September 2, 2025

Stat 440 Syllabus, Fall 2025

Instructor: Eric Slud, Professor, Statistics Program, Mathematics Dept., UMD

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Term, Time & Location: Fall 2025, TuTh 12:30-1:45pm, CHE2136

Texts: (1) (Required) Steven Thompson (2012), *Sampling Statistics*, 3rd ed.
(2) (Recommended) Sharon Lohr (2010), *Sampling: Design and Analysis*, 2nd or 3rd ed.

Course Coverage: Thompson Chap. 1–8, 10–13, plus Lohr Chap. 8 and part of 9, 11.

Course web-page: `http://www.math.umd.edu/~evs/s440/`

Course Requirements and Grading

There will be an in-class midterm, 6 or 7 homework sets which will either be graded directly or assessed through a quiz consisting of a problem drawn from the HW set, and either a final in-class exam or a culminating course project. Grades will be based on the midterm (30%), homework grades (25%), quizzes (10%) and the final project (35%).

Final Course Project

The final project is a paper of ∼12 pages of text (Font 11point or smaller, with at most 1.5 line spacing) plus data exhibits or pictures, on some topic related to the course material, either from a book chapter of journal article or data analysis or simulation. Topic must be approved by the instructor. Suggestions will be provided (along with resources like chapters and/or journalarticles, if requested) on the course web-page.

Course Policies

(i) As part of the applied homework assignments, students will be expected to do arithmetic calculations on the computer, which will sometimes involve a small amount of programming. Students may choose the language or platform, which may range

from Spreadsheets to `SAS` to `R` or `C++` or `Python`. *However, all computational illustrations in the course and all computer help offered in an office-hour setting will be restricted to* `R`

For the systematic **Introduction to R** and **R reference manual** distributed with the `R` software, either download from the `R` website
`https://cran.r-project.org` or simply invoke the command

```
> help.start()
```

from within `R`. Two reasonably good introductory tutorials in `R` are:
`www.math.csi.cuny.edu/~verzani/Projects/Tutorials/simpleR/stat.html`
or `https://stat212-learnr.stat.illinois.edu/L2.1_Introduction_to_R/`.

I will post Scripts for class demonstrations, simulations and examples in the Handouts section. Other introductory R scripts are given in the Thompson text.

(ii) **With every homework problem handed in, you must include a page and line reference from the textbook saying what assumptions and formulas you are using. Failure to include this will lose you points. When you solve a problem via numerical calculation, you must supply the computer code, preferably in R, that you used to solve it. This must be programming-language code, including only basic built-in functions of the programming language, not a call to a package.**

(iii) All homeworks must be handed in as pdf or doc files on ELMS on or before the due date, which is indicated both on the course web-page and the ELMS assignments pages. Late homework will be accepted late, but **without a very good excuse**, grade will always be reduced.

(iv) The policy on excused absences and missed exams and assignments will follow the University policy explained in `https://www.ugst.umd.edu/courserelatedpolicies.html`, the University's policy document. In case of a missed in-class test or exam, an alternate exam will be arranged between student and instructor as soon as possible.

(v) Course policies on academic integrity and use of technology follow the University's policy document at `https://www.ugst.umd.edu/courserelatedpolicies.html`. In addition, with respect to the homework assignments in this course, the work you hand in must be your own, written without the aid of technology. You may receive hints on how to solve problems from me, each other, or online sources, but the words and formulas you write up and submit as homework must be entirely your own.