Course Outline Form: Winter 2016

General Information

Course Title: STAT*2090: Introductory Applied Statistics II

Course Description: The topics covered in this course include: analysis of qualitative data; analysis of variance for designed experiments; multiple regression; exposure to non-parametric methods; power and sample size calculations; special topics such as logistic regression. Examples come from a variety of disciplines, including nutrition, family studies, education, marketing, medicine, psychology and sociology.

Prerequisites: STAT*2080
Exclusions: BIOL*2250, STAT*2050, STAT*2250

Credit Weight: 0.5 credit

Academic Department (or campus): Department of Mathematics & Statistics
Campus: University of Guelph
Semester Offering: Winter

Class Schedule and Location: Monday, Wednesday, Friday, 10:30am – 11:20am in THRN 1200

Instructor Information

Instructor Name: Dr. Lorna Deeth
Instructor Email: ldeeth@uoguelph.ca, or by phone at ext. 53034 (no voicemail!).
Office location and office hours: MACN 548. Office hours are Tuesdays and Thursdays, 1:30 – 3:30pm, or by appointment.

GTA Information

GTA Name: Matthew Stephenson (stephenm@uoguelph.ca, office hours by appointment only)
All grading queries, including test regrade requests, can be directed to Matthew.

Course Content

Specific Learning Outcomes:

This course consolidates basic concepts of statistical reasoning, basic methods of exploratory data analysis and statistical inference introduced in STAT*2080 and broadens the scope of applications to complex experimental designs and to survey sampling. The concepts and methods are important in view of societal's increasingly heavy use of data in personal, corporate and governmental decision making as well as the obvious need in scientific investigation. Quantitative literacy is central to literacy, numeracy, understanding of forms of inquiry, and independence of thought.

Specific learning objectives are:

- carry out basic model building and model validation.
- application of different statistical models and procedures to problem solving.
- be able to read critically research papers and the print media.
- understand basic experimental designs, the clear interpretation and their relevance to efficient investigations.
- understand principles of experimental and survey designs and how they relate to obtainable information.

Lecture Content:

Week 1: January 11 – 15	Course overview, section 7.2
Week 2: January 18 – 22	Sections 6.4, 8.1
Week 3: January 25 – 29	Sections 8.2, 9.1
Week 4: February 1 – 5	Sections 9.2, 10.1
Week 5: February 8 – 12	Sections 10.2 (start 11.1 time permitting)
READING WEEK: February 15 – 19	
Week 6: February 22 – 26	Sections 11.1, 11.2
Week 7: February 29 – March 4	Sections 12.1, 12.2
Week 8: March 7 – 11	Sections 12.2 cont'd, RCBD (lecture only)
Week 9: March 14 – 18	Sections RCBD cont'd, 13.1
Week 10: March 21 – 25*	Sections 13.1 cont'd, 13.2
Week 11: March 28 – April 1	Sections 14.1, 14.2
Week 12: April 4 – April 8	Sections 14.2 cont'd, review

*Note: Shortened week due to holiday on Friday, March 25.

The schedule above is approximate, and subject to minor changes. The majority of course content will be covered in lectures. However, students are responsible for all of the content listed above, regardless of the extent to which it was discussed in class. Any sections that are to be excluded, and for which students are not responsible, will be posted on Courselink.

Course Assignments and Tests:

Course Component	Date	Time	Location	Weight
Assignment 1	Thursday, January 21	Due by 11:59pm	Courselink	15% (best 7 of 8, all assignments are equally weighted)
Assignment 2	Thursday, January 28	Due by 11:59pm	Courselink	
Assignment 3	Thursday, February 4	Due by 11:59pm	Courselink	
Assignment 4	Thursday, February 25	Due by 11:59pm	Courselink	
Assignment 5	Thursday, March 3	Due by 11:59pm	Courselink	
Assignment 6	Thursday, March 10	Due by 11:59pm	Courselink	
Assignment 7	Thursday, March 24	Due by 11:59pm	Courselink	
Assignment 8	Thursday, March 31	Due by 11:59pm	Courselink	
Term Test 1	Monday, February 8	5:30 – 6:50pm	TBA	20%
Term Test 2	Monday, March 14	5:30 – 6:50pm	TBA	20%
Final Exam	Monday, April 11	7:00 – 9:00pm	TBA	45%

Course Resources

Required Text: *Introduction to the Practice of Statistics* (8th edition) by Moore, McCabe, and Craig. Two copies of the textbook are also available on reserve in the library.

Other Resources:

Calculator: All students are expected to have a single-variable (or multi-variable) calculator, capable of performing basic statistical functions.

Lecture notes: A weekly 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.

Courselink discussion boards: Discussion boards have been created for each assignment, as well as general questions/help. Students are encouraged to post questions and discussion comments, however the explicit posting of assignment solutions is forbidden. The discussion boards will be monitored for content and accuracy, and to ensure University of Guelph standards of respect and academic integrity are upheld.

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.

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*2090 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 2 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 or in lecture.

Grading Policies:

Assignments: A PDF of assignment questions will be posted on Courselink approximately one week before the assignment deadline. Assignment answers will be submitted online, via a corresponding "quiz" on Courselink. Students will have an unlimited number of attempts to submit their assignments online, however the **final** submission will count toward the assignment grade. The best 7 marks on 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**.

Tests: Both term tests are held over the dinner hour with the intention of minimizing conflicts. Students who have a conflict due to a regularly scheduled class, lab, or other academic commitment must contact me as soon as possible to make arrangements for an alternate test sitting. Students who miss a test due to illness or other short-notice conflict must contact me within 3 business days of the missed test and provide appropriate documentation. In this situation, the weight of the missed term test will be added to the weight of the final exam.

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.

Tests will be a combination of multiple choice and written answer, while the final exam will be entirely multiple choice (computer-marked). Students are permitted **one** double-sided 8.5 x 11 (letter size) reference page for Term Test #1, **two** such pages for Term Test #2, and **three** such pages for the final exam. You are free to write whatever you would like on your reference pages. Any required statistical tables will be provided. For both the term tests and the final exam, students will be allowed a stand-alone calculator, however cell phones and/or laptop computers may not be used as calculators during the midterm or exam, and will be confiscated.

In order to uphold the University of Guelph's academic integrity standards, the written components from both 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 to ensure no changes have been made. Note that in the event that a student submits a test for regrading, I reserve the right to regrade the entire written component of the test, not just the question under consideration.

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 (including online quizzes) must be done **independently**; completing another student's work, or having another student complete your work, will constitute academic misconduct.

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 http://www.mathstat.uoguelph.ca/files/TeachevaluationformF10.pdf

Drop date:

The last date to drop one-semester courses, without academic penalty, is **Friday, March 11, 2016**.
For regulations and procedures for Dropping Courses, see the Academic Calendar:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml

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.