STAT 1000

Applied Statistical Methods

Spring 2025

Class

- **Section 1**
    - Time: Tuesday 10:15 – 11:55
          Thursday 10:15 – 11:55
    - Location: N-211
- **Section 2**
    - Time: Tuesday 13:50 – 15:30
          Thursday 13:50 – 15:30
    - Location: N-211

Instructor

- Name: Di Liu
- Email: di.liu@scupi.cn
- Office: N-413

TAs

- Name: Xinyue Zhang
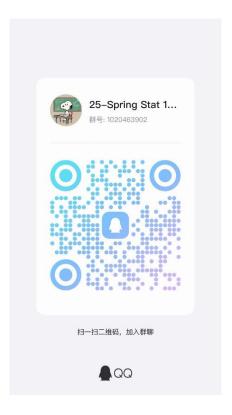   - Email: 2021141520222@stu.scu.edu.cn
- Name: Lingyan He
    - Email: 2023141520141@stu.scu.edu.cn

QQ group

- 1020463902

Office hours

- Right after each class in the classroom.
- Instructor: Section 1: Tuesday 8:30 - 10:00, 15:30 - 17:00, or by appointment.
- Instructor: Section 2: Thursday 8:30 - 10:00, 15:30 - 17:00, or by appointment.

Notes

- This syllabus is subject to change. Please follow updates announced during class and posted on Blackboard website.
- When emailing the instructor or TAs, please include "STAT 1000" in the subject field of your message. Use your university email account (student_ID_number@stu.scu.edu.cn), since mails from other accounts might be stopped by the SCU spam filter. Thanks! ^_^

Course Description

This course is an intensive introduction to statistical methods. It is designed for students who want to do data analysis and to study further ideas in applied statistics beyond this course. Topics include Describing Distributions, Probability and Random Variables, Estimating with Confidence, Hypothesis Testing, Linear Regression, and One-Way ANOVA. Students will also learn how to use the statistical computer package **Minitab**.

Prerequisites

- N/A

Course Objectives

- To understand basic concepts of statistics and probability
- To be proficient at the use of **Minitab** and apply basic statistical techniques to a variety of subjects with the aid of **Minitab** statistical software

Applicable ABET Outcomes

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- 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.

Minitab

- Minitab Statistical Software is a comprehensive statistical and graphical analysis software package used by many quality engineers/professionals and data analysts around the world. I would like to encourage each of you to install the Minitab 21 on your laptop or desktop computer.

Textbook

- Moore, David S., McCabe, George P., and Craig, Bruce A. (2014). Introduction to the Practice of Statistics, 8th ed., W.H. Freeman and Company, New York.

Assessments

- In-class Quiz: 10%
- Homework: 20%
- Midterm Exam: 30%
- Final Exam: 40%

Grade

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

Class Policy

Regular attendance is essential and expected. Important dates and plans will be announced during class. **It is imperative that you come to class prepared.** This will generally involve reading one or more chapters of the textbook, thinking, engaging with fellow students, practice and performing preliminary calculations. This is a Four credit hours class, which means you should expect to devote at least 12 hours of effort outside the scheduled class time every week.

Homework and Other Assignments

Homework problems and other assignments will be assigned periodically and are due as stated in the assigned paper. All work will be submitted electronically through the Blackboard system. Late submission **WILL NOT** be accepted. **Students' names and ID numbers** must be listed on the first page. It is your duty to make sure that submission through Blackboard has been properly processed. Unless specifically requested, emailed homework will not be accepted. If you have a compelling emergency that prevents you from turning in the homework on time, please email the instructor.

All of the homework scores will be used in your grade computation. Unless otherwise indicated, you can work with your fellow classmates in the class, but you must submit a distinct and independent write-up to receive credit. If plagiarism is caught, zero score for all homework.

If you believe an error has been made in the grading of an assignment, bring it to the attention of your TA **within ONE WEEK** from its return.

Please adhere to these homework guidelines:

- Put your name, ID number (last 4 digits), and class section at the top of the first page.
- All work must be shown for each solution to receive full credit. Present your solution in a logical fashion, showing and explaining all steps in detail.
- Obtaining the correct answer includes getting the correct quantity, number of significant digits, sign, and unit.

Exams

There will be two exams (one Midterm and one Final), all are **CLOSED-BOOK**. Students can bring one A4 page note and it must be **hand-written on two sides** of the paper. It cannot be a photocopy. If you must miss an exam, you **MUST** make alternative arrangements with the instructor 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.

Make-Up Exams

Students who have not taken either the midterm or the final exam are NOT eligible to take the make-up exam. Students taking make-up exams can only attain at most a "D" grade.

Avoiding Plagiarism

- Unacknowledged direct copying from the work of another person, or the close paraphrasing of somebody else's work, is called plagiarism and is a serious offence, equated with cheating in examinations. This applies to copying both from other students' work and from published sources such as books, reports or journal articles.
- Paraphrasing, when the original statement is still identifiable and has also no acknowledgement, is plagiarism. A close paraphrase of another person's work must have an acknowledgement to the source. It is not acceptable for you to put together Unacknowledged passages from the same or from different sources linking these together with a few words or sentences of your own and changing a few words from the original text: this is regarded as over-dependence on other sources, which is a form of plagiarism.

Tentative Topics

Week	Date	Topic	Chapters
1	2/25, 2/27	Describing Distributions	Chapter 1
2	3/4, 3/6	Relationships of Two Variables	Chapter 2
3	3/11, 3/13	Producing Data	Chapter 3
4	3/18, 3/20	Probability and Random Variables	Chapter 4
5	3/25, 3/27	Probability and Random Variables	Chapter 4
6	4/1, 4/3	Sampling Distribution	Chapter 5
7	TBD	Review and Midterm	
8	4/15, 4/17	Estimating with Confidence	Chapter 6
9	4/22, 4/24	Introduction to Hypothesis Testing	Chapter 6
10	4/29, 5/1	Inference for Distributions, *Labor Holiday (No class)*	Chapter 7
11	5/6, 5/8	Inference for Distributions	Chapter 7
12	5/13, 5/15	Inference for Proportions	Chapter 8
13	5/20, 5/22	One-Way ANOVA	Chapter 12
14	5/27, 5/29	Simple Linear Regression	Chapter 10
15	6/3, 6/5	Multiple Linear Regression	Chapter 11
16	6/10, 6/12	Review	
17	TBD	Final Exam	