



**College Engineering and Physical Sciences  
Department of Mathematics and Statistics**

**STAT\*2080: Introductory Applied Statistics I (0.5 credit)  
Course Outline for Fall 2021**

**Instructor:** Faisal Khamis  
E-mail: [fkhamis@uoguelph.ca](mailto:fkhamis@uoguelph.ca)

**Disclaimer:**

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

**Illness**

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).

**For information on current safety protocols, follow these links:**

<https://news.uoguelph.ca/return-to-campuses/how-u-of-g-is-preparing-for-your-safe-return/>  
<https://news.uoguelph.ca/return-to-campuses/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.

**Lectures:**

- Online lectures using virtual classroom on the CourseLink.
- The students will be invited by a link to join live lecture on a specific day and time (**attendance is optional**) and all lectures will be recorded to be posted on the CourseLink.
- Courselink: <https://courselink.uoguelph.ca/d2l/home/716704>

**Calendar Description:**

The topics covered in this course include: Frequency distributions, graphing and tabulation of data; measures of central tendency, variability and association; elementary probability; hypothesis testing and confidence intervals; basic concepts of experimental design; treatment designs; simple linear regression and correlation. Examples come from a variety of disciplines, including family studies, education, marketing, medicine, psychology and sociology.

**Prerequisites:** (4U mathematics or equivalent) or 0.50 credit in mathematics.

**Restrictions:** STAT\*2040, STAT\*2060, STAT\*2230, STAT\*2120. BSc students cannot take this course for credit.

**Course Materials:**

- **10<sup>th</sup> edition** of Introduction to the Practice of Statistics by Moore, McCabe, and Craig. 2021
- STAT\*2080 lecture notes (would be posted on the Courselink site)

**Calculator:**

Your calculator should be able to calculate at least one-variable statistics. If you're not sure about your calculator, please just ask me.

**Course Description and Objectives:**

Statistical reasoning is used widely for establishing social policy, health research, evaluation of foods, political forecasting, etc. Researchers are faced with the questions of how to design surveys and experiments; how to obtain valid data; how to analyse the data properly; how to make relevant interpretations. This course examines some of these questions and attempts to start answering them. It recognizes the importance of having a quantitatively literate citizenry and it will help you understand the importance of developing skills in the critical reading of your area of study as well as the popular media. By the end of the course you should:

- be familiar with the basic vocabulary of Statistics;
- be able to calculate descriptive statistics and perform exploratory data analyses;
- be able to investigate relationships between two variables;
- know basic study designs;
- understand randomness and probability and be able to apply probability rules;
- be able to calculate the mean and variance of a random variable;
- understand population distributions and sampling distributions;
- understand and be able to apply basic confidence intervals and hypothesis testing;
- be able to use and understand output from SPSS for basic statistical analyses.

We will work through most of the first seven chapters of the textbook, *Introduction to the Practice of Statistics, 10<sup>th</sup> Edition*. The answers for odd-numbered exercises in the text are given at the end of the book. Do as many of these as you feel you need in order to understand the concepts and techniques covered in the course.

**Marking Scheme and Exam Dates:**

Assignments	20%	2 assignments, 10% each; due dates are shown in the Course Schedule Section.
Quizzes	16%	Online 2 quizzes, 8% each (60 minutes), you will be able to have 2 attempts in each quiz and the highest attempt will be recorded; due dates are shown in the Course Schedule Section.
Midterm Exam	24%	Online, (90 minutes); Wednesday, Oct 13 at any time during the timeframe (5 hours) 11:00 am – 4:00 pm.
Final Exam	40%	Online (120 minutes); Monday, Dec 6 at any time during the timeframe (one hour) 2:30 pm – 3:30 pm.

**NOTE:** You should have **NO** conflicts concerning these dates and times. If you do it is your responsibility to resolve them as soon as possible.

### **POLICY for Missed Exams:**

If you miss an exam during the semester for a **documented** valid reason (e.g., medical illness) you will get one chance to write a deferred exam.

If you miss the final exam for any reason, you must see your program counsellor. University regulations require specific procedures to be followed regarding the conduct of final exams, including recourse, if any, for missed final examinations. These procedures are out of my control.

### **Exam Calculator:**

You must have a stand-alone calculator for all tests and the final exam. You will **not** be permitted to use a calculator on smartphone. If you are discovered to be using anything but a stand-alone calculator during a test or the final exam, it will be reported as possible academic misconduct.

### **Assignments:**

The assignments support and supplement the lectures. Working through examples and assigned problems is the key to success in the course. You are responsible for doing your own work. It is definitely beneficial to work with others but getting another student to do your assignment for you is an academic misconduct.

We will be using the Courselink site for assignment distribution. You can get access by going to <http://courselink.uoguelph.ca/> and then you log in using your university account login and password (the one you use for Gryph Mail). Assignments will be made available to you via pdf files on the STAT\*2080 Courselink site. Assignments will be submitted and returned electronically through CrowdMark. You'll receive a template via email to your University of Guelph email account; you will upload pdf or jpg files with your solutions to this template. Details on submission will be posted on our Courselink. We will have two equally weighted assignments.

### **Late Policy:**

Extensions on the assignments will be considered for medical reasons or other extenuating circumstances. If you require an extension, discuss this with the instructor as soon as possible and well before the due date. Barring exceptional circumstances, extensions will not be granted once the due date has passed. These rules are not designed to be arbitrary, nor are they inflexible. They are designed to keep you organized, to ensure that all students have the same amount of time to work on assignments, and to help to return marked materials to you in the shortest possible time.

