

SYLLABUS
STAT 417 FALL 2019
STATISTICAL THEORY

Time and Location: noon-1.15pm (section 001), REC 302, and 3pm – 4.15 pm (section 002), UNIV 219

Instructor: Professor Michael Levine

Office: HAAS 154

Office Hours: TTh 10.30am-11.30am or by appointment

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Course webpage <http://www.stat.purdue.edu/~mlevins/courses/STAT417/index.html>

Purdue Honors Pledge

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

Textbook: Probability and Statistics: The Science of Uncertainty (Second Edition) by Michael J. Evans, and Jeffrey S. Rosenthal. You can find the full text of this book online at <http://www.utstat.toronto.edu/mikevans/jeffrosenthal/book.pdf>

Course Coverage: Chapters 5-7, and 8.1-8.3. If there is time remaining, we may go briefly over Chapter 9 as well.

Prerequisites

STAT 416 or an equivalent course

What we cover in this course: an introduction to the mathematical theory of statistical inference, emphasizing inference for standard parametric families of distributions; properties of estimators; Bayes and maximum likelihood estimation; sufficient statistics; properties of tests of hypotheses; most powerful and likelihood-ratio tests; distribution theory for common statistics based on normal distributions.

Homework

Weekly homework problems will be posted online and will be due one week afterwards. Collaboration on homework assignments is permitted, even encouraged, but each student should write up his/her own solution. Identical copies are not acceptable since your homework must reflect YOUR understanding of the material. If identical solutions are found, all the parties involved will receive a 0 on that assignment. Late homework will not be accepted under any circumstances (late = after class meeting on the due date). Instead, the two lowest homework scores will be dropped at the end of the fall semester.

Homework must always be stapled if it is longer than one page. The first page of each homework set handed in must contain the following information:

- i. your name
- ii. the number of the homework set (e.g. Homework #2)
- iii. the due date
- iv. Stat 417 001 or 002

This information is necessary to ensure that your grades are recorded correctly and that your homework is returned to you promptly.

Examinations

There will be one midterm examination and one final examination. The final examination will not be cumulative. Contact me as soon as possible if you are unable to take an exam at the scheduled time. Students having exam conflicts or requesting special accommodations (these should be documented) must inform me as early as possible so that alternative plans may be arranged. It is YOUR responsibility to contact me IN ADVANCE to check if a make-up is possible. You may use a calculator during all exams if you wish. The exams are closed book/open notes. You can bring two standard size cheat sheets of paper, written or typed on both sides, to both exams.

Final Grade

Your final grade will be based on the homework grades (30%), midterm grade (35%), and a final exam grade (35%). The percentage grades needed to achieve an A, B, C, or F will follow approximately the following scale: 80 – 100 = A, 70 – 79 = B, 55 – 69 = C, 40 – 54 = D, anything below 40 = F. This course has "+" and "-" scores.

Rules of Politeness:

1. No food, texting, IM'ing etc. during the class. Coffee or a soft drink are ok
2. Barging in late into the class is very disruptive and rude. Please try to be on time for class as much as possible.

Academic Dishonesty

Penalties for academic misconduct range from a 0 on the assignment to failure in the course with referral to the Dean of Students for further sanctions. Note that we punish not only the person who cheats but also the person who enables the cheater. Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the university to investigate the concern.

Grief Absence Policy for Students

Purdue University recognizes that a time of bereavement is very difficult for a student. The University therefore provides the following rights to students facing the loss of a family member through the Grief Absence Policy for Students (GAPS). GAPS Policy: Students will be excused for funeral leave and given the opportunity to earn equivalent credit and to demonstrate evidence of meeting the learning outcomes for missed assignments or assessments in the event of the death of a member of the student's family.

Students with Disabilities

Purdue University strives to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247 or at <http://www.purdue.edu/drc/faculty/syllabus.html>

How to deal with stress:

1. If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try WellTrack, <https://purdue.welltrack.com/>. Sign in and find information and tools at your fingertips, available to you at any time.
2. If you need support and information about options and resources, please see the Office of the Dean of Students, <http://www.purdue.edu/odos>, for drop-in hours (M-F, 8 am- 5 pm).
3. If you're struggling and need mental health services: 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 mental health 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 by going to the CAPS office of the second floor of the Purdue University Student Health Center (PUSH) during business hours.

Emergencies: in the event of a major campus emergency or other circumstances beyond the instructor's control, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar. Relevant changes to this course

will be posted onto the course website; you can also e-mail me at mlevins@purdue.edu with any questions you may have if/when this happens.