# Course Outline Form: Fall 2015

## General Information

**Course Title:** OAGR\*4050 - Design of Organic Production Systems

**Course Description:** Students will apply organic agriculture principles to the design and concept of agricultural operations, taking into account the interactions of soils, plants and animals with environmental and managerial factors. This course is designed to give students an exposure to the complexity of the systems design, practices and management of organic farming, integrating social, economic, as well as biophysical aspects of soils, crops and livestock to meet human needs and to preserve the environment.

Students are expected to combine farmer experience and wisdom with current knowledge in agricultural and ecological sciences. The goal is for students to obtain a deeper understanding of the principles of organic agriculture and to develop critical thinking skills applicable to current issues in the agri-food sector.

**Credit Weight:** 1.0

**Academic Department (or campus):** School of Environmental Sciences

**Campus:** Guelph

**Semester Offering:** Fall 2015

**Class Schedule and Location:** LEC Mon, 2:30PM – 4:20PM, MINS, Room 128; LAB Fri, 10:30PM – 12:20PM, ALEX, Room 030

## Instructor Information

Instructor Name: Professor Paul Voroney

Instructor Email: pvoroney@uoguelph.ca

Office location and office hours: ALEX 217; by appointment

## Learning Outcomes

On completion of the course, students will be able to:

(i) design a sustainable farm production system that is tailored for a future constrained by increasing land and energy costs and increasing climatic variability, and that complies with Canadian organic regulations;

(ii) capture and quantify the ecological and economic synergies obtained by combining enterprises within the farm enterprises, and show how a given resource investment increases income from more than one enterprise;

(iii) appreciate farm enterprises as multi-functional service providers- including producers of food, fibre, fuel and environmental services;

(iv) identify and use appropriate sources of information to construct whole farm nutrient and carbon budgets; and

(v) prepare a business plan that encompasses both financial and ecological balance sheets (e.g. C-credits, environmental stewardship), suitable for soliciting funding from a farm credit agency

**Learning Objectives:**

1. *Critical and Creative Thinking:*

1.1) Reinforcement of *Inquiry and Analysis* through critical review of scientific journal articles.

1.2) Reinforcement of *Integrative and Applied Learning* through a research topic which evaluates a potential management solution to a problem in organic production practices.

2. *Literacy*:

2.1 Reinforcement of *Collaborative Literacy* through the selection of the group research and presentation topic.

2.2 Reinforcement of *Depth and Breadth of Understanding* through individual research for oral and written projects.

3. *Global Understanding:*

3.1 Introduction of *Global Knowledge* through research and review of relevant scientific literature.

3.2 Introduction of *Intercultural Knowledge and Competence* through review of local farmer experiences and federal and provincial agricultural information.

4. *Communicating:*

4.1 Reinforcement of *Oral Communication* through oral presentations associated with individual and group topics.

4.2 Reinforcement of *Reading Comprehension* through individual research topic and written papers.

5. *Professional and Ethical Behavior*:

5.1 Reinforcement of *Teamwork* through group research topic selection and final oral presentation and written paper.

### Lecture Content:

The first 6 weeks of the term will involve lectures, readings, and student seminars to provide students with the tools needed for farm system design. During the latter half of the course, students will work on the progressive construction of the farm design and develop a business plan.

During the first six weeks of the semester, students will select a topic from the course material list (see example below) and prepare a 15-20 min seminar on the chosen topic. The seminar will consist of ~10 power point slides and encourage class questions and discussion.

Potential seminar topics:

1. Organic agriculture

 - Principles and strategies for designing sustainable farming systems

2. Soil fertility management

 - Soil fertility and soil quality

 - Goals and components of a sustainable soil fertility management program

 - Soil testing

 - Calculation of farm nutrient budgets

3. Organic management practices

 - Soil tillage

 - Cover crops

 - Composts and animal manures

 - Soil amendments and supplemental fertilizers

 - Crop rotations

4. Selecting and using cover crops

 - Why use a cover crop

 - How to choose a cover crop

 - How to estimate nutrient (N and P) availability from cover crops

5. Role of livestock in organic production systems

 - Integrated plant/animal systems

 - Animal health and behaviour

 - Livestock management

6. Farm business plan and marketing organic produce

 - How to construct a farm business plan

### Labs: Students will work in a group to design a resilient farming system that is both ecologically sustainable and economically sound, constrained by limited land base and cheap energy, and able to function in a more variable climate.

