ENGRD 2700: Basic Engineering Probability and Statistics
Spring 2024

Course Overview

This course provides a working knowledge of basic probability and statistics and their application to engineering. Computer analysis of data and simulation are included. Topics include random variables, probability distributions, expectation, estimation, and regression.

Pre/Co-requisites

Two semesters of calculus (e.g., MATH 1910 and 1920), and linear algebra (MATH 2940); the latter may be taken concurrently.

Staff

Instructor Johannes Wissel (jw674)
286 Rhodes Hall
Office Hours: Tuesday 3:00pm - 4:00pm

TAs Qing Feng (qf48) — Head TA
Sujai Hiremath (sh2583)
Shayan Ranjbarzadeh (sr2349)
Natalie Nguyen (nhn7)
Rakshith Sreeram (rs2244)
Steven Chen (sc2342)
Thanakorn Rojanasasitornwong (tr273)
Veya Zhao (wz229)

See Canvas (`https://canvas.cornell.edu/courses/60732/`) for TA office hours.

Meetings

Lectures Tuesday & Thursday, 1:25pm–2:40pm, 155 Olin

Recitations
DIS 201 : Monday, 10:10am–11:25am, 571 Rhodes
DIS 202 : Wednesday, 8:40am–9:55am, 571 Rhodes
DIS 203 : Tuesday, 11:40am–12:55pm, 453 Rhodes
DIS 204 : Thursday, 10:10am–11:25am, 571 Rhodes
DIS 205 : Wednesday, 2:55pm–4:10pm, 453 Rhodes

Attendance

Attendance and participation at lectures and recitations are **required**, except when otherwise announced. For recitation, please attend the section in which you are enrolled. *Recitation sections do not meet during the first week of class.*

Lecture Notes and Recommended Reading

- **Required** for Lectures
  - Lecture slides for each topic (perhaps with gaps to be filled in during class) will be posted on Canvas before we start the topic. This should be brought to class, either printed for annotation or annotated electronically. We hold the copyright on the course notes and other course materials (recitation, homework etc.), and buying, selling or reposting course materials is prohibited and illegal.
- Recommended reading: Much of the material for this course is also covered in the book *Probability and Statistics for Engineering and the Sciences*, by Jay L. Devore (any edition, including an online edition is fine), which contains many examples and problems.

Software

We will use Python, with Google Colab (`https://colab.research.google.com/`). No prior experience is necessary; the fundamentals will be covered in the discussion sections.

Course Website and Communication

- *General communication guidelines*: Questions are best answered (and encouraged) during lectures, recitations, office hours, or in the Ed Discussion (see below). Due to the size of the class, email should be reserved to urgent or confidential matters.
- *Canvas*: We will use Canvas (`https://canvas.cornell.edu/courses/60732/`) for all course materials, including lecture notes, lecture recordings, recitation notes, homework assignments/solutions, announcements, exam solutions...
- *Gradescope*: We will use it as a homework submission platform. You will be able to view your homework assignments grades and comments from the grader, as well as to submit regrade requests.
- *Ed Discussion*: We will use it for announcements and online discussions. You can use it to ask and answer questions about course concepts, assignments, and logistics. Almost all posts should be public. Ed Discussion is a class discussion forum, so please take the responsibility to respond to each others' questions and comments. It's great when students can learn from each other!

Both Gradescope and Ed Discussion are accessible from our course Canvas.

Homework

There will be about 8 homework assignments. **Homework is due at 11:59pm on Friday a week after it is given out (unless specified otherwise)**. It must be submitted **electronically** through Gradescope. There will be **no late homework** accepted for grading and you should submit the homework well in advance before the deadline.

Homework assignments are equally weighted and your lowest two scores will be dropped. This accommodates sickness, family emergency, or other unforseen circumstances without a formal process. If you miss an assignment for these reasons then it must count as a dropped assignment. We will NOT accept other requests for extensions or waivers. **You may work either alone or in pairs.**

Exam Information

Prelim: Tuesday, March 12, 2023, at 7:30pm, HLSB14, KMBB11, THR203, THR205
Final: TBA

Exams are closed-book, but you may bring a single US-letter size sheet of paper with you to the prelim, and two US-letter size sheets of paper to the final. Calculators are allowed; graphical calculators are permitted provided that their memory is cleared before the exam. You may NOT use a computer, smart tablet or other device with a communication capability. No cell phones are allowed, even on your desk to check the time, nor on the floor near your feet. Make sure we don't see a cell phone anywhere near you in the exam. A live cellphone means you want to be removed from the room and accused of an honor code violation.

Grading

Your grade will be based on whichever of the following schemes gives you the higher grade:

	Scheme 1		*Scheme 2*
1%	Course evaluation	1%	Course evaluation
29%	Homework	29%	Homework
25%	Prelim	70%	Final
45%	Final		

So a strong final exam makes us forget a mediocre midterm score.

Regrade Requests

We will use fair and generous grading schemes honoring effort and partial solutions. If there is still a dispute about grading, you may submit a regrading request to the head TA accompanied by an explanation for your request within 1 week of the grades being posted. Your entire homework will be re-examined and your final grade can go up or down.

Peer Tutoring

One-on-one peer tutoring is available free of charge for students in the College of Engineering, as well as for those majoring in Biological & Environmental Engineering. More information can be found at `www.engineering.cornell.edu/tutoring`.

Academic Conduct

Each student in this course is expected to abide by the Cornell University Code of Academic Integrity (`https://theuniversityfaculty.cornell.edu/dean/academic-integrity/`). Any work submitted by a student in this course for academic credit should be the student's own work, with exceptions/particulars described below.

- All homework assignments are to be completed by students working either alone or in pairs.
- You may discuss homework problems at the level of a hallway discussion with other students.

If you have any questions about this policy, please do not hesitate to contact either one of the instructors.

Special Accommodations

It is Cornell policy to provide reasonable accommodations to students who have a documented disability (e.g., physical, learning, psychiatric, vision, hearing, or systemic) that may affect their ability to participate in course activities or to meet course requirements. Such students are encouraged to contact Student Disability Services (SDS) (`http://sds.cornell.edu`) for a confidential discussion of their individual need for academic accommodations.

Note: This class is participating in the Alternative Testing Program (ATP), learn more here: `http://sds.cornell.edu/atp`. Since this class is participating in ATP, SDS will be managing accommodated exams for students who have received accommodation from SDS.

Personal or Academic Stress

If you are experiencing undue academic stress at any time during the semester, or need to talk to someone about a personal matter, a wide range of campus resources are available:

- Your college's Academic Advising or Student Services Office
- Cornell Learning Strategies Center (`http://lsc.cornell.edu`)
- Gannett Health Services (`www.gannett.cornell.edu`)
- Empathy Assistance and Referral Service (`http://ears.dos.cornell.edu/`)