Course Outline Form: Winter 2018

General Information

Course Title: STAT*2060: Statistics for Business Decisions

Course Description: This course is designed for students interested in the application of statistics in a business setting. Topics covered will include the role of statistics in business decisions, organization of data, frequency distributions, probability, normal and sampling distributions, hypothesis tests, linear regression and an introduction to time series, quality control and operations research.

Prerequisites: (4U mathematics or equivalent) or 0.50 credit in mathematics
Restrictions: STAT*2040, STAT*2080, STAT*2120. Not available to B.Sc. students
Credit Weight: 0.5 credit
Academic Department (or campus): Mathematics & Statistics
Campus: Guelph
Semester Offering: Winter
Class Schedule and Location: M/W/F, 3:30pm – 4:20pm, MACN 105.

Instructor Information

Instructor Name: Dr. Lorna Deeth
Instructor Email: ldeeth@uoguelph.ca
Office location and office hours: MACN 548. Office hours are M/W/F, 1:00pm – 3:00pm.

GTA Information

Assignment queries and test/project regrade requests only can be sent to stat2060@uoguelph.ca . Instructions for submitting a regrade request will be posted on Courselink. Note that questions regarding course content or general course questions will not be answered through this email account.

Course Content

Specific Learning Outcomes:

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

- create and properly interpret numerical and graphical data summaries.
- properly interpret probability and carry out basic probability calculations.
- carry out probability calculations for various discrete and continuous probability distributions, and choose the appropriate probability distribution in different scenarios.
- explain statistical inference concepts and methods, including concepts related to sampling distributions, confidence intervals, and hypothesis tests.
- choose an appropriate statistical inference procedure in a variety of situations, carry out the procedure, and effectively communicate a proper interpretation of the results.
- explain the design of some basic experiments and observational studies, and describe how statistical conclusions differ between experiments and observational studies.
- conduct a linear regression analysis, including statistical inference procedures on the model parameters, and provide a proper interpretation of the results.

Lecture Content:

Week 1: January 8 – 12	Course overview, Chapter 1, Sections 2.1 – 3.2
Week 2: January 15 – 19	Sections 3.3 – 3.5
Week 3: January 22 – 26	Sections 4.1 – 4.3, 5.1 – 5.3 **SELF STUDY**: Sections 4.4, 4.6
Week 4: January 29 – February 2	Sections 5.5, 5.7, 6.1 – 6.2
Week 5: February 5 – 9	Sections 6.4 – 6.5, 7.1 – 7.4
Week 6: February 12 – 16	Sections 8.1 – 8.4
READING WEEK: February 19 – 23	
Week 7: February 26 – March 2	Sections 9.1 – 9.3 **SELF STUDY**: Sections 9.4, 9.5
Week 8: March 5 – 9	Sections 9.6 – 9.7, 9.9 – 9.10, 10.1 – 10.3 **SELF STUDY**: Sections 9.8
Week 9: March 12 – 16	Sections 10.4 – 10.5, 11.1 – 11.3
Week 10: March 19 – 23	Sections 11.4 – 11.5, 13.3
Week 11: March 26 – 30*	Sections 15.1 – 15.4
Week 12: April 2 – 6	Sections 15.4 cont'd – 15.7, 15.12 (if time) **SELF STUDY**: Sections 15.9, 15.11

*Note 1: No lecture on Friday, March 30 due to holiday.
**Note 2: Not all topics in every section will be covered in class. Textbook sections, and corresponding supplemental exercises, that can be excluded are listed in the document *STAT2060 Textbook Notes*, available on Courselink.

The schedule above is approximate, and subject to minor changes. The majority of course content will be covered in lectures. However, there are several shorter topics which students will be responsible for learning on their own. These topics are identified by the "**SELF STUDY**" label.

Course Assignments and Tests:

Course Component	Date	Time	Location	Weight
Assignment 1	Thursday, January 18	Due by 11:59pm	Online	10% (best 7 of 8, all assignments are equally weighted)
Assignment 2	Thursday, January 25	Due by 11:59pm	Online	
Assignment 3	Thursday, February 8	Due by 11:59pm	Online	
Assignment 4	Thursday, February 15	Due by 11:59pm	Online	
Assignment 5	Thursday, March 8	Due by 11:59pm	Online	
Assignment 6	Thursday, March 15	Due by 11:59pm	Online	
Assignment 7	Thursday, March 29	Due by 11:59pm	Online	
Assignment 8	Thursday, April 5	Due by 11:59pm	Online	
Data Project 1	Monday, February 12	Due by 11:59pm	Online	5%
Data Project 2	Monday, April 2	Due by 11:59pm	Online	5%
Term Test 1	Friday, February 2	3:30pm – 4:20pm	MACN 105	15%
Term Test 2	Friday, March 2	3:30pm – 4:20pm	MACN 105	15%
Term Test 3	Friday, March 23	3:30pm – 4:20pm	MACN 105	15%
Final Exam	Tuesday, April 10	2:30pm–4:30pm	TBA	35%

Course Resources

Required Text:

Introductory Statistics Explained, by J. Balka. This document is available in PDF format on Courselink.

Other Resources:

***Lecture notes*:** A set of incomplete lecture notes will be posted on Courselink. It is expected students will have a copy of these notes available, and will fill them in during lectures. Completed lecture notes will not be posted online.

THE LECTURE NOTES ARE FOR INDEPENDENT USE ONLY, AND ARE NOT TO BE RE-DISTRIBUTED IN ANY FORM WITHOUT MY WRITTEN PERMISSION.

***Unit Exercises*:** There are exercises and solutions available on Courselink for all topics in the course. It will be assumed students are working through these exercises after each lecture, to help consolidate the information discussed in class. Students are strongly encouraged to seek help as soon as possible when problems arise.

