

# STA3032 Applied Statistics for Engineers and Scientists

Fall 2017

## Lecture Information:

Instructor: Minjing Tao

Office: OSB 209A

Email: tao@stat.fsu.edu

Lectures: TuTh 11:00AM – 12:15PM OSB 108

Office Hours: TuTh 12:20PM – 1:20PM or by appointment

Course website: <https://fsu.instructure.com> (Canvas); <https://campus.fsu.edu> (Blackboard)

## Teaching Assistant:

TA: Hwiyoung Lee ([hwiyoung.lee@stat.fsu.edu](mailto:hwiyoung.lee@stat.fsu.edu))

Office: Biology Unit I 308

Office Hour: Monday 2:00 – 3:00PM

## Textbooks (Required):

- *Statistics for Engineers and Scientists* (Fourth Edition), by William Navidi. (ISBN: 9780073401331, Publisher: McGraw-Hill Education)

**Course Description:** This course will cover calculus-based probability, discrete and continuous random variables, sampling distributions, the central limit theorem, and the basic statistical inference. Topics include descriptive statistics, interval estimates, hypothesis tests, ANOVA, correlation, simple and multiple regression, and analysis of categorical data. In addition, if time allows, the course will introduce how to use software such as R to solve statistical problems.

**Prerequisites:** MAC 2312 (Calculus II)

**Grades:**

Your final grade will be calculated from a total of 500 possible points as follows:

Two midterm exams	200 points (100 points for each midterm)
Final exam	140 points
Homework Assignments	160 points (20 points each, approximately 9 assignments in total)

**Notes:**

1. The first midterm is tentatively scheduled in week 6, and the second midterm in week 11 (see page 3 for details). Both of the midterms are taken in class (75 min). Midterms are closed book, but you are allowed to bring a piece of paper (8 by 11.5 inches, 2-sided).
2. Final exam is scheduled on December 13 (Wednesday), from 12:30PM to 2:30PM. Final exam is cumulative, but will put more weights on the last part (materials after Midterm 2). You are allowed to bring either your textbook, **OR** three pieces of paper.
3. Homework should be handed in by the due date at the BEGINNING of the class. Late homework may be accepted with good excuse and some penalty. Group discussions are encouraged, but you have to write up your own solutions. You are allowed to drop the lowest score of the assignments.

Letter grades will be assigned according to the following scale:

Grade	Point Percentage	Total Points
A	93% - 100%	465 – 500
A-	90% - 93%	450 – 464
B+	87% - 90%	435 – 449
B	83% - 87%	415 – 434
B-	80% - 83%	400 – 414
C+	77% - 80%	385 – 399
C	73% - 77%	365 – 384
C-	70% - 73%	350 – 364
D+	67% - 70%	335 – 349
D	63% - 67%	315 – 334
D-	60% - 63%	300 – 314
F	< 60%	< 300

**Tentative Schedule (see Canvas for the updates):**

Week	Day	Date	Topic	HW Due
1	Tuesday	8/29	Introduction	
	Thursday	8/31	Data Summaries (Chapter 1)	
2	Tuesday	9/5	Probability (Chapter 2: 2.1 – 2.3)	
	Thursday	9/7		HW1
3	Tuesday	9/12	Random Variables and Distributions (Chapter 2: 2.4 – 2.6, part of Chapters 3 and 4)	
	Thursday	9/14		
4	Tuesday	9/19		HW2
	Thursday	9/21	Inference for Population Mean (Central Limit Theorem, Confidence Intervals; 4.11 and Chapter 5: 5.1, 5.3)	
5	Tuesday	9/26		
	Thursday	9/28	HW3	
6	Tuesday	10/3	Midterm 1 Review	
	Thursday	10/5	<b>Midterm 1</b>	
7	Tuesday	10/10	Inference for Population Mean (Hypothesis Test; Chapter 6: 6.1, 6.2, 6.4)	
	Thursday	10/12		HW4
8	Tuesday	10/17	Hypothesis Test (Chapter 6: 6.12 – 6.14)	
	Thursday	10/19	Inference for Mean Difference (Chapter 5: 5.4, 5.6, 5.7, Chapter 6: 6.5, 6.7, 6.8)	
9	Tuesday	10/24	Inference for Population Proportion (Chapter 5: 5.2; Chapter 6: 6.3)	HW5
	Thursday	10/26	Inference for Categorical Counts (Chap. 6: 6.10)	
10	Tuesday	10/31	Use R to do statistical analysis I	
	Thursday	11/2	Midterm 2 Review	HW6
11	Tuesday	11/7	<b>Midterm 2</b>	
	Thursday	11/9		
12	Tuesday	11/14	Regression (Chapters 7 and 8)	
	Thursday	11/16		HW7
13	Tuesday	11/21	Design of experiments (Chapter 9)	
	Thursday	11/23	<b>Thanksgiving, no class</b>	
14	Tuesday	11/28	Design of experiments (Chapter 9 Cont'd)	HW8
	Thursday	11/30		
15	Tuesday	12/5	Use R to do statistical analysis II	
	Thursday	12/7	Final Review	HW9
16	Wednesday	12/13	<b>Final Exam (12:30PM – 2:30PM; OSB 108)</b>	

**University Attendance Policy:**

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

**Academic Honor Policy:**

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to ". . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at <http://fda.fsu.edu/Academics/Academic-Honor-Policy>.)

**Americans With Disabilities Act:**

Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class. This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center  
874 Traditions Way  
108 Student Services Building  
Florida State University  
Tallahassee, FL 32306-4167  
(850) 644-9566 (voice)  
(850) 644-8504 (TDD)  
[sdrc@admin.fsu.edu](mailto:sdrc@admin.fsu.edu)  
<http://www.disabilitycenter.fsu.edu/>