### **Teaching Assistants:**

Rocky Narang	<a href="mailto:rnarang@uoguelph.ca">rnarang@uoguelph.ca</a>
Matthew Stoodley	<a href="mailto:mstoodley@uoguelph.ca">mstoodley@uoguelph.ca</a>
Sofiya Makar	<a href="mailto:smakar@uoguelph.ca">smakar@uoguelph.ca</a>
Patrick McMillan	<a href="mailto:pmcmilla@uoguelph.ca">pmcmilla@uoguelph.ca</a>
Keana Shahin	<a href="mailto:kshahinm@uoguelph.ca">kshahinm@uoguelph.ca</a>

Please contact any TA for online appointment (their office hours will be posted on the Announcement page of the Courselink) in case you have any difficulties in understanding the materials and for assignments and exams feedback.

**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 classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

**E-mail Communication:**

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

**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 regulations and procedures for [Academic Consideration](#) are detailed in the Undergraduate Calendar.

**Drop Date:**

Students will have until the last day of classes (Friday, Dec. 3th) to drop courses without academic penalty. Review the Undergraduate Calendar for regulations and procedures for Dropping Courses.

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

**Copies of 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.

**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.

For more information, contact [Student Accessibility Services](#) at 519-824-4120 ext. 56208 or email [accessibility@uoguelph.ca](mailto:accessibility@uoguelph.ca)

**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

### Resources:

The [Academic Calendars](#) are the sources of information about the University of Guelph's procedures, policies and regulations that apply to undergraduate, graduate and diploma programs.

### Tentative Course Schedule (subject to change):

Dates	Topics	Textbook	Assignments
Week 1 (Sep 9-19)	Data; Displaying distributions with graphs; Describing distributions with numbers	Chapter 1	Quiz 1 (8%); <b>due Sep. 26</b> at 11:59pm
Week 2 (Sep 20-26)	Density curves and Normal distributions		
Week 3 (Sep 27 - Oct 3)	Scatterplots; Correlation; Least-squares regression; Cautions about correlation and regression; The question of causation	Chapter 2	Assignment 1 (10%) in Chs. 2 and 3; <b>due Oct. 8</b> at 11:59pm
Week 4 (Oct 4-8)	Sources of data; Design of experiments; Sampling design	Chapter 3	
Week 5 (Oct 9-12)	<b>Break – No class</b>		
Week 6 (Oct 13-17)	<b>Online Midterm Exam (24%); Time limit is 90 minutes Wednesday, Oct 13 at any time during the timeframe 11:00 am – 4:00 pm</b>		
Week 7 (Oct 18-24)	Toward statistical inference; Randomness; Probability models	Chapter 4	Quiz 2 in Chs. 4 and 5 (8%); <b>due Nov. 14</b> at 11:59pm
Week 8 (Oct 25-31)	Random variables; Means and variances of random variables		
Week 9 (Nov 1-7)	The sampling distribution of the sample mean	Chapter 5	
Week 10 (Nov 8-14)	Sampling distributions for counts and proportions		
Week 11 (Nov 15-21)	Estimating with confidence	Chapter 6	Assignment 2 (10%) in Ch. 6; <b>due Nov. 28</b> at 11:59pm
Week 12 (Nov 22-28)	Tests of significance		
Week 13 (Nov 29-Dec 5)	Inference for the mean of a population	Chapter 7	
Week 14 (Dec 6-17)	<b>Online Final Exam (40%) in Chs. 4-7; Time limit is 120 minutes; Monday, Dec 6 at any time in the timeframe (1 hr.) 2:30 pm – 3:30 pm</b>		

### Online Behaviour:

Inappropriate online behaviour will not be tolerated. Examples of inappropriate online behaviour include:

- Posting inflammatory messages about your instructor or fellow students
- Using obscene or offensive language online
- Copying or presenting someone else's work as your own
- Adapting information from the Internet without using proper citations or references
- Buying or selling term papers or assignments

- Posting or selling course materials to course notes websites
- Having someone else complete your quiz or completing a quiz for/with another student
- Stating false claims about lost quiz answers or other assignment submissions
- Threatening or harassing a student or instructor online
- Discriminating against fellow students, instructors and/or TAs
- Using the course website to promote profit-driven products or services
- Attempting to compromise the security or functionality of the learning management system
- Sharing your username and password
- Recording lectures without the permission of the instructor

### **Recording of Lecture Materials:**

The University of Guelph's primary mode of course delivery has shifted from face-to-face instruction to remote and online learning due to the ongoing COVID-19 pandemic. As a result, some learning activities (e.g., synchronous lectures or student presentations) may be recorded by faculty, instructors and TAs and posted to CourseLink for grading and dissemination; students may be recorded during these sessions.

By enrolling in a course, unless explicitly stated and brought forward to their instructor, it is assumed that students agree to the possibility of being recorded during lecture, seminar or other "live" course activities, whether delivery is in-class or online/remote.

If a student prefers not to be distinguishable during a recording, they may:

1. turn off their camera
2. mute their microphone
3. edit their name (e.g., initials only) upon entry to each session
4. use the chat function to pose questions.

Students who express to their instructor that they, or a reference to their name or person, do not wish to be recorded may discuss possible alternatives or accommodations with their instructor.

### **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:

**Counselling Services:** Visit the Counselling Services website (<https://wellness.uoguelph.ca/counselling>) to get information on resources available to you, both online and in-person. You can also visit them at Health Services (J.T. Powell Building, ext 53244) where they offer individual and group counselling sessions by appointment or walk-in.

**Student Support Network:** is located in the Wellness & Education Promotion Centre in the J.T. Powell Building and offers confidential, peer-based, drop-in support.

**Good2Talk:** ([1-866-925-5454](tel: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](tel: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.