

Statistics 3470
Introduction to Probability and Statistics for Engineers
Section 20227
Spring Semester 2019
The Ohio State University

Class Meetings: Evans Lab (EL), Room 1008, MWF 9:10 am – 10:05pm

Instructor: Nicole T. Kelbick, PhD

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Office Hours: 304-A Cockins Hall (CH), Mon. 11am - 12 pm
Tues. 2:30pm – 3:30pm
Thur. 10am - 11am
or by appointment

Begins the week of January 14th.

Grader/Tutor: The tutor room is available for all engineering stats students. (Stats 3450, 3460, 3470) in the Math Stat Learning Center (MSLC) in Cockins Hall room 122. Check out <https://mslc.osu.edu/mslc-free-tutoring> for additional information. **Tutors will be available starting Monday, January 14th.**

Prerequisites: Math 1152, 1161.xx, 1172, 1181H, or equivalent, or permission of instructor. Not open to students with credit for 3450, 3460.

Textbook:

Probability and Statistics for Engineering and the Sciences 9 edition by Jay L. Devore.

Website: The course has a web page on Carmen (<http://www.carmen.osu.edu>). Class schedule, lecture material and other relevant content and announcements will be posted on the web page. **Homework will be posted on WebAssign.** Please check it on regular basis. **Lecture material will be posted (hopefully) by 9pm the day prior to lecture.**

Course Description: Introduction to probability, Bayes theorem, discrete and continuous random variables, expected value, probability distributions, point and interval estimation, hypotheses tests, and least squares regression. This course is a GE Data Analysis Course.

Goals: Develop skills in logical reasoning, including the ability to identify valid arguments, use mathematical models and draw conclusions based on quantitative data.

Expected Learning Outcome: Students understand basic concepts of statistics and probability, comprehend methods needed to analyze and critically evaluate statistical arguments and recognize the importance of statistical ideas.

Important Dates: Note that all exams will be common exams held in the evening

| Date | Reason |
|------------------------------------|------------------------------------|
| January 21 (Monday) | MLK Day (no classes) |
| February 19 (Tuesday) | Midterm 1: 5:30pm – 6:25pm |
| March 11-15 | Spring break (no classes) |
| March 28 th (Thursday) | Midterm 2: 5:20pm – 6:15pm |
| April 22 nd (Monday) | Last day of classes |
| April 24 th (Wednesday) | Final Exam: 8:00pm – 9:45pm |

Homework / WebAssign: There will be homework assignments about every 7-10 days. The due dates will be announced IN CLASS as well as via WebAssign. The assignments will be posted on WebAssign. Electronic (emailed), printed or handwritten homework will NOT be accepted.

It is highly recommended that you use a notebook for working out solutions to problems. This will help you when reviewing material as you prepare for exams.

WebAssign rules (homework points, allowed number of attempts, etc.) will be announced along with each assignment. Login to your WebAssign account at:

<https://www.webassign.net/osu/login.html>.

See the module titled Resources for more information about and help with WebAssign.

Grading: Your grade will be based on homework assignments, two midterms, and a final exam. The final exam will not be fully comprehensive. By that, I mean there will be certain topics that you will be expected to know from prior tests because we still use them (e.g. finding probabilities using the normal distribution), but the emphasis will be on new material. The relative point-worth of these components are as follows:

| | | |
|----------|------------|--|
| Homework | 20% | Every 7-10 days, approximately |
| Exam 1 | 25% | Tuesday, Feb. 19 th , 5:30pm-6:25pm , Location TBD |
| Exam 2 | 25% | Thursday, Mar. 28 th , 5:20-pm-6:15pm , Location TBD |
| Final | <u>30%</u> | Wednesday, Apr. 24 th , 8:00pm-9:45pm , Location TBD |
| | 100% | |

Exams: All exams are common exams. That is, all sections will be taking the exams at the same time. NOTE THE DIFFERENT STARTING TIMES FOR EACH EXAM!!. All exams will be closed book and closed notes. You will be allowed a single sheet (two-sided) or prepared notes and a calculator with no wireless communication capabilities.

Make-up Exam Policy: Students who have a conflict with the primary exam time (due to a class or some other event) must **message** the instructor **at least two weeks before** the scheduled exam. Late requests for make-up exams may be denied.

| Exam | Date | Chapters Covered |
|-------|--|------------------|
| 1 | Tuesday, Feb. 19 th , 5:30pm-6:25pm , Location TBD | TBD |
| 2 | Thursday, Mar. 28 th , 5:20-pm-6:15pm , Location TBD | TBD |
| Final | Wednesday, Apr. 24 th , 8:00pm-9:45pm , Location TBD | TBD |

Office Hours: While questions are welcome and expected during class sessions, all students should feel free to visit during office hours for individual assistance with the course material. Questions regarding grades or scores will only be answered during office hours. Students unable to attend office hours may easily make an appointment to see the instructor at another time. The tutor room in Cockins Hall (CH) room 122 is available throughout the week for additional assistance.

Communication Devices: Cell phones, PDAs and other communication devices must be either turned off or put on vibrate during class. Please refrain from texting during class as a courtesy to your instructor as well as those sitting around you. You will be asked to leave the room to finish texting. Tablets and computers are allowed for note-taking. All electronic devices other than a calculator must be shut off and put away during examinations.

Academic Misconduct: Although you are encouraged to work together, you are expected to produce independent work for homework and exams. Academic misconduct for any sort will not be tolerated. If students are caught indulging in dishonest activities during exams, they will be reported immediately, without any exception. Please review OSU's policies at <http://studentaffairs.osu.edu/csc/>.

Special Accommodation: Students with ADA-documented physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations. Veterans may also be eligible for services. All accommodations are coordinated through the Office of Disability Services (ODS) in Room 150 of Pomerene Hall, (614) 292-3307. Please contact the ODS as early in the semester as possible. You can also contact the instructor privately to discuss your specific needs.

Disclaimer: The schedule and procedures contained in this syllabus should be taken as a fairly reliable guide for the course content and policies. They are, however, subject to change at the instructor's discretion. Any changes will be announced in class as well as posted on Carmen.

Tentative Course Schedule

| Week | Week of | Sections to be covered |
|-------------|---------------------------|--|
| 1 | January 7 th | 1.1 – 1.4, 2.1, 2.2 |
| 2 | January 14 th | 2.3 – 2.5, 3.1, 3.2 |
| 3 | January 21 st | 3.3 – 3.6 (No class on Monday, Jan. 21 st) |
| 4 | January 28 th | 4.1, 4.2 |
| 5 | February 4 th | 4.3, 4.4, 5.1 |
| 6 | February 11 th | 5.2, 5.3, |
| 7 | February 18 th | 5.4, 5.5 6.1, Exam 1 (19 th) |
| 8 | February 25 th | 6.2, 7.1, 7.2 |
| 9 | March 4 th | 7.3, 8.1 |
| 10 | March 11 th | Spring Break |
| 11 | March 18 th | 8.2, 8.3 |
| 12 | March 25 th | 8.4, 8.5* (pp. 352-354), Exam 2 (28 th) |
| 13 | April 1 st | 12.1 – 12.2 |
| 14 | April 8 th | 12.3, 12.4*, 12.5 (pp. 527 – 530), |
| 15 | April 15 th | 13.1, 13.2, 13.4, 14.1* |
| 16 | April 22 nd | Last day of classes (22 nd) and Final Exam (24 th) |

*If by some miracle we get through the material with time to spare, it is possible one or more of sections 8.5, 12.4 and 14.1 will be covered.