

# Stat 305 C Engineering Statistics

## Spring 2017

## Learning Objectives

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

## Prerequisites

MATH 165 (or MATH 165H)

## Instructor

Andee Kaplan (<http://andeekaplan.com>)

Email: [ajkaplan at iastate](mailto:ajkaplan@iastate.edu) (Put “[STAT 305 C]” in the subject.)

Office hours: T 11:00-11:50am, W 9:00-9:50am or by appointment in Snedecor Hall 2404

## Teaching Assistant

Yifan Zhu (<http://stat.iastate.edu/people/yifan-zhu>)

Email: [yifanzhu at iastate](mailto:yifanzhu@iastate.edu) (Put “[STAT 305 C]” in the subject.)

Office hours: M 2:10-3:00pm, Th 3:10-4:00pm or by appointment in Snedecor Hall 2404.

## Course Coordinator

Arka Ghosh (<http://www.public.iastate.edu/~apghosh/index.html>)

Email: [apghosh at iastate](mailto:apghosh@iastate.edu) (Put “[STAT 305 C]” in the subject.)

## Lectures

Carver Hall 0018 ([http://www.fpm.iastate.edu/roomscheduling/room.asp?room\\_id=29](http://www.fpm.iastate.edu/roomscheduling/room.asp?room_id=29))

Tue/Thu 9:30-10:50 AM

No class on Tue, March 14 or Thu, March 16 (Spring break).

## Required Text

Basic Engineering Data Collection and Analysis (<http://www.amazon.com/Basic-Engineering-Data-Collection-Analysis/dp/053436957X>)

Stephen B. Vardeman (<http://www.public.iastate.edu/~vardeman/>) and J. Marcus Jobe

(<http://www.fsb.muohio.edu/directory/jobejm>)

ISBN-10: 0-534-36957-X

ISBN-13: 978-0-534-36957-6

## Software

JMP 12, freely available for download (<http://stat.iastate.edu/statistical-software-jmp>).

You can find on-campus computers equipped with JMP (<https://www.it.iastate.edu/labsdb/?q=JMP>).

You can also use R, freely available for download (<https://cloud.r-project.org/>).

## Grading

You can check your grades on Blackboard (<https://bb.its.iastate.edu/webapps/portal/frameset.jsp>).

Your final grade is a weighted average of

- homework (25%),
- exam 1 (25%),
- exam 2 (25%), and
- final exam (25%).

Your lowest homework grade will be dropped before making the calculation.

I will assign letter grades as follows:

Letter grade	Percentage grade X
A	$X \geq 93\%$
A-	$89\% \leq X < 93\%$
B+	$86\% \leq X < 89\%$
B	$83\% \leq X < 86\%$
B-	$79\% \leq X < 83\%$
C+	$76\% \leq X < 79\%$
C	$73\% \leq X < 76\%$
C-	$69\% \leq X < 73\%$
D+	$66\% \leq X < 69\%$
D	$63\% \leq X < 66\%$
D-	$59\% \leq X < 63\%$
F	$X < 59\%$

## Homework

Rules for completing homework assignments:

- Show your work. Without work, no partial credit is possible.
- You are encouraged to work on homework with your peers. However, your problem sets must be written by you and only you, in your own words, and only with the calculations that you yourself did.

Weekly homework assignments, along with their respective due dates, are be posted at <http://andeekaplan.com/stat305/materials.html> (<http://andeekaplan.com/stat305/materials.html>). Homeworks will be due on **Thursdays at 5pm in Snedecor 2404** (give to the TA, Yifan Zhu), unless otherwise notified in class and/or on the website. Submission must be in hard copy form (printed + stapled) except under extenuating circumstances. Please note, there will be a homework assignment due during *dead week*.

No late homework will be accepted. At the end of the semester, your lowest assignment grade will be dropped. If you are unable to attend class or go to office hours on the day the homework is due it is your responsibility to turn it in *before* the due date.

