

General Course Information

Instructor: Chaoyi Chen
Email chaoyi@uoguelph.ca
Web See CourseLink
Office Location MacKinnon 718
Office Hours Mon, Wed, 10:00pm-11:30pm MCKN 718
Department/School Department of Economics and Finance

Class Schedule: Mon, Wed, Fri, 8:30-9:20am,
MacKinnon 117

Pre-requisites: The prerequisite for this course is a 1000-level university mathematics course. This is required to ensure that you have recent mathematical experience.

Course Description

This goal of this course is to introduce students to both probability theory and statistics, as they are used in business and economics. If we think about most of the important decisions we make in real life, they almost all involve planning for an uncertain future. Probability theory provides an intuitive and powerful tool for thinking about such decisions and consequently plays an important role in fields such as business, finance, economics, and insurance. It also forms the basis for statistics, which offers a meaningful ways to analyse the massive amounts of data available to businesses, governments, and researchers. Statistics is used to inform important decisions in areas as diverse as business marketing, financial asset allocation, pharmaceutical drug testing, monetary policy, and the pricing of insurance premiums, to name just a few examples. This course will prepare students both to conduct and understand the type of statistical analysis that is often critical to successful decision making in business and government.

Indicative Content

Please note that some topics discussed in lecture may not be included in the textbook and some topics in the readings may not be discussed in lecture. In order to do well in this course, it is strongly suggested that you both complete the readings and attend the lectures. It could be a costly mistake to assume that you can use the book as a substitute for the lectures or vice-versa. The following schedule is only approximate. Below is a preliminary list of topics covered. These may be updated as the course progresses. I will set my pace according to the comfort level of the class and may cover either more or less than what is listed below.

Approximate Week	Text book Chapters	Topic
1	1,2,3	Graphical Statistical Techniques
2	4	Numerical Descriptive Techniques

3	5	Data Collection and Sampling
4	6	Probability
5	7	Random Variables and Discrete Probability Distributions
6	8	Continuous Probability Distributions
7	9	Sampling Distributions
8	10	Introduction to Estimation
9	11	Introduction to Hypothesis Testing
10	12	Inference About a Population
11	13	Inference About Comparing Two Populations
12	16	Simple Linear Regression and Correlation
13	17	Multiple Regression (Time Permitting)

Course Assessment

			Associated Learning Outcomes	Due Date/location
Assessment 1:	25%	Mid-term Exam	Course Learning Outcomes 2,3,5,6	Saturday, October 26, 3:30pm-5:30pm in G RICH 2529 (out of class).
Assessment 2:	50% ¹	Final Exam	Course Learning Outcomes 2,3,5,6	Please see the University web page for the date and location.
Assessment 3:	25%	Maple TA practice problems	Course Learning Outcomes 2,3,5,6	Tentative due dates: Saturdays Sep 21, Oct 5, Oct 19, Nov 2, Nov 16, and Friday Nov 29.
Total	100%			

¹ The Maple TA assignments are provisional and subject to the allocation of sufficient TA and IT support as assessed at the sole discretion of the instructor. In the unfortunate event that the assignments are cancelled the midterm will be worth 35% and the final exam will be worth 65%. Unless you receive clear e-mail communication from the instructor that the assignments are cancelled, you should continue to work on the assignments.

Teaching and Learning Practices

Lectures

Lectures may be based on a combination of both pre-prepared slides, some of which may be provided on the course web page, and impromptu discussion and blackboard work. The lectures will complement, but not strictly follow, the textbook. There is no substitute for attending lecture. Attendance may be taken for informational purposes, but is not a component of the course mark. It is expected that students attend lectures.

Some of the material covered in lecture is technical in nature and students should not be discouraged if they have trouble understanding the notation or formulas the first time they see them. You will get more out of the lectures if you review the relevant lecture note slides and/or the textbook sections ahead of lecture. It is also recommended that you review your lecture notes with a paper and pencil in hand and that you try your best to work your way through the examples and formulas. Talking your way through the reasoning and intuition is also useful. You should not hesitate to ask questions in class, after class, or during office hours. The instructor and TA(s) are here to help you understand the material.

Labs

The labs will focus on the Maple TA Data Analysis Assignments near the due dates for the project and on solutions to textbook, old exam questions or problems similar to Maple TA problems on other weeks. Some lecture material may also be covered in labs from time to time. Attendance may be taken for informational purposes, but is not a component of the course mark. It is expected that students regularly attend lab and material covered in lab may be included on the midterm and final exams.

Course Resources

Required Texts:

Gerald Keller, *Statistics for Management and Economics*, Edition Nine or later. South Western. (ISBN: 9781337093453.)

A copy of the textbook has been placed on reserve at the library. Either a new or used copy of the textbook may be used, but note that versions prior to editions 9 are not supported.

Other Resources:

Outlines for some of the lecture materials covered in class will be posted on the external class web page. Links and logon information will be provided in Courselink. These lecture/slide outlines are neither complete nor self-explanatory. You will get the most out of them if you print them out, read them ahead of time, and then bring them with you to class.

