IE 1071: Statistical Testing and Regression- Spring 2025

Class:

Section 1
Time: Tuesday 8:15 -11:00 AM
Location: S503

Instructor:

Rong Yin, PhD, rong.yin@scupi.cn
Office: N416, SCUPI Building
Office hours: Wednesday 3:00 - 6:00 PM
Contact instructor:

- You are, of course, welcome to ask questions right after each class
- Attend office hours or via email (Email is the easiest way to reach me)

Teaching Assistant:

Section 1
Ms. Yitian Luo (罗伊甜)
Email: 2022141520100@stu.scu.edu.cn

TA Responsibilities: TAs primarily support the instructor across a range of tasks, including grading homework, lab reports, and exams, addressing student inquires, and contributing to the smooth functioning of educational environments.

Office hours:

Instructor:

- Right after each class in the classroom.
- Wednesday 3:00 - 6:00 PM.

TAs:

- TBD and by appointment
- Online via QQ Group or via email or Tencent Meeting

Credit Hours: 3

Notes:

- This syllabus is **subject to change**. Please follow updates announced during class and posted on Blackboard website. Lecture slides, reading assignments, course grades and announcements will also be provided through Blackboard.
- When emailing the instructor or TAs, please include “IE 1071” in the subject field of your message. Please use your university email account (student_ID_number@stu.scu.edu.cn), since emails from other accounts might be stopped by the SCU spam filter. Thanks!

Website:

- Blackboard
- Tencent Meeting for online lectures if necessary

Course Description:

Following IE 1070, this course is designed to introduce the fundamental concepts of probability, statistical testing, and their common applications in engineering. To prepare students for the application of these concepts in IE courses such as IE 1081, IE 1083, and technique selective: Quality Management and Six Sigma.

Course Objectives:

- To introduce the fundamental concepts of probability and statistics and their usage in decision making under uncertainty.
- To learn how to interpret data and understand statistical inference.
- To provide practical experience in applying statistic principles in engineering problems.

Applicable ABET Outcomes:

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Textbook:

Walpole R. E. Myers R. H. Myers S. L. & Ye K. (2012). *Probability & statistics for engineers & scientists* (9th ed.). Prentice Hall.

Assessments:

The course grade will be determined as follows:

- In-class quiz, activities, and attendance: 10%
- Homework: 25%
- Midterm exam: 30%
- Final Exam: 35%

Grades:

Letter grades will be given as follows:

90.00 – 100.00 A	85.00 – 89.99 A-	80.00 – 84.99 B+	76.00 – 79.99 B	73.00 – 75.99 B-
70.00 – 72.99 C+	66.00 – 69.99 C	63.00 – 65.99 C-	60.00 – 62.99 D	0.00 – 59.99 F

In-class activities and quizzes:

Random quizzes will be given during classes. You will **NOT** receive grades for quizzes that you did not attend. There will be **no** make-up for in-class activities and quizzes. Students are NOT allowed to switch sections to attend in-class activities and quizzes. If you have to miss one class due to reasonable excuses, you must inform the Instructor for permissions **before** the class.

Homework:

Homework will be assigned regularly and are generally due at the start of the next class. All work will be submitted electronically through the Blackboard platform. Late submission will **NOT** be accepted. Students are responsible for correctly submitting the homework through Blackboard. Please make sure your TA can clearly see your submitted files. Generally, pdf files are preferred. Please include your name and student ID when submitting your homework.

If you have any problems about your grades, please discuss the issues with your TA within **ONE week** from the grades are given. Any arguments, for example, about your homework 1 at the end of semester will not be allowed.

Please show all your work to receive full credit. You may lose points (or even receive **ZERO**) if you lose key process in solving the homework questions. However, you may also receive partial credit even if your final solution was wrong.

Exams:

There will be one midterm exam at the middle of this semester and one final exam at the end of this semester. The exams will be **closed book and closed notes**. However, students are allowed to bring **one A4 page sheet** and it must be **hand-written on two sides** of the paper. Printed materials are **NOT** allowed. If you have to miss an exam, you **MUST** obtain permission with reasonable excuses **before** the exam is given. If you miss an exam without prior notification, you will receive a score of "**ZERO**" for that exam except under extenuating circumstances. More details about the exam schedule and requirements will be covered in class. Early preparation for your exams is strongly recommended. For IE students, a make-up exam may be given if you fail this course. However, per the organizational policy, the make-up exam grades will not be higher than 60 if you fail the course.

Class Policy:

Class attendance is **expected** and important for your success in this course. Not keeping up with the course will hurt your grade in a general way. Valid excuses for absence may be accepted before class. Important dates and plans will be announced during class. Each student is responsible for all assigned work in class and for maintaining awareness of all announcements posted to Blackboard and all e-mails sent to his or her SCU e-mail address. It is the students' responsibility to obtain all class materials (e.g., handouts). Video recording is prohibited during class to maintain a free discussion atmosphere. Please silence your cell phones to prevent disturbing your classmates in class.

You are free on this course to discuss any aspect of the homework with anyone, such as your classmates, your friends, and your TAs, but the written responses must be your own. Academic dishonesty will not be tolerated.

Tentative Course schedule (February 25, 2025)

*__Note__: This course schedule is **tentative** and **subject to change**, please follow the newest announcements in class and on Blackboard

Week	Date	Topic	Chapter
1	2/25	Introduction; Fundamental Sampling Distributions and Data Descriptions (1)	8
2	3/4	Fundamental Sampling Distributions and Data Descriptions (2)	8
3	3/11	One- and Two-Sample Estimation	9
4	3/18	One- and Two-Sample Estimation (2)	9
5	3/25	One- and Two-Sample Estimation (3) & Tests of Hypotheses (1)	9,10
6	4/1	Tests of Hypotheses (2)	10
7	4/8	Tests of Hypotheses (3)	10
8	4/15	Tests of Hypotheses (4)	10
9	TBD	**Midterm Exam**	
10	4/29	Linear regression (1)	11
11	5/6	Linear regression (2)	11
12	5/13	Sample Linear regression (3) & multiple linear regression (1)	11,12
13	5/20	Multiple linear regression (2)	12
14	5/27	One-way ANOVA	13
15	6/3	Factorial experiments	14
16	6/10	Nonparametric statistics	16
17	TBD	**Final Exam**	