MATH-252-01: Probability and Statistics II

Syllabus and Course Information – Spring 2019

2019 January 15

Course Information

Lectures:
TR 3:30pm-4:50pm, GLE(09)-1159, beginning 2019 January 15 and ending April 25.

Holidays (no lecture):
Mar. 12 & 14 (Spring Break).

Instructor:
Dr. John T. Whelan; LAC(74)-2063, 475-5083;
`jtwsma@rit.edu` or `john.whelan@astro.rit.edu`
Office Hours: TR 10am-11:50am or by appointment.
(Please email to make an appointment.)

Course Website: `http://ccrg.rit.edu/~whelan/MATH-252/`
Please to go this page for notes, assignments, and other information relevant to the class.

Required Textbook:

- Devore, J. L., *Probability and Statistics for Engineering and the Sciences*, 9th edition (Brooks-Cole/Cengage, 2016)

Computing Environment:
The minitab software package (Minitab 17 for Windows or Minitab Express for Mac; no Linux version exists) can be downloaded from campus or over VPN from `https://www.rit.edu/its/services/software-licensing/minitab` and is licensed for use by RIT students. It is also installed in the College of Science computer labs, including GOS(08)-1345.

Prerequisites:
Probability and Statistics I (COS-MATH-251)

Course Outline:
`https://www.rit.edu/science/sites/rit.edu.science/files/COS-MATH-252-ProbabilityAndStatisticsII_0.pdf`

Scope of Course:
The course will cover most of chapters 6-9 and 12-14 of Devore including to the following topics:

1. Point and Interval Estimation
2. Hypothesis Testing
3. Two-Sample Inference
4. Regression
5. Goodness of Fit

Time permitting, we may also cover some of chapter fifteen on non-parametric methods. A tentative timetable for the pace of the course (**subject to change**) is at
http://ccrg.rit.edu/~whelan/courses/2019_1sp_MATH_252/calendar.html

Homework and Problem Sets:
Students are expected to read the relevant sections of the text *before* each class, and solve at least a list of designated sample problems, some of which we will go over in class. (Solving additional problems from the textbook is highly recommended; answers to odd-numbered exercises appear in the back of the book.)

Additionally, about once per week, there will be a short problem set due, which should be written up neatly and handed in on the due date. Most problem sets will include a numerical/data analysis exercise, which should be done using a computing environment such as minitab and handed in in hardcopy. No late homework will be accepted.

Quizzes:
There will be in-class quizzes, about once per week, each corresponding to a recent problem set. Makeup quizzes will not normally be given.

Exams:
Two preliminary exams, in class, **tentatively** planned for Tue., Feb. 19 and Tue., Apr 2. Final exam (cumulative) scheduled for Tue., May 7, 13:30pm-16:00pm, GLE(09)-1159.

Email List: discuss-statistics-whelan@lists.rit.edu
Everyone registered for the course as of January 14 should have been subscribed with their RIT address. You can edit your settings or subscribe from a different address via
https://lists.rit.edu/mailman/listinfo.mmcgi/discuss-statistics-whelan

All students are expected to be subscribed to the course email list from address which they read frequently, as organizational announcements may be sent there. Students are also encouraged to use the email list to discuss concepts and issues related to the course.

I will also use the email list to respond to student questions, so that the entire class can benefit from the exchange. If you email me a question which you don't want shared with the class, you must specify that explicitly in the email. (Similarly, if you want to ask a question anonymously, specify that you'd like your name left out of any reply posted to the email list.)

Course Policies

Attendance:
There is no attendance grade for the course, and no penalty for missing class. However, most students will find themselves at a disadvantage on the exams if they neglect to take advantage of the full range of tools (including both lectures and reading as well as homework and practice problems) to gain understanding of the material. Additionally, missed quizzes may not normally be made up.

Exam Attendance:
Makeup exams will only be granted in extreme circumstances. Unless you have a documentable emergency or an illness which requires medical attention, you should not expect to be able to make up a missed exam. If you do have a serious illness or emergency, please contact me as soon as possible.

Calculators:
Use of a scientific calculator (i.e., a calculator which includes features such as e^x and $\ln x$, but not a laptop, graphing calculator, programmable calculator, or any wireless device) is allowed and expected on the quizzes and exams. The calculator may not have anything stored in the memory, and students may not share calculators.

Class Disruptions:
Please try to avoid disrupting the class by arriving late and/or leaving early. Please switch off or silence all mobile devices if possible. In case of an urgent need to be reachable during 80 minutes of lecture (on-call EMT, critically ill loved one, etc.), please use silent/vibrate mode.

Collaboration:
There is no rule against collective brainstorming on the homework assignments, but note that their primary purpose of giving you practice with the material is best served if you actually do your own work.

Working together on exams or quizzes, or copying off of someone else's test, is of course cheating and will not be tolerated.

Grades:

Grades will be based on the following components:

  5% Problem Sets (including numerical exercises)
 10% Quizzes
 25% First Prelim Exam
 25% Second Prelim Exam
 35% Final Exam

Your score on each component of the course (each prelim, the final, all the homeworks together, and class participation) will be converted to a numerical "grade point" score, and the weighted average of those five scores will be your final grade, converted to a letter grade according to the scale below.

Grading Scale:

A	3.83–4.5	C+	2.17–2.5
A-	3.5–3.83	C	1.83–2.17
B+	3.17–3.5	C-	1.5–1.83
B	2.83–3.17	D	0.5–1.5
B-	2.5–2.83	F	(-0.5)–0.5

Graded Feedback:

Under normal circumstances, your homeworks and exams will be corrected, evaluated and returned with feedback within two weeks. You will receive updates on your grades to date (a grade for each exam and a preliminary composite grades for the homeworks and quizzes so far) three times during the semester: after each preliminary exam, and before the final exam. You are welcome to discuss with me your progress in between these milestones.

Special Arrangements for Students with Disabilities:

Students with disabilities who wish to receive accommodations in this class should contact the Academic Accommodations Office at 475-2023 or via their website
`http://www.rit.edu/studentaffairs/disabilityservices/accommodations.php`
as soon as possible so that warranted accommodations can be implemented in a timely fashion. The Academic Accommodations Office is located in SAU(04)-1150.