent on the availability and agreement of a faculty advisor). BSC.Agr or BSC or BBRM, 70% cumulative average.

**Department(s):** Department of Plant Agriculture

**Location(s):** Guelph

**AGR\*4460 Research Project II Summer, Fall, and Winter (LAB: 12) [1.00]**

Independent study of a current topic in agricultural or environmental science designed to encourage senior undergraduates to conduct research. The focus of this course will be the completion of the research plan developed in AGR\*4450 by the student in consultation with a faculty advisor. The course includes participation in meetings organized by the coordinator and meetings with a faculty advisor to review research progress. Students will carry out independent research, prepare a written report of the research findings in a scholarly style and make a presentation to other students in the course of the research results. Open to students in semesters 6, 7 and 8 of the B.SC. (Agr.) or B.Sc. degree program.

**Prerequisite(s):** AGR\*4450

**Restriction(s):** Permission of the course coordinator and faculty advisor.

**Department(s):** Dean's Office, Ontario Agricultural College

**Location(s):** Guelph

**AGR\*4600 Agriculture and Food Issues Problem Solving Winter Only (LEC: 3) [1.00]**

The issues facing the agriculture and food sector are many and varied and relate to the economy, the environment and society. Within these issues there are problems which require thoughtful solutions. Working in teams, with guidance from faculty advisors, students will have an opportunity to develop solutions to real-world problems facing the agriculture and food sector. In the process students will have an opportunity to develop their research, communication, presentation, writing and group work skills.

**Prerequisite(s):** 12.50 credits

**Restriction(s):** Registration in BSC.AGR, BBRM, BCOMM.FAB, BCOMM.FAB:C, BSC.PLSC, or BA.FARE program, or Minor in Agriculture.

**Department(s):** Department of Plant Agriculture

**Location(s):** Guelph