## Exams

Rules for exams:

- All the usual exam ethics apply. Please ask the instructor if you have questions.
- You may bring *only* the following materials to the exams:
  - A writing utensil.
  - An approved hand-held calculator. You will not need anything more powerful than a 4-function calculator, but you may bring anything as powerful as a graphing calculator such as a TI-83 or TI-89. You may not use a device with networking capabilities (cell phone, tablet, computer). Please contact me if you are not sure if your calculator qualifies.
  - An 8.5" × 11" sheet of paper of your own notes to help you during the exam. You may use both sides of the page, and you may write anything you want except for solutions to example problems and exam notes copied from another student.
- During an exam, you will be provided with:
  - Enough scratch paper.
  - Enough computer output to complete the exam.
  - All necessary probability tables, which may include standard normal tables, Student t tables, chisquare tables, or F tables.

Exam information:

Exam	Date	Location	Topics
Exam 1	Feb. 16	Carver Hall 0018	Ch. 1-4
Exam 2	Mar. 30	Carver Hall 0018	Ch. 5-6
Final Exam**	May 4	Carver Hall 0018	Ch. 1-7, 9

\*\*The Final Exam is comprehensive. Our Final Exam is scheduled from 9:45 – 11:45 am on Thursday, May 4th, 2017. Final Exams cannot be taken early!

## Conduct and Attendance

Please bring your calculators to class because I will often have you do in-class exercises. Also, please bring any probability tables (standard normal table, Student t table, etc.) to class after I have taught you how to use them.

All the usual rules of classroom etiquette apply. Please be respectful to your peers and your instructor. We need a quiet, distraction-free environment.

I will not take formal attendance in the class, but attendance in class strongly recommended. You are responsible for all material presented in lecture and/or assigned as required reading. If an unexpected illness or incident occurs due to which you are unable to complete the necessary tasks, it is your responsibility to review the notes from class with a friend before contacting the instructor and getting help in office hours.

## Advice

In order to have a successful semester in this class, it is in your best interest to attend all lecture and follow along with the notes in class. Please come to class, it will make exam preparation and homework easier. Reading the textbook material will be helpful to fill in any gaps in your understanding.

If you keep up with lecture and reading, it is my hope that you will be able to solve most homework problems within an hour each. If you are stumped for over an hour, please e-mail me or come to office hours. Ask for help along the way and the class will go much smoother for both of us.

## “Dead Week”

This class follows the Iowa State University Dead Week policy as noted in section 10.6.4 of the Faculty Handbook <http://www.provost.iastate.edu/resources/faculty-handbook> (<http://www.provost.iastate.edu/resources/faculty-handbook>).

## Academic Honesty

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>

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## Disability Resources

Iowa State University complies with the Americans with Disabilities Act and Sect 504 of the Rehabilitation Act. If you have a disability and anticipate needing accommodations in this course, please contact the instructor to set up a meeting within the first two weeks of the semester or as soon as you become aware of your need. Before meeting with the instructor, you will need to obtain a SAAR form with recommendations for accommodations from the Disability Resources Office (<http://new.dso.iastate.edu/dr/student>), located in Room 1076 on the main floor of the Student Services Building. Their telephone number is 515-294-7220 or email [disabilityresources@iastate.edu](mailto:disabilityresources@iastate.edu) (<mailto:disabilityresources@iastate.edu>). Retroactive requests for accommodations will not be honored.

## 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 (<http://new.dso.iastate.edu/sa/>) at 515-294-1020 or email [dso-sas@iastate.edu](mailto:dso-sas@iastate.edu) (<mailto:dso-sas@iastate.edu>), or the Office of Equal Opportunity and Compliance (<http://www.hrs.iastate.edu/hrs/node/99>) 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 (<http://new.dso.iastate.edu/>) or the Office of Equal Opportunity and Compliance (<http://www.hrs.iastate.edu/hrs/node/99>).

## Contact Information

If you are experiencing, or have experienced, a problem with any of the above policies, email me or [academicissues@iastate.edu](mailto:academicissues@iastate.edu) (<mailto:academicissues@iastate.edu>).

## Disclaimer

Syllabus is subject to change.