

STAT 305: Engineering Statistics

Instructor: Yifan Zhu
Office & Email: Snedecor 2215, yifanzhu@iastate.edu
Course Website: This course uses Canvas.
Lectures: Atanasoff Hall B0029, TR 12:40 - 2 pm
Teaching Assistant: Yusi Li, yusil1409@iastate.edu
Instructor Office Hours: Snedecor 2215, TR 2 - 3 pm
TA Office Hours: Snedecor 2404, MW 9:55 - 10:55 am
Textbook: *Basic Engineering Data Collection and Analysis* (ISBN 0-534-36957-X) by Stephen B. Vardeman and J. Marcus Jobe. See [Immediate Access Program](#) below for Immediate Access Ebook option.

Course Requirements

Learning Outcomes

By the end of this course, students should learn basic concepts of statistics and probability to solve problems arising in engineering applications.

Class Attendance

You are responsible for all material presented in lecture and assigned as required reading. *No Class during March 16 - 20 (Spring Break)*

Homework

Weekly assignments will be due on **Thursdays, 11:59 pm**. You need to submit a **pdf file** on Canvas (If you have hand-written homework, scan it using your smart phone and export it as a single pdf file). Other formats will not be accepted. Write down the question number in the beginning of your answers to each question. No late homework will be accepted without an official excuse.

Four Quizzes

There will be 4 in-class quizzes on the following dates (all **Thursdays**):

Quiz 1	Quiz 2	Quiz 3	Quiz 4
Feb 6	Feb 27	Apr 2	Apr 23

You are allowed to bring a 2-page cheat sheet for each quiz.

Final Exam

There will be a 2-hour comprehensive final exam during the finals week. You can bring a 4-page cheat sheet.

FINAL EXAM: May 7 Thursday, 12 - 2 pm in class

Grading System

Letter grades including plus/minus will be based upon the following breakdown:

Quizzes	48% ($= 4 \times 12\%$)
Homework	12%
Final	40%

Guarantees of minimum grades in the course are: 95 or above = A, 90 or above = A- or better, 80 or above = B- or better, 70 or above = C- or better, 60 or above = D- or better

Course Outline

Week	Topics (Book Chapters)	Comments
1	Introduction (Ch 1-2)	Read syllabus carefully.
2	Design of Statistical Studies (Ch 1-2), Descriptive Statistics (Ch 3)	HW1 due.
3	Descriptive Statistics (Ch 3), Relationship between Variables (Ch 4)	HW2 due.
4	Relationship among Variables (Ch 4)	HW3 due, Quiz 1 (Ch 1-3)
5	Random Variables (Ch 5.1)	HW4 due.
6	Random Variables (Ch 5.2)	HW5 due.
7	Random Variables (Ch 5.2)	HW6 due, Quiz 2 (Ch 4 - 5.1)
8	Random Variables (Ch 5.4 - 5.5)	HW7 due.
9	Simple Inference (Ch 6.1 - 6.2)	HW8 due.
10	Spring Break	
11	Simple Inference (Ch 6.2 - 6.3)	HW9 due.
12	Simple Inference (Ch 6.3)	HW10 due, Quiz 3 (Ch 5.2 - 6.2)
13	Inference for SLR (Ch 9.1)	
14	Inference for MLR, ANOVA (Ch 9.2)	HW11 due.
15	One Way Model (Ch 9.2)	HW12 due, Quiz 4 (Ch 6.3, 6.6, 9.1)
16	Review	HW13 due.
17	Finals Week	Final Exam (comprehensive with more emphasis on Ch 9.2, 7.1, 7.4)

Immediate Access Program

This course is enrolled in the Iowa State University Immediate Access Program. Immediate Access is a collaborative program where the University Book Store, faculty, and publisher have worked together to ensure access to the **BASIC ENGR DATA COLL & ANALYSIS EBOOK** the first day of class at a reduced price compared to the national average. You can view the ebook after the instructor has published the course in Canvas. To view the ebook:

1. Click on the RedShelf Course Materials link on the navigation menu on the Canvas course homepage.
2. Click on View Course Materials and follow the instructions to receive access to the ebook. (The ebook may not be available to view until the first day of class).

