University of Waterloo
Department of Statistics & Actuarial Science
AFM 113 - Analytic Methods 2 for Business
Spring 2021

Course Information:

Instructor	**Gracia Dong**
Lectures	Posted on Learn
Office hours	I will have drop-in office hours every Tuesday from 1-2pm https://uwaterloo.webex.com/uwaterloo/j.php?MTID=m8a90a786cc013ec55939ffd21d67a125, password: AFM113, meeting #: 172 571 7316 Additional office hours can be booked via email with me (gracia.dong@uwaterloo.ca) or your TA Rongfeng (r7cui@uwaterloo.ca) • I am in EST and generally free afternoons/evenings • Rongfeng is located in China this term, and is free during the day there (so early morning/very late at night for those of us in EST)
Email	gracia.dong@uwaterloo.ca You can expect a response to emails within 48 hours Monday-Friday.
Piazza Sign-up Link	www.piazza.com/uwaterloo.ca/spring2021/afm113
Weekly Tutorial (Live)	Wednesdays 12:30 to 1:50pm EST, hosted on Webex

Announcements and all course related material will be posted on Learn. If you have a question regarding course content your best option is to post your question on Piazza. You are also encouraged to attend office hours. If your question/concern is more personal (e.g. illness), please e-mail your instructor.

Weekly Tutorial (Live):

These will be held on Wednesdays from 12:30 to 1:50pm EST each week. Your instructor will use this time to:

- Do a quick review of concepts covered that week,
- Do some practice questions,
- Go over R concepts, or
- Respond to any common questions posted on Piazza.

Video recordings of these sessions will be made available.

Required Course Material:

Lessons and instructional videos:

Weekly lessons have been created by your instructor and will be uploaded for each week on Learn. This is your main resource for topics discussed in the course. Some instructional videos may also be posted to clarify difficult concepts. Only material covered in these lessons, any videos uploaded, and weekly tutorials are going to be tested.

Textbook:

- Introductory Statistics Explained, by Jeremy Balka. An electronic version is available on LEARN.
- Students will be expected to read the recommended text sections to complement the lessons.
- Lesson material and content may deviate from the order and presentation of the text.
- Lessons also refer to suggested practice exercises that can be found in the complementary Exercise manual.

R software package: This course will use R Studio. You can download R studio (Free version) by following the steps outlined below:

1. Download R, available at the following link: https://www.r-project.org (Note: when asked to select the CRAN, University of Toronto is the closest to us)
2. Download R studio, available at the following link: https://www.rstudio.com/products/rstudio/download/.

Course Description:
Descriptive statistics, probability, discrete and continuous random variables and probability distributions, sampling distributions, confidence intervals and hypothesis tests for population means and proportions, hypothesis tests for count data (time permitting), introduction to simple linear regression.

Course Objectives:

- To gain a basic understanding of probability, and the role of probability in statistical inference.
- To define and apply statistical concepts and techniques needed to carry out a statistical study and to answer relevant questions in any given area of interest.
- To gain an understanding of statistical concepts to be able to critically evaluate, understand and correctly interpret statistical studies reported in the media, scientific articles, and all around us.
- To program in R so that you can adequately run your own code, perform analysis and interpret output.

Assessments:
Schedule:

Week	Week Starting	Assessment/Event	Assessment Date
1	May 10, 2021	Bonus quiz 1 (Learn practice quiz/Get to know you)	Friday, May 14
2	May 17, 2021	Quiz 1	Friday, May 21
3	May 24, 2021	Quiz 2	Friday, May 28
4	May 31, 2021	Quiz 3	Friday, June 4
5	June 7, 2021	Quiz 4	Friday, June 11
6	June 14, 2021	Quiz 5	Friday, June 18
7	June 21, 2021	Midterm	Friday, June 25
8	June 28, 2021	Bonus quiz 2 (Informal course evaluation)	Valid Monday, June 28-Sunday, July 4
9	July 5, 2021	Quiz 6	Friday, July 9
10	July 12, 2021	Quiz 7	Friday, July 16
11	July 19, 2021	Quiz 8	Friday, July 23
12	July 26, 2021	Quiz 9	Friday, July 30
13	August 2, 2021	No tutorial: August 4 follows a Thursday schedule	
14	August 9, 2021	Final Exam	To be held during August 7 - 16

Grading Scheme:
Every student is treated the same way according to the grading scheme below.

Assessment type	Weight
Quiz (Best 8 out of 9)	8*5% = 40%
Bonus Quiz	2*1% = 2%
Midterm	25%
Final Exam	35%
Total	102%

In addition to passing the course according to the weights above, you must achieve 50% on the weighted average of the midterm and final exam.

Learn Quizzes:
There are 9 Learn quizzes in total, on Fridays. The purpose of these is to help keep you on track with learning the course concepts and a check in to ensure that you understand the topics covered. The quizzes are NOT cumulative, and each quiz will be available for **one day (12:00am to 11:59pm)**. You will have one attempt for each quiz and once started you will have **30 minutes** to complete the quiz. These quizzes are open book but should be worked on by yourself. It is recommended that you first review and practice the material. The quizzes will be multiple choice

and will have approximately 10 questions each.
No remark requests will be accepted for Learn quizzes.

