Course objectives This course is your first foray into the world of probability and statistics. At the end of this course, you will have a basic toolkit for analyzing and understanding data, and you will have learned why and how probability and statistics are interrelated.

Course topics This course serves as an introduction to both probability theory and statistics as used in engineering and applied science. In probability the course covers random variables, both continuous and discrete, independence, expected values, variance, conditional distributions, conditional expectation and variance, moment generating functions, the strong law of large numbers and the central limit theorem. In statistics it covers the basics of confidence intervals, hypothesis testing and linear regression.

Prerequisites Calculus, including multiple integration.

Course team The course is taught by Dr. Ton Dieker. I prefer to receive questions in person but you can contact me at ton.dieker@ieor.columbia.edu.

The teaching assistants are Fengpei Li (fl2412@columbia.edu) and Mohammad Shadravan (ms4961@columbia.edu). The course assistants are Weiyang Chen (wc2548@columbia.edu) and Tianxiang Wang (tw2517@columbia.edu).

Who should I go to with my question?

• Homework questions: Fengpei or Mohammad.
• Homework regrading requests: Weiyang or Tianxiang. See “grading” for more details.
• Anything else: Professor Dieker.

Classroom Math 203; meeting times: 2:40pm – 3:55pm Mon/Wed.

Recitation Details will be announced through email or Courseworks.

Class material We use the book “Probability and Statistics for Engineers and Scientists, 9th Edition” by Walpole, Myers, Myers, and Ye. If you choose to use an earlier edition, it is your responsibility to ensure you study the right materials and make the right exercises. Supplementary class material will be posted on Courseworks, https://courseworks.columbia.edu. The lecture notes are available through this link.

Homework Assignments You will receive one set of homework assignments every week.

• Any homework that is not handed in will receive a zero grade and computed in the homework grade. No homework will be accepted after the deadline. NO EXCEPTIONS. Emails requesting for extensions will be ignored, but your lowest homework score will be dropped.
• Homework needs to be submitted by turning in a hardcopy on the due date.
• A representative sample of the exercises will be graded, not necessarily all exercises.
• Start immediately on the homework so that you can take full advantage of office hours.
• You may discuss homework with classmates, in which case you have to mention on your homework with whom you have discussed it. You will get full credit for any correct answers given. Copying is not allowed.

Exams There are two in-class midterms and a final exam. The in-class midterms will be on February 24 and March 30. Tentatively the final exam is on May 11, 1:10pm-4:00pm. If the official SEAS final exam calendar on http://registrar.columbia.edu/content/exams shows a different slot, then the exam will be in the time slot from the SEAS final exam calendar.

Grading Homework 15%; Midterms 25% each; Final exam 35%.

Homework or exams are only re-graded if they are accompanied by a cover sheet with a clear reason for re-grading. No regrading requests can be submitted after the last day of class.

Office hours My office hours are Mondays 6:45pm-8pm in 419 Mudd. Call my office at (212) 853-0683 if the DSI door is locked. Course team office hours will be announced through CourseWorks. No appointments are needed during any of the office hours, please take advantage of them!

Honor Code Students are reminded to observe the IEOR Code of Academic Integrity. Any form of academic dishonesty can result in a serious deduction from your final grade or even a grade of F in the course.
Miscellaneous  A couple of miscellaneous comments:

- Attending lectures is not obligatory but it is highly recommended.
- No use of cell phones during class.
- Electronic devices in class are only allowed in the back row.
- Do not post course materials on websites such as coursehero, I do not want these websites to profit financially from my work. Since I own the copyright, this is stealing.
- If you miss an exam due to a real emergency or serious illness:
  - You must notify me immediately (as is feasible) before the exam.
  - It is your responsibility to provide appropriate convincing documentation to support a request.
  - If your documentation is fraudulent in any way, or if you misrepresent your reasons for missing an exam, you will receive an F in the course.

If you miss an exam for legitimate reasons, then it will be my prerogative to either administer a make-up exam of my choosing (i.e., oral or written) or to add the weight for the missed exam to the final exam weight. You will not be excused for any personal business, such as interviews, social gatherings, etc. All unexcused absences will result in an exam grade of zero.

- Special classroom accommodations or testing accommodations such as extended exam time are only made upon recommendation by Disability Services.