

# STAT 345 Section 004: Elements of Mathematical Statistics and Probability

## Meeting information:

Instructor/Email: Kellin Rumsey - knrumsey@unm.edu

Meeting place: DSH Hall 326

Meeting time: Tuesday and Thursday 5:30-6:45pm

Office: 348 SMLC

Course Webpage: [math.unm.edu/~knrumsey](http://math.unm.edu/~knrumsey)

Office Hours: See course web-page (Teaching Link)

**Course description:** This is an introductory course in statistics and probability for students in engineering, computer science and the physical or chemical sciences. However, it is broad enough for students from outside of these disciplines. Mathematical background, fundamental methods, as well as many applications of statistics in these disciplines will be presented.

**Prerequisite:** MATH 181 or MATH 163. It is expected that you are familiar with concepts in calculus such as real functions, limits, differentiation, integration, sequences and series, exponential and logarithmic functions, multivariate calculus, etc.

## Textbook:

*Applied Statistics and Probability for Engineers, 6th Edition* by Douglas C. Montgomery and George C. Runger. This textbook is not required. I will be following the text “somewhat” closely in terms of notation and order of the material. Disclaimer: I’m not a huge fan of this book.

*A First Course in Probability, 9th edition* by Sheldon Ross. This well known book can be purchased for 15 dollars on Amazon. I recommend it, especially for engineers and computer scientists. Although it is more challenging than our textbook, Ross uses many interesting examples.

**Course website:** All course announcements, assignments, and grades will be kept on the course webpage (see link above).

**Course contents:** We will cover most of Chapters 2 through 9 (Montgomery & Runger), including combinatorics, probability distributions, expectation, variance, correlation, descriptive statistics, point estimation, confidence intervals and hypothesis testing.

## Grading Policy:

- Homeworks (Weekly) - 40%
- Midterm (Probability: Chapters 2,3,4,5) - 30%
- Final Exam (Probability and Statistics: Chapters 2-9) - 30%

## Homework:

- Homeworks will be posted on the course web-page. Homeworks will be due weekly at the beginning of class on Tuesday (with a few possible exceptions).

- Homeworks should be turned in on the template provided on the webpage. I expect your work to be legible. For some problems, you may need to do your work on scratch paper before transcribing your final answer onto the template.
- You are encouraged to work with others on the homeworks, but homeworks must be written independently. Try to adhere to the *Netflix Rule*. After collaborating on homework, watch an episode or two of *The Office* or your current favorite show before writing the report. This ensures that your homework is indeed your own work. Students turning in identical homeworks is not acceptable.
- Solutions to each homework will be posted at the end of class on Tuesday. I typically choose 2 or so problems at random to grade from each homework. Completion points are given for the other homeworks.
- Please please please please staple your homeworks. (:
- Note that you are never *required* to do the challenge problems. With that said, you are awarded points for correct solutions to the challenge problems, which can raise your homework grade.

**Examinations:**

Midterm: Thursday March 8, 2018 (Last day before Spring Break)

Final: Thursday May 10, 5:30-7:30pm, 2018

**Attendance and in-class policy:** You are expected to be regular and on time in your class attendance. If you miss a class, you are still responsible for the material covered and for the assignments. Random in-class sign-ups will be given. Bonuses will be given to those who attend regularly. If the professor is late for class, you are authorized to leave after a fifteen-minute wait.

**Miscellaneous:** in an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered “responsible employees” by the Department of Education (see pg 15 - <http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf>). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity ([oeo.unm.edu](http://oeo.unm.edu)). For more information on the campus policy regarding sexual misconduct, see: <https://policy.unm.edu/university-policies/2000/2740.html>