

STAT 3470: Introduction to Probability and Statistics for Engineers

McPherson Lab 1015

MWF 8:00 – 8:55

The Ohio State University, Spring 2018

Instructor: Kevin Donges
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Office Hours: MTWR 5:15 – 6:15 or by appointment

Course Description: Introduction to probability, Bayes' theorem; discrete and continuous random variables, expected value, probability distributions; point and interval estimation; hypothesis tests for means and proportions; least squares regression

General Education (GE) Requirement: This course satisfies the GE requirement in Data Analysis.

- Goals: Students develop skills in drawing conclusions and critically evaluating results based on data.
- Expected Learning Outcomes: 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.

Prerequisite: MATH 1152, 1161.xx, 1172, 1181H, 153, or 254, or equivalent, or permission of the instructor. Not open to students with credit for 3450, 3460, 427, or 428.

Textbook: *Probability and Statistics for Engineering and the Sciences*, 9th Edition, by Jay L. Devore

Topics: We will be covering all or parts of chapters 1 – 8, 12, 13, time permitting.

Website: The course website is carmen.osu.edu; please check it regularly. On the site you will find announcements, the syllabus, solutions to the exams, and exam grades (NOTE: The gradebook on Carmen is just that – a gradebook. It is used solely as a place to record your grade and the default Carmen overall grade is not necessarily correct; as such, it should be ignored.)

Important Dates: The last day to drop a course is Friday, February 2nd. The last day to withdraw from a course without petitioning is Friday, March 23rd. There will be no class Monday, January 15th (MLK Day) and Monday, March 12th through Friday March 16th (Spring Break).

Attendance: While I will not be taking attendance, you are expected to attend every class session. If you miss class then it is your responsibility to get any and all material covered from a classmate. Arriving late or leaving early is distracting to your classmates and me and will not be tolerated.

Email Correspondence: In order to protect your privacy all email correspondence must be done through a valid OSU name.# account; any email from a non-osu.edu account will be ignored. Please make sure to include "STAT 3470 – 8:00" in the subject line. Note that the faculty and student (buckeyemail) email systems are completely separate. As an alum, I am in both and the latter will autocomplete my buckeyemail address; if you send an email to this address I will not receive it. Your best bet is to contact me through Carmen.

Extra Help: The Mathematics and Statistics Learning Center provides group tutoring in Cockins Hall 134 beginning January 16th. More information can be found at <https://mslc.osu.edu/mslc-free-tutoring>.

Evaluation:

Homework	25%
Exam 1 (Wednesday, February 21 st)	25%
Exam 2 (Wednesday, April 4 th)	25%
Final Exam (Thursday, April 26 th 8:00 – 9:45)	25%

Homework will be administered via WebAssign. Given the nature of WebAssign, your homework grade will be determined as follows: If you earn a grade in the interval $(x - 10, x]$ then your grade will be x where $x = 100, 90, 80, \dots, 10$; if you earn a 0 then you'll receive a 0.

The dates for the exams are tentative and I reserve the right to change the dates of any and all assessments; at least one week of notice will be provided in case of a change. All in-class assessments must be completed in pencil and you must take the exam with the section for which you are registered. Late homework will not be accepted and no makeup exams will be given. Please note that solutions, not answers, will be graded; a correct answer alone will not get full credit if the steps leading to it are not clear and/or correct. If you find a discrepancy in the grading of your exam (e.g., incorrect addition/subtraction, correct answer marked incorrect, etc.) then you must bring it to my attention no later than two weeks from the day the exams are returned. After that no grade will be changed for any reason whatsoever.

The grading scale will be no harsher than the following scale:

A	A-	B+	B	B-	C+
[93,100]	[90,93)	[87,90)	[83,87)	[80,83)	[77,80)
C	C-	D+	D	E	
[73,77)	[70,73)	[67,70)	[60,67)	[0,60)	

Calculators: Please note that at no time will you be permitted to share a calculator with another student or use any internet enabled device (e.g., a cell phone) as a calculator.

Electronic devices: Use of communication devices and technology for activities other than class work disrupt the learning process for you and others in the class and will not be tolerated. Cell phones and other electronic devices should be turned off or silenced during class.

Recording of Class: Audio, video, and photographic recording of class content (e.g., lectures) is strictly prohibited without written authorization from the instructor. The transmission or sharing of all course content onto public, commercial, or social media sites is strictly prohibited.

Accommodation: The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. You are also welcome to register with Student Life Disability Services to establish reasonable accommodations. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. (**SLDS contact information:** slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.)

Academic Misconduct: Please help us to maintain an academic environment of mutual respect, fair treatment, and personal growth. You are expected to produce original and independent work for exams and homework. Although students are often encouraged to work together on homework assignments, all students must submit their own written work in their own words. It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct at <http://studentlife.osu.edu/csc/>.

Final Comment: It is crucial that we have a mutual respect for one another as members of the OSU community and that we conduct ourselves accordingly. My responsibilities include coming to class prepared to teach you statistics, giving clear lectures, assigning carefully chosen homework problems that are relevant to our course, and carefully preparing exam questions that accurately measure your progress in the course. Additionally, I am responsible to be available to you outside of class for consultation in office hours and by appointment. Likewise, I expect you to come to class motivated to learn the material. This involves reading the material ahead of time, promptly starting the homework assignments, and seeking additional help before it is too late. Ultimately, you are responsible for your university education and what you take from it.

Tentative Schedule:

Week	Sections
1 (1/8, 1/10, 1/12)	Introduction, 1.1 – 1.4
2 (1/17, 1/19)	1.3 – 1.4, 2.1 – 2.3
3 (1/22, 1/24, 1/26)	2.4 – 2.5, 3.1 – 3.2
4 (1/29, 1/31, 2/2)	3.3 – 3.5
5 (2/5, 2/7, 2/9)	3.6, 4.1 – 4.2
6 (2/12, 2/14, 2/16)	4.3 – 4.4
7 (2/19, 2/21, 2/22)	Review*, Exam 1, 5.1 (Emphasis on Discrete Joint Dist.)
8 (2/26, 2/28, 3/2)	5.2 – 5.4
9 (3/5, 3/7, 3/9)	6.1, 6.2*
10 (3/19, 3/21, 3/23)	7.1 – 7.3
11 (3/26, 3/27, 3/29)	8.1 – 8.3
12 (4/2, 4/4, 4/6)	8.4, 8.5 (omit likelihood ratio), Review*, Exam 2
13 (4/9, 4/11, 4/13)	12.1, 12.2, 12.5 (pgs 527 – 530)
14 (4/16, 4/18, 4/20)	12.3, 12.4, 13.1 – 13.4
15 (4/23)	Review*
4/26 Comprehensive Final Exam 8:00 – 9:45	

Items marked with “*” may be omitted.