



FARE*4500 Decision Science

Fall 2020

Section(s): C01

Department of Food, Agricultural and Resource Economics

Credit Weight: 0.50

Version 1.00 - September 02, 2020

1 Course Details

1.1 Calendar Description

Quantitative techniques such as classical optimization, mathematical programming, simulation and input-output models are applied to firm, interregional, industry, and international problem situations in agricultural economics, including those dealing with resources and the environment. Time and risk and uncertainty dimensions are addressed.

Pre-Requisites: ECON*2770

1.2 Course Description

The purpose of the course is to provide students with an understanding of how quantitative methods can be used in making decisions. The course is application-oriented with students using several methods to solve problems. The quantitative techniques, including decision analysis and linear programming, are applied to firm, interregional, industry, and international problem situations in agricultural economics, including those dealing with resources and the environment.

1.3 Timetable

Synchronized online and in-class option. Students can access online class through the Zoom links available in the content section of CourseLink.

Online Class Schedule: 11:00 am – 12:20 pm. Tuesday and Thursday. Zoom link available through CourseLink.

In-Class Schedule: 11:00 am – 12:20 pm. Tuesday and Thursday, Thornborough Rm. 1307. In-class Students are encouraged to bring computer and log on to zoom. This will facilitate discussion between all students in the zoom break out rooms.

The live-stream classes will not be recorded. Students are encouraged to identify other students with whom to share class notes in the event that they miss class. I will facilitate the building of relationships between students throughout the course.

1.4 Final Exam

Tuesday December 15, 2020

8:30AM-10:30AM

Room TBA

Weight: 40%

2 Instructional Support

2.1 Instructional Support Team

Instructor:	Alfons Weersink
Email:	aweersin@uoguelph.ca
Telephone:	519 824-4120 Ex. 52766
Office:	222 JD MacLachlan Bldg
Office Hours:	Virtual office hours on Zoom: Friday from 11 am to 12 pm or by appointment. Students will be able to attend regular office hours on Zoom via a link made available on CourseLink. If you make a separate appointment, I will provide you a zoom link for that meeting.

3 Learning Resources

3.1 Required Resources

Required Texts (Textbook)

<https://www.cengage.ca/shop/isbn/9781285866314>

Anderson, D.R., D.J. Sweeney, T.A. Williams, J.D. Camm, and K. Martin. 2016. *Quantitative Methods for Business*. 13th edition, South-Western Cengage Learning: Edition, John Wiley & Sons Inc: New York.

Earlier editions can be used. I will place one copy of the text on reserve in the library.

The following link will allow you to have direct access to purchasing either the Anderson et al text or the recommended book below.

https://www.campusbookstore.com/integration/AccessCodes/default.aspx?bookseller_id=247&Course=

You still have the option to purchase physical copies through our University Bookstore website <https://bookstore.uoguelph.ca/> .

3.2 Recommended Resources

Recommended Texts (Textbook)

Kaiser, H.M, and K.D Messer. 2012. *Mathematical Programming for Agricultural, Environmental, and Resource Economics*. John Wiley & Sons Inc: New York.

4 Learning Outcomes

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Numeracy
 - Develop mathematical models to solve problems
2. Depth and Breadth of Understanding
 - Draw upon different disciplines to gather data necessary for model solutions
3. Independence of Thought
 - Solve decision problems through the selection of alternative approaches and model construction
4. Love of Learning
 - Appreciate how decision models can be used continuously in the future
5. Forms of Inquiry
 - Understand the alternative approaches to decision making and objectives of decision

makers

5 Teaching and Learning Activities

5.1 Lecture

Topics: Lecture Content
A detailed calendar of events is posted on Courselink

Week 1

Topics: Introduction
(Chapter 1)

Week 1

Topics: Introduction to Probability
(Chapter 2)

Week 2

Topics: Probability Distributions
(Chapter 3)

Week 3

Topics: Decision Analysis
(Chapter 4)

Weeks 4-5

Topics: Introduction to Linear Programming (LP)
(Chapter 7)

Week 6

Topics: LP: Sensitivity Analysis and Interpretation of Solution
(Chapter 8)

Weeks 7-12

Topics: LP Applications
(Chapter 9-11)

6 Assessments

6.1 Marking Schemes & Distributions

Name	Scheme A (%)
Online Quizzes	30
Homework Assignments	30
Final Exam	40

Name	Scheme A (%)
Total	100

6.2 Assessment Details

Online Quizzes (25%)

There will be 10 online quizzes made available on Thursday after class and to be completed before the start of class on the following Tuesday. There will not be a quiz during Week 1, the Week 5 (Thanksgiving Weekend), Week 13 (last week of class). The quizzes will be short and cover the material discussed in class that week.

Homework Assignments (30%)

Tentative Dates:

Sept 24, 2020

October 1, 2020

October 3, 2020

October 29, 2020

November 12, 2020

November 26, 2020

Each homework assignment will consist of questions from the textbook with the total number of marks per assignment averaging around 125. Each assignment will be worth approximately 5% but the weighted average will depend on the total number of marks.

Final Exam (40%)

Date: Tue, Dec 15, 8:30 AM - , 10:30 AM, TBA

7 Course Statements

7.1 Grading Policies

Homework assignments can be worked on in groups but each group member is responsible for submitting an individual assignment. Please indicate which questions on an assignment was worked on within a group setting and who were the members of the group.

All homework assignments are due at the beginning of the class period on the date indicated. Penalties for late hand-ins of assignments will be 20 percentage points per day.

8 University Statements

8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions

<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

For Guelph students, information can be found on the SAS website
<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website
<https://www.ridgetownc.com/services/accessibilityservices.cfm>

8.6 Academic Integrity

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 encourages academic integrity. 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.

Undergraduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

8.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

8.10 Illness

The University will not require verification of illness (doctor's notes) for the fall 2020 or winter 2021 semesters.