Microsoft Excel: This course will make use of Microsoft Excel 2016, available as part of Office 365 package to which all University of Guelph students have access. Information about how to access Microsoft Excel through Office 365 is on the CCS website:

https://www.uoguelph.ca/ccs/office365/training/online-training-resources/getting-started-with-office365#howInstall

IMPORTANT NOTE: Students are expected to use Microsoft Excel 2016. All instructions and support for using Microsoft Excel within the course will only be available for the 2016 version of the software. Students who choose to use an older, unsupported version of Microsoft Excel will be required to find their own resources.

Learning Centre: Drop-in help is available in the Statistics Learning Centre (Science Commons, 3rd floor of the library) for students seeking help with course content and/or assignments. Hours of operation are Monday/Wednesday: 9:30am – 3:30pm, Tuesday/Thursday: 10am – 4pm, Friday: 9:30am – 2:30pm. Students are expected to use the Statistics Learning Centre as a primary resource for help with course material.

Calculators: Students are required to obtain (and know how to use!) a good, multi-variable calculator. Calculators will be needed to write the terms tests and final exam. I also recommend that you bring a back-up calculator to all evaluations.

Courselink: Course information and resources will be available on Courselink. Students are encouraged to check the website regularly for updated information and announcements.

Course Policies

Communication Policies: My preferred method of communication is in-person or by email. For email communication, you must use your University of Guelph email account. Use STAT*2060 in your subject line, and include your name and student ID number in all correspondence. Emails that do not include a name and ID number, or from non-uoguelph accounts, will not be answered; otherwise, I will try to respond to emails within 3 business days. Please note that only administrative inquiries will be answered via email; questions regarding assignments, course content, etc. will only be answered during office hours, on the discussion board, or in lecture.

Grading Policies:

***Online Assignments*:** Assignments are done through an online assessment system. Students will have 4 attempts for each assignment, with the highest attempted mark counting as the assignment grade. **Students are expected to complete all online assignments**. The best 7 marks of the 8 assignments will be used in the calculation of the final grade; the lowest assignment mark will be discarded. This is to account for various problems

(computer issues, poor performance on a particular assignment, illness, overloaded schedule, etc.), and is the only accommodation that will be made. No late assignments will be accepted, and missed assignments will automatically receive a grade of 0.

Data Analysis Projects: Details regarding each of the data analysis projects will be posted on Courselink. Projects must be handed in by the posted due date/time. No late projects will be accepted, and missed projects will automatically receive a grade of 0.

***Term Tests*:** All term tests are held during lecture, therefore no students should have a conflict with the test dates. If you do have a conflict, it is up to you to resolve it. Students who miss a test for a valid, documented reason (such as a medical illness) must contact me within 5 business days of the missed test, and provide the appropriate documentation. In this situation, a student's final exam will be reweighted to make up for the missed test.

The final exam (date, time and location) is scheduled by the Registrar's Office. Students who miss the final exam due to a valid, documented reason must contact their program counsellor for advice on University regulations regarding final exams. These procedures are based on University policy, and are not under the control of the course instructor.

The format of the term tests and the final exam will be posted at a later date. Students will be allowed a stand-alone calculator (i.e. must not be part of a cell phone, laptop, etc.), and are permitted to have **one single-sided** letter size (8.5'' X 11'') reference page for each of the three term tests (that is, ONE single-sided 8.5" X 11" reference page **per term test**). Students are allowed **one double-sided** 8.5" X 11" reference page for the final exam. Reference pages must be handwritten. Any required statistical values will be provided. No other resources are permitted.

In order to uphold the University of Guelph's academic integrity standards, the term tests will be scanned and digitally stored before graded tests are returned to the students. Any work that is submitted for regrading will be compared to the corresponding digital copy. Note that in the event that a student submits a test for regrading, I reserve the right to regrade the entire test, not just the question under consideration. Procedures for submitting a regrade request will be posted on Courselink.

Regrade requests must be submitted within two weeks of an assignment/project/test being returned, after which regrade requests may no longer be submitted, and the assignment/project/test grade is final.

Course Policy on Group Work:

Students are encouraged to work together to discuss course content, share ideas, and ask/answer questions. However, all submitted work must be done **independently**. Completing another student's work, or having another student complete your work, will constitute academic misconduct. All assignments, data projects, term tests, and the final exam are to be completed independently.

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:

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:
http://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 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.uoguelph.ca/csd/

Course Evaluation Information:

Please see https://mathstat.uoguelph.ca/sites/uoguelph.ca.mathstat/files/public/TeachevaluationformW16_1.pdf

Drop date:

The last date to drop one-semester courses, without academic penalty, is **Friday, March 9, 2018**. For regulations and procedures for Dropping Courses, see the Academic Calendar:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml

Mental Health Services:

One out of every five students in Canada experiences some sort of mental health issue at some point in their academic career. If you find yourself facing a mental health crisis, or just need to talk to someone, please consider taking advantage of one of the following resources available to University of Guelph students:

Counseling Services: (x53244) is located at Health Services (J.T. Powell Building) and offers individual and group counselling sessions by appointment or walk-in.

Student Support Network: is located in Raithby House (across from the cannon and offers confidential, peer-based, drop-in support.

Good2Talk: (1-866-925-5454) is a free, 24/7 student hotline that provides professional counselling and referrals for mental health, addictions and well-being.

Here 24/7: (1-844-437-3247) specializes in assessment, referral and appointment booking and is available 24/7 for crisis support.

You are not alone and you will not be judged for asking for help.

Additional Course Information

Any additional information regarding the course, including (but not limited to) important announcements, assignment information, test room confirmations, etc., will be posted on Courselink. Students are encouraged to check this website daily for any new information.