MATH 450
Mathematical Statistics, Fall 2019

Instructor:
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Office: Ewing Hall 312

Class Times:

Tuesday-Thursday: 9:30am-10:45am
Recitation Hall, Room 101

Office Hours:

Ewing Hall 312
Tuesday 1:30pm-3pm Wednesday 10:30am-12pm or by appointments.

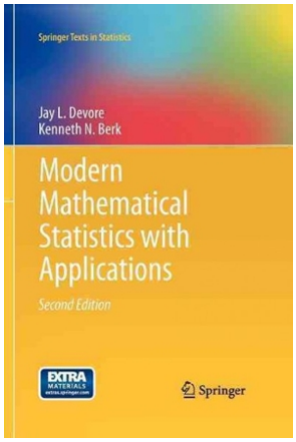
Web page:

http://vucdinh.github.io/m450f19

Visit this page regularly. It will contain homework assignments, lectures, etc.

Prerequisites: Algebra, calculus, and MATH 350 (or an equivalent course in probability).

Reference:
Modern mathematical statistics with applications (2nd edition)
Devore and Berk (Springer, 2012)



The text is available online from the UD library.

Topics:
The aim is to cover Chapter 1 and Chapters 6-12. Topics include sampling distributions, parameter estimation, maximum likelihood estimation, hypothesis testing, confidence intervals, correlation and regression. The course also includes application of *R* to perform data analysis.

Homework: Assignments will be posted on the web every other Tuesday (starting from the first week) and will be due on Thursday of *the following week*, *at the beginning of* lecture. No late homework will be accepted. Your lowest homework scores will be dropped in the calculation of your overall homework grade.

Quizzes: To encourage you to keep up with reading and understanding the concepts, at the end of some chapters, there will be a short quiz during class. The quiz dates will be announced at least *one* class in advance. Your lowest quiz score will be dropped.

Exams:

- There will be an in-class midterm exam (tentative: 10/24)
- Final exam: TBD
- The exams will be two-hour long, and are comprehensive

Evaluation:

- Overall scores will be computed as follows:

  25% homework, 10% quizzes, 25% midterm, 40% final
- No letter grades will be given for homework, midterm, or final. Your letter grade for the course will be based on your overall score.

Letter grades you can achieve according to your overall score:

- $\geq$ 90%: At least A
- $\geq$ 75%: At least B
- $\geq$ 60%: At least C
- $\geq$ 50%: At least D

Data Analysis: We will do data analysis using an open-source statistical system called R

`http://cran.r-project.org/`

To install R:

- Windows: Go to `http://cran.r-project.org/bin/windows/base/` and download using the link saying "Download R 3.x.y for Windows"
- Mac: `http://cran.r-project.org/bin/macosx/R-latest.pkg`
- Linux: Go to `http://cran.r-project.org/bin/linux/` and download as needed.
- To program in R, you have the option to work in RStudio, an open-source development environment `http://www.rstudio.com/ide/download/`.

Ethics:

- You **must** write up solutions on your own. You may **never** read or copy solutions of other students.
- You are **encouraged** to discuss with other students about the class materials and homework
- You may use books and online resources for help, but you **must** credit all such sources and **never** copy the material verbatim.

Please refer to UD's Guide to Academic Integrity `http://www.udel.edu/studentconduct/ai.html`. In particular, note that copying solutions in whole or in part from other students or **any other source** without acknowledgement constitutes cheating. Any student found cheating risks automatically failing the class and will be referred to the Office of Student Conduct.