Course Policies

Policy on Section Coordination: You are required to attend the section and lecture that you have been assigned and to buy the textbook corresponding to your section. My section(s) of the course are NOT coordinated with any other Professors' section(s). We may use different textbooks, different lecture material, different lab content, different tests, and different grading schemes.

Midterm Policies (includes grading policies)

The midterm exam covers all aspects of the course, including the lectures, sections, assignments, and reading. However, some sections of the textbook will be emphasized more heavily than others. The best way to gauge which topics are emphasized is through regular attendance in lecture and lab. Practicing questions from past exams is also highly recommended. These can be found on the course web page.

The midterm for all of Maynard's sections will be held at the same time.

The Midterm will be held out-of-class (see course assessment above). A make up exam will be scheduled for students with a doctor's note or who have notified their instructor by e-mail of a legitimate conflict prior to the exam. Please bring a signed letter with you to the make up exam stating the reason for the missed exam and attaching appropriate documentation (such as a doctor's note). Be sure to keep a photocopy for your records. For students who miss both the midterm and the make up midterm exam for a legitimate reason, the course assessment will be re-weighted so that the final exam mark replaces the midterm mark.

Final Exam Policies (includes grading policies)

Please also note that the final exam is a cumulative exam. It covers the entire semester and all aspects of the course. You are strongly encouraged to practice questions from old final exams posted on the course web page. The final for all sections will be held at the same time (see course assessment above).

Maple TA Problems

This is the third year that we are introducing Maple TA problems as part of a trial pilot project. The Maple TA assignments are provisional and subject to the allocation of sufficient TA and IT support as assessed at the sole discretion of the instructor. In the unlikely event that it is cancelled the marks will be relocated in the manner explained in the footnote to the course assessment. If it is cancelled, you will receive clear e-mail notification of the cancellation directly from your instructor. Otherwise, your participation is mandatory.

The Maple TA assignments are subject to a 48-hour automatic grace period and the lost of the assignments marks will be automatically dropped. Note well that the official due date is the one announced by the instructor. The due date shown on Maple TA may already incorporate the grace period. In all but exceptional circumstances, this should allow enough flexibility to accommodate any unforeseen events that could otherwise impact your work. In fairness to the vast majority of students who are responsible in handing in their work on time, Maple TA assignments will not be accepted after the grace period. Any special academic consideration requested must convincingly document why the grace period and dropped assignment do not already provide sufficient accommodation.

Policy on Re-grade Request

Any request to remark term tests or assignments must be addressed to your instructor in writing (hard copy) within six weeks and must include the following (i) your name, contact information (telephone and email), and signature, (ii) a clear description of where and why you feel that you were graded in error, and (iii) the following statement exactly as it appears here "In requesting a re-grade I certify that I have not written on, erased, or in any way changed my copy of the exam/assignment since it was handed back to me. I understand that to do so would constitute a serious academic offense. I also understand that my entire exam/assignment will be re-graded (with particular attention paid to the points that I have brought up) and understand that as a result my score on the exam/assignment could fall as well as rise."

Policy on Digital Recording

No digital or electronic recording of any kind may be made during either lectures or labs without explicit written permission from the course instructor.

Policy on Electronic Devices

Both your physical and mental presence is required during lecture. Accordingly, electronic devices may not be employed during class without explicit written permission from the instructor. Students using electronic devices without permission may be asked to move to the front row or leave the classroom.

University Policies

Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for

Academic Consideration: <http://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.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/>

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 Centre for Students with Disabilities as soon as possible.

For more information, contact CSD at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: <http://www.csd.uoguelph.ca/csd/>

Course Evaluation Information

Please refer to: <https://www.uoguelph.ca/economics/course-evaluation>

Drop date

The last date to drop one-semester courses, without academic penalty, is **November 29, 2019**. For regulations and procedures for Dropping Courses, see the Academic Calendar:

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/>

Course Learning Outcomes

Skills:

1. Analytical Problem Solving – Both the textbook and lectures include examples showing how to solve problems in statistics and probability. The required Maple TA assignments, and the optional problems and problems from old exams posted on the course web page provide hands on practice. Both the midterm and final exams include problem solving as a core component.
2. Problem Solving in a Real World Context - Virtually all of the problems that students tackle in this course have direct relevance to real world problems. For example, hypothesis testing has a wide range of applications, such as evaluating a manufacturers claim that say the average life of its tyres is 90,000 kilometres or examining the claim that household incomes in two cities are identical. The textbook, lectures, optional problems and old exam problems all provide practice with problem solving in a real world context. Both the midterm and final exam include this as core components.

Knowledge and Understanding:

3. Mathematical Methodology (calculus, algebra, optimisation, etc.). Both probability and statistics involve extensive use of mathematics. Thus both the textbook and lectures develop new mathematical concepts and applications. These ideas are reinforced via the optional assignments and questions from old exams and tested on both the midterm and final.
4. Statistical and Econometric Methodology (including basic data analysis, sampling, probability, hypothesis testing, confidence intervals, regression analysis, robustness). Both the lectures and textbook cover basic data analysis, sampling, probability, hypothesis testing, confidence intervals, and regression analysis. These topics are reinforced via the Maple TA assignments and optional questions from old exams and tested on both the midterm and final.