1016-351-01
Probability

Syllabus and Course Information – Winter 2011-2012

2011 November 29

Course Information

Lectures:
TR 10am-11:50am, GOS(08)-2300, beginning 2011 November 29 and ending 2012 February 23.

Holidays (no lecture):
Dec. 20, 22, 27, 29; Jan. 3, 5: Holiday Break.

Instructor:
Dr. John T. Whelan; LAC(74)-2063, 475-5083; `jtwsma@rit.edu` or `john.whelan@astro.rit.edu`
Office Hours: TR 2pm-3:50pm, or by appointment. (Please email to make an appointment.)

Course Website: `http://ccrg.rit.edu/~whelan/1016-351/`

Required Textbook:

- Devore, J. L., *Probability and Statistics for Engineering and the Sciences*, 8th edition (Brooks-Cole/Cengage, 2012)

Prerequisites:
Calculus C (1016-273) or Project-Based Calculus II (1016-282)

Course Outline:
`http://www.rit.edu/cos/math/Academics/Outlines/1016-351.pdf`

Scope of Course:
The course will cover the first five chapters of Devore, corresponding to the following topics.

1 Descriptive Statistics
2 Probability
3 Discrete Random Variables
4 Continuous Random Variables
5 Joint Probability Distributions

A tentative timetable for the pace of the course (**subject to change**) is at
`http://ccrg.rit.edu/~whelan/courses/2011_3fa_1016_351/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.

Quizzes:
There will be in-class quizzes, about once per week, each corresponding to a recent problem set.

Exams:
Two preliminary exams, in class, currently planned for Thursday, Jan. 19 and Thursday, Feb. 23. Final exam (cumulative) scheduled for Wednesday, Feb 29, 12:30pm-2:30pm, location TBA.

Email List: `discuss-probability-whelan@lists.rit.edu`
Everyone registered for the course as of November 28 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.cgi/discuss-probability-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:
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.

Note that it is possible to drop the lowest and highest quiz grades, and to replace the lower prelim exam grade with part of the final exam grade. These measures will be used instead of makeup exams or quizzes in all but the most exceptional circumstances.

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.

Closed-Book Quizzes and Exams
You may not use any books or notes on quizzes. For exams, you may not use any books, but may bring a hand-written formula sheet, written by you on blank $8\frac{1}{2}'' \times 11''$ paper. You are allowed one such sheet (two sides) for each prelim exam and two for the final exam.

Class Disruptions:
Please try to avoid disrupting the class by arriving late and/or leaving early. Please switch off all cell phones and beepers if possible. In case of an urgent need to be reachable during a two hour class period (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
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 all the quizzes together) 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.

The following measures are in place to reduce the effect of "bad day" outliers on a student's grade:

- A student's highest and lowest quiz grades will be dropped, if this improves that student's grade.
- The final exam will be divided into sections, one corresponding to each half of the course. The lower of a student's two in-class exam grades will be replaced with that student's grade on the corresponding half of the final, if that grade is higher.

Grading Scale:

   A 3.5–4.5
   B 2.5–3.5
   C 1.5–2.5
   D 0.5–1.5
   F (-0.5)–0.5

Grading Example: Suppose a student has grades of 3.71 (A) on the problem sets, 3.06 (B) on the quizzes, 2.02 (C) and 2.73 (B) on the in-class exams, and 3.04 (B) on the final, consisting of 2.95 on part one and 3.13 on part two. Since the lower in-class exam grade (2.02) is lower than the grade on the corresponding part of the final (2.95), it is replaced, giving an overall grade of

$$0.05 \times 3.71 + 0.10 \times 3.06 + 0.25 \times 2.95 + 0.25 \times 2.73 + 0.35 \times 3.04 = 2.98(B)$$

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/academicaccommodations.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.