Midterm Exam:
There will be one midterm held on **Friday, June 25, 2021 (12:00am to 11:59pm)**. This will be a timed Crowdmark assessment meaning that once you access the midterm you will have **2 hours** to complete and submit it on Crowdmark. It is your responsibility to make sure that once submitted your working is clearly visible, rotated properly and questions are uploaded in the correct box. The midterm will be cumulative and consist of short-answer type questions. More details will be provided closer to the date.

If you have a question regarding the marking of the midterm after checking the posted solutions, please email the instructor with the subject "AFM 113 – Midterm Remark" and include your student number and ID in the email. From the time the midterm is returned to you, you have **one week** to appeal your grade.

Final Exam:
The final assessment will consist of two parts:

1. A cumulative timed Learn Quiz, and
2. A cumulative timed closed-book assessment through Crowdmark.

Specific dates, times and format will be posted on Learn closer to the end of the semester.

Missed Assessments:
If you miss any of the course work requirements (learn quizzes, midterm or final exam) due to illness or extenuating circumstances, you must inform your instructor within 24 hours with proper documentation. In the case of illness, you must provide an illness form. In the case of extenuating circumstances, you must provide sufficient documentation to your instructor to verify the circumstances. The percentage for the missed work will be added to your final exam. If you miss any of the eligible course work requirements without proper documentation you are automatically awarded a grade of 0.

Please note the Math Faculty Incomplete grade policy. In the case of a missed final exam with documentation, an INC grade will only be awarded if ALL the following conditions are satisfied:

- at least two of the quizzes are completed with a grade of at least 50%, and
- the midterm is completed with a grade of at least 50%

Any student who misses the final exam due to illness and whose performance during the term does not warrant an INC grade will receive a failing grade of DNW (Did Not Write). Exceptions to this policy will be made at the discretion of the instructor.

Aids and Group Work:
Group work is NOT permitted on any of the course assessments. If you are unsure of the wording in Assignment questions, please make a post on Piazza. All assessments and submissions are governed by the Academic Integrity rules as outlined in the University and Faculty Policies (Policy 71). In the past some issues below have came up:

- Using unauthorised resources to complete assessments,
- Copying from other students, or
- Sharing solutions.

A reminder that these, among other things, violate academic integrity. We will be reviewing submissions for such violations. If any violations are noted severe penalties can be applied.

Copyright:
All material covered in AFM 113 including material discussed in the lessons, videos, course notes, and others uploaded to learn are copyrighted. You do NOT have permission to post such information on any website, or to copy such information without the express permission of the instructor.

University of Waterloo and Mathematics Faculty Policies
All instructors and students must follow the following academic policies:

Academic Integrity: In order to maintain a culture of academic integrity, member of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility.
See: https://uwaterloo.ca/academic-integrity/ for more information.

Discipline: A student is expected to know what constitutes academic integrity to avoid committing an academic offence, and to take responsibility for their actions. A student who is unsure whether an action constitutes an offence, or who needshelp in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline. See: https://uwaterloo.ca/secretariat/guidelines/guidelines-assessment-penalties.htm for guidelines for the assessment of penalties.

Avoiding Academic Offenses: For more information on commonly misunderstood academic offenses and how to avoidthem, students should refer to the Faculty of Mathematics Cheating and Student Academic Discipline Policy. See: https://uwaterloo.ca/math/academic-matters/academic-integrity

Grievance: A student who believes that a decision affecting some aspect of their university life has been unfair or unreasonable may have grounds for initiating a grievance. See Policy 70, Student Petitions and Grievances, Section 4: https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-70. When in doubt, please contact the department's administrative assistant who will provide further assistance.

Appeals: A decision made, or penalty imposed under Policy 70 (Student Petitions and Grievances) (other than a petition)or Policy 71 (Student Discipline) may be appealed if there is a ground. A student who believes they have grounds for an appeal should refer to Policy 72 (Student Appeals). See: https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-72.

Mathematics Faculty INC Grade Policy: A grade of INC is awarded to a student who has completed course work during the term well enough that they could reasonably be expected to earn a passing mark in the course, but who was unable to complete end-of-term course requirements (usually the final exam) for reasons beyond his or her control. See: https://uwaterloo.ca/registrar/current-students/incomplete-inc-grade-process.

Accessibility Services: Accessibility Services, located in Needles Hall, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the Accessibility Services at the beginning of each academic term.

Writing and Communication Centre (WCC): The Writing and Communication Centre works with students in all faculties to help you consider your audience, clarify your ideas, develop your voice, and write in the style appropriate to your discipline. WCC staff offer one-on-one support for writing papers, delivering presentations, citing research, and revising for clarity and coherence. Group appointments for team-based projects, presentations, and papers are also available. You can pre-book appointments with WCC staff or drop in at the Library for quick questions and feedback from WCC peer tutors. To book an appointment and to see drop-in hours, visit www.uwaterloo.ca/wcc. Please note that communication specialists guide you to see your work as readers would. They can teach you revising skills and strategies but will not change or correct your work for you. Please bring hard copies of your assignment instructions and any notes or drafts to your appointment.