STA-3032 Applied Statistics for Engineers and Scientists
Syllabus
Fall 2020 - 9045-0001

Meetings: Remote (synchronous) T/R 9:30 AM - 10:45 AM
Instructor: Dr. Jonathan Stewart
Office hours: Remote via Zoom/Canvas, TBA
Course website: Canvas
Email: jrstewart@fsu.edu
Use subject line '[STA-3032]' in all email correspondence.

Grader: Pengfei Lyu
Email: plyu@fsu.edu

Course description: STA-3032 aims to provide a calculus based introduction to statistics students in engineering and science programs. At the end of the course, students should be able to

- Describe basic statistical analysis methods, the assumptions of the methods, and diagnostics for validating assumptions.
- Conduct basic descriptive and inferential statistics procedures.
- Translate scientific and research questions into statistical questions.
- Interpret the results of statistical analyses within the appropriate subject context.
- Outline the capabilities and limitations of using statistics as a means of reasoning about uncertainty and answering scientific questions.

Prerequisites: The course prerequisite is MAC 2312, titled Calculus II.

Students are required to be familiar with derivatives, integrals, infinite series, and other topics in single variable calculus (i.e., Calculus I and Calculus II).

Textbook: The textbook required for this course is *Statistics for Engineers and Scientists*, by William Navidi, 4th Edition. For your convenience, you can find the textbook at Amazon; please obtain the textbook from your preferred source.

Assignment submission policy: Every assignment will be issued with a deadline date and time clearly listed on the assignment.

All assignments are to be submitted electronically through the course canvas site assignment page. It is the responsibility of each student to ensure they correctly submit their work on-time.

No late submissions will be accepted for any assignment, quiz, or examination.

Attendance policy: Attendance to lecture is formally required, however I will not be taking attendance past the first lecture (as required by university policy). That being said, I *strongly* encourage students to complete the required readings prior to each lecture and to attend lecture.

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.

Grade policy: The course is worth 100 total points which are divided into four categories that determine the final letter grade:

- Assignments - 30% of total points
- Examinations - 50% of total points (10% for quizzes, 10% for both midterms, 20% for the final)
- Critical news analysis project - 10% of total points
- Challenge problems - 10% of total points

Category descriptions:

- Assignments will primarily consist of problem sets, but will also include course discussion sections on canvas, as well as other course exercises. Assignments must be submitted individually.
- Examinations include quizzes, two midterms, and a final.
- Critical news analysis project. Near the end of the semester, students will select a suitable news article to critique from a statistical perspective. Students will use the statistical knowledge they have obtained throughout the semester to perform a critical analysis of their selected article and the author's usage of statistics to support their arguments.
- Challenge problems will be issued periodically. The goal of challenge problems is to provide an opportunity for students to collaborate on harder problems and learn from each other. Distinct from assignments, students are allowed (and encouraged!) to submit solutions to challenge problems in groups of no more than four. *For the Fall 2020 semester, study groups of four have been preassigned.*

  Each challenge problem will be graded on a 10 point scale:

  - 10 pts for a perfect solution.
  - 8 pts for imperfect solutions with significant merit.
  - 6 pts for wrong solutions that have redeeming qualities.
  - 4 pts for submission of a valid attempt.
  - 0 pts for no submission or submission of an invalid attempt.

Final letter grades for the course will be assigned at the end of the semester. The assignment of letter grades will not be stricter than the following rubric for end of semester point totals:

A+	$[99, 100]$	C	$[73, 76)$
A	$[94, 99)$	C-	$[70, 73)$
A-	$[90, 94)$	D+	$[66, 70)$
B+	$[86, 90)$	D	$[63, 66)$
B	$[83, 86)$	D-	$[60, 63)$
B-	$[80, 83)$	F	$[0, 60)$
C+	$[76, 80)$		

Final point totals will be rounded to the nearest integer.

No grade adjustments will be considered on an individual basis and no extra credit will be provided.

Policy for collaborative work: Any submitted work for a grade which permits collaboration is expected to be individually written-up by the student submitting the assignment. While collaboration is encouraged—where allowed—students must write their own solutions and responses. This includes discussion boards, for which copying words or analysis from other students or sources will be considered a violation of the honor code.

The challenge problems are not subjected to this rule, because they allow for group submission. It is expected that students do *not* collaborate outside of their group, however.

Academic integrity and 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 living up to their pledge to "... be honest and truthful and ... [to] strive for personal and institutional integrity at Florida State University." The policy in full can be found at Academic Honor Policy PDF (click me).

Americans with Disabilities Act: Students with disabilities needing academic accommodation should:

1. Register with and provide documentation to the Office of Accessibility Services; and
2. Bring a letter to the instructor indicating the need for accommodation and what type.

Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from the Office of Accessibility Services has been provided.

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:

Office of Accessibility Services
874 Traditions Way
108 Student Services Building
Florida State University
Tallahassee, FL 32306-4167
(850) 644-9566 (voice)
(850) 644-8504 (TDD)
oas@fsu.edu
https://dsst.fsu.edu/oas/