You will be automatically charged on your u-bill for this digital content. You will see the charge listed as **STAT 305 IMMED ACCESS 0009** for **\$66.20**. Students who drop the course within the first 10 days of class will receive a refund on their u-bill (5 days for courses 8 weeks or shorter). **YOU DO NOT HAVE TO NOTIFY THE BOOKSTORE IF YOU DROP THE COURSE.**

Students may also choose to opt out of the program. Opting out does not mean you are dropping the course. It simply means you are choosing not to receive the digital content from the bookstore and you must find another way to acquire it in order to complete required homework assignments. Students have within the first 10 days of class to opt out and receive a refund to their u-bill (5 days for courses 8 weeks or shorter). To opt out, click on the RedShelf Course Materials link on the Canvas course homepage, then click on "View Your Course Materials", go to the bottom of the next page and click on the opt out link. Should you change your mind after opting out there will be an option to opt back in within the first 10 days of class (5 days for courses 8 weeks or shorter). You may not be able to use the opt out feature until your instructor has published this course in Canvas. The last day to opt out is 1/24/2020.

For further questions about Immediate Access please email immediateaccess@iastate.edu.

Academic Dishonesty

The class will follow Iowa State University's policy on academic dishonesty. Anyone suspected of academic dishonesty will be reported to the Dean of Students Office.

<http://www.dso.iastate.edu/ja/academic/misconduct.html>

Accessibility

Iowa State University is committed to assuring that all educational activities are free from discrimination and harassment based on disability status. Students requesting accommodations for a documented disability are required to work directly with staff in Student Accessibility Services (SAS) to establish eligibility and learn about related processes before accommodations will be identified. After eligibility is established, SAS staff will create and issue a Notification Letter for each course listing approved reasonable accommodations. This document will be made available to the student and instructor either electronically or in hard-copy every semester. Students and instructors are encouraged to review contents of the Notification Letters as early in the semester as possible to identify a specific, timely plan to deliver/receive the indicated accommodations. Reasonable accommodations are not retroactive in nature and are not intended to be an unfair advantage. Additional information or assistance is available online at www.sas.dso.iastate.edu, by contacting SAS staff by email at accessibility@iastate.edu, or by calling 515-294-7220. Student Accessibility Services is a unit in the Dean of Students Office located at 1076 Student Services Building.

Dead Week

This class follows the Iowa State University Dead Week policy as noted in section 10.6.4 of the [Faculty Handbook](#).

Harassment and Discrimination

Iowa State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon race, ethnicity, sex (including sexual assault), pregnancy, color, religion, national origin, physical or mental disability, age, marital status, sexual orientation, gender identity, genetic information, or status as a U.S. veteran. Any student who has concerns about such behavior should contact his/her instructor, [Student Assistance](#) at 515-294-1020 or email dso-sas@iastate.edu, or the [Office of Equal Opportunity and Compliance](#) at 515-294-7612.

Religious Accommodation

If an academic or work requirement conflicts with your religious practices and/or observances, you may request reasonable accommodations. Your request must be in writing, and your instructor or supervisor will review the request. You or your instructor may also seek assistance from the [Dean of Students Office](#) or the [Office of Equal Opportunity and Compliance](#).

Contact Information

If you are experiencing, or have experienced, a problem with any of the above issues, email academicissues@iastate.edu.

Promoting Student Health and Wellness

Iowa State University is committed to proactively facilitating the well-being of all students. We welcome and encourage students to contact the following on-campus services for assistance regarding their physical, intellectual, occupational, spiritual, environmental, financial, social, and/or emotional needs:

- Student Wellness call 515-294-1099 or via website (<http://studentwellness.iastate.edu>);

- Thielen Student Health Center call 515-294-5801 (24/7 Medical Advice) or via website (<http://www.cyclonehealth.org>);
- Student Counseling Services call 515-294-5056 or via website (<https://counseling.iastate.edu>);
- Recreation Services call 515-294-4980 or via website (<http://recservices.iastate.edu>).
- Students dealing with heightened feelings of sadness or hopelessness, thoughts of harm or suicide, or increased anxiety may contact the ISU Crisis Text Line (Text ISU to 741-741) or contact the ISU Police Department 515-294-4428.