Purdue University
MA416 Probability
Spring 2018
Syllabus

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1 General Information

1.1 Purdue Pledge

As a boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue.

1.2 Class time / location:

TTh 10:30-11:45, UNIV 217

Students are expected to come to lecture (and recitation, if applicable). Students bear the responsibility of informing the instructor of missed class time in a timely fashion. Aside from sudden illness, this means "ahead of time".

1.3 Office Hours:

T 2:30-3:00 and Th 1:45-2:30.

1.4 Textbook:

A first course in Probability by Sheldon Ross, edition 9, Pearson, 2014

1.5 Webpages:

The department course webpage is `http://www.math.purdue.edu/ma41600`.

Our class page can be found at `http://www.math.purdue.edu/~walther/teach`. It includes syllabus and other info concerning our class.

1.6 Statement for Students with Disabilities

Please see the webpage,

`http://www.math.purdue.edu/~walther/teach`

In this mathematics course accommodations are managed between the instructor, student and DRC Testing Center.

Students should see instructors outside class hours before or after class or during office hours to share your Accommodation Memorandum for the current semester and discuss your accommodations as soon as possible, preferably at the fist meeting between student and instructor.

2 Course Structure

2.1 Description and prerequisites

This introductory course will cover the basics of probability theory targeted for undergraduate students in statistics, mathematics, and actuarial sciences. Among the topics covered will be

- key concepts of probability, conditional probability, independence, random variable, distribution, expected value and variance, moments and moment generating functions;
- standard discrete and continuous distributions (binomial and multinomial, geometric, Poisson, uniform, normal, exponential, gamma, beta), their properties, and some of their uses;
- bivariate distributions and densities;
- Laws of Large Numbers and Central Limit Theorem.

For students interested in taking actuarial exams, the course will cover topics appearing on Exam 1/P.

Prerequisites: Multivariate calculus (MATH 261, MATH 174 or equivalent) and some mathematical maturity.

2.2 Grading

If you disagree with the grading in any category, you need to resubmit the item in question **with a written explanation** stating *why* (and not just *that*) you deserve more credit.

2.3 Homework:

Homework will be collected every Thursday in class or in my office no later than 3:00pm. **No late assignments will be accepted.** Neither will homework deposited anywhere else.

The homework due in any given week is the homework corresponding to the material of the previous lectures. Homework must be readable and **must be stapled**. Illegible scribblings will receive no credit from the grader.

You are encouraged to attempt all the questions and discuss with your classmates. However, the write-up must be of your own.

- WORK MUST BE SHOWN TO EXPLAIN YOUR ANSWERS.
  NO CREDIT WILL BE GIVEN FOR JUST THE NUMERICAL ANSWERS. THIS ALSO APPLIES TO EXAMS.

Homework material is likely to appear on tests.

2.4 Calculators

Calculators are not allowed on any test.

2.5 Quizzes

There will be quizzes.

2.6 Midterms:

There will be one midterm, in class, on **Tuesday, March 6**. Makeups may be given in extraordinary instances, but only with documented reasons.

2.7 Final Exam:

The Final Exam will be given during the Final Exam Week.

The location and date of the final will be announced in class.

2.8 Course Grade:

Your course grade will be determined using the following distributions:

12 HW	30%
3 Quizzes	15%
Midterm	20%
Final	35%

3 Being a member of the university community

3.1 Classroom Safety

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Here are ways to get information about such events.

- Course and class web pages (see item 1.5)
- In particular, review the instructions on `http://www.math.purdue.edu/~walther/teach/emergency.pdf`.

Purdue wants you to know:

Emergency preparedness is your personal responsibility. Purdue University is actively preparing for natural disasters or human-caused incidents with the ultimate goal of maintaining a safe and secure campus.

- For any emergency call 911.
- There are nearly 300 Emergency Telephone Systems throughout campus that connect directly to the Purdue Police Department (PUPD). If you feel threatened or need help, push the button and you will be connected to the PUPD.

- Fire alarm: immediately evacuate the building; do not use the elevator.
- Shelter in Place requirement for a tornado warning (siren): shelter in the lowest level of this building away from windows and doors.
- Shelter in Place requirement for a hazardous materials release: stay in our classroom shutting any open doors and windows.
- Shelter in Place requirement for an active threat such as a shooting (siren): stay in our classroom and try to lock it.

3.2 Academic Honesty:

- Incidents of academic misconduct in this course will be addressed by the course instructor and referred to the Office of Student Rights and Responsibilities (OSRR) for review at the university level. Any violation of course policies as it relates to academic integrity will result minimally in a failing or zero grade for that particular assignment, and at the instructors discretion may result in a failing grade for the course. In addition, all incidents of academic misconduct will be forwarded to OSRR, where university penalties, including removal from the university, may be considered.
- In order to prevent cheating, we ask that you keep your eyes on your sheet at all times during exams. Looking around is forbidden.
- All electronic devices are forbidden during exams. This includes calculators, cell phones, PDAs, music players, and smart phones and ANYTHING ELSE of electronic nature.
- Working on an exam either before or after the official time is considered cheating. The exam of any student who is caught writing after time is up or before the exam begins will receive a grade of zero, and this may be reported to the Assistant Dean of Students. The office of the dean of students may choose to apply further punishment.
- Reports of cheating can be done through the Office of the Dean of Students (purdue.edu/odos), call 765-494-8778.

3.3 Classroom Rules:

- Unless other arrangements have been made with the instructor, cell phones and other communication devices must be turned off and stowed away during class.
- Please respect your instructor, your TA, and your fellow classmates. Students who act in a disruptive or disrespecful manner (e.g., arriving late, texting, sending email, surfing the web, talking, etc.) may be asked to leave the classroom.

- All course material is copyrighted. Reproduction or storage in a retrieval system (e.g. the Internet) is prohibited without an explicit agreement with the author of the work. This includes course notes (including your own), homework questions, and exams.
- Taking pictures or making audio/video recording of the lectures is prohibited without the instructor's prior approval. The instructor can forbid all recording.

3.4 CAPS Information

Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at (765)494-6995 and http://www.purdue.edu/caps/ during and after hours, on weekends and holidays, or through its counselors physically located in the Purdue University Student Health Center (PUSH) during business hours.