### Seminars: Students will present two seminars (20 min) over the semester on topics selected from a list and rely on information obtained from scientific journals.

### Course Assignments and Tests:

| Assignment | Due Date | Contribution to Final Mark (%) | Learning Outcomes Assessed |
| --- | --- | --- | --- |
| Main project A. Background context and design of a farm production system- preliminary (group oral) | Week 8 | 10 | 1.2,2.1,3.1,3.2,4.1,5.1 |
| Main project B. Soil management and nutrient recommendations for organic plant production (group oral) | Week 10 | 10 | 1.1,2.2,3.1,3.2,4.1,5.1 |
| Main project C. Final design and business plan (group oral) | Week 12 | 20 | 4.1,5.1 |
| Main project. Final farm design and business plan (written) | Last day of classes | 30 | 1.1,1.2,2.1,2.2,3.2,4.2,5.1 |
| Individual seminars (2) | TBD | 30 | 2.2,4.1 |

### Final examination date and time: Not applicable

## Course Resources

### Required Texts: None

### Recommended Texts: None

### Lab Manual: None

### Other Resources: Students readings from scientific journal articles

### Field Trips: Not applicable

## Course Policies

### Grading Policies: Assignments are due on the date indicated and should be submitted at the start of the class or to my office (ALEX 217) by the end of the day. The penalty for late submission is -10% of the earned mark for submission anytime within the first 24 hours; -5% for anytime within each subsequent 24 hours. Documentation for valid excuses for late or missing assignments needs to be provided.

### Course Policy on Group Work: Students will work in self-chosen groups of 2-3 students, the task will be to design a farming system and to identify the components of their specific topic areas. Students will individually prepare an oral presentation on their selected topic area. Evaluation of this work will include a group component, evaluating the overall quality/integration of the presentations and summaries, as well as an individual component, reflecting the specific material assembled, interpreted and presented.

### Course Policy regarding use of electronic devices and recording of lectures:

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

## University Policies

### Academic Consideration:

The University of Guelph is committed to supporting students in their learning experiences and responding to their individual needs and is aware that a variety of situations or events beyond the student's control may affect academic performance. Support is provided to accommodate academic needs in the face of personal difficulties or unforeseen events in the form of Academic Consideration.

Information on regulations and procedures for Academic Consideration, Appeals and Petitions, including categories, grounds, timelines and appeals can be found in [Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar](https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml).

### Academic Misconduct:

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Detailed information regarding the Academic Misconduct policy is available in [Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar](https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml).

### Accessibility:

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Student Accessibility Services (SAS), formerly Centre for Students with Disabilities (CSD), as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email sas@uoguelph.ca or visit the [Student Accessibility Services website (http://www.uoguelph.ca/csd/)](http://www.uoguelph.ca/csd/).

### Course Evaluation Information:

End of semester course and instructor evaluations provide students the opportunity to have their comments and opinions used as an important component in the Faculty Tenure and Promotion process, and as valuable feedback to help instructors enhance the quality of their teaching effectiveness and course delivery.

While many course evaluations are conducted in class others are now conducted online. Please refer to the [Course and Instructor Evaluation Website](https://courseeval.uoguelph.ca/) **for more information.**

### Drop period:

The drop period for single semester courses starts at the beginning of the add period and extends to the Fortieth (40th) class day of the current semester (the last date to drop a single semester courses without academic penalty) which is listed in [Section III (Schedule of Dates) of the Undergraduate Calendar](https://www.uoguelph.ca/registrar/calendars/).

The drop period for two semester courses starts at the beginning of the add period in the first semester and extends to the last day of the add period in the second semester.

Information about Dropping Courses can be found in [Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar](https://www.uoguelph.ca/registrar/calendars/undergraduate/current/).

## Additional Course Information

\*Please include any additional course information as required.