

## FCS 3210 – FCS Statistics

Spring Semester 2025

Tuesday and Thursday 04:35 PM – 06:35 PM, James Talmage Building 120

**Credits:** 4

**Instructional Mode:** In-person

**Instructor:** Vivekananda Das, Ph.D.

**Email:** viv.das@utah.edu

**Office Hours:** Tuesday and Thursday 3:30 PM – 4:30 PM and by appointment

**Office Location:** Alfred Emery Building 246

### Required Materials

This course does not require a textbook. However, **there will be required readings for each module**, which can be found on the Canvas course website.

### *Software:*

- We will primarily use **R** in this course. You can sign up for the [RStudio cloud version](#) using your email. Additional resources for conducting statistical analysis in **Excel** will be provided.

### Course Description

This course introduces students to the fundamental principles of statistics with three primary goals:

- Develop statistical literacy to critically evaluate graphs, charts, tables, and other data products encountered in everyday life
- Understand and interpret statistical methods in social science research papers
- Become familiar with key statistical tests and their applications

By the end of the course, students will be equipped to use statistical reasoning in their personal and professional lives.

### Teaching and Learning Methods

In this course, I aim to create an engaging and interactive learning environment that combines lectures, discussions, case studies, and problem-based learning. Each lecture will cover key concepts, followed by discussions and case studies to apply what we have learned in real-world scenarios. I believe in experiential learning, where students actively participate in their learning process through activities that simulate real-life challenges.

Students are encouraged to engage with the material both inside and outside of class, as active participation is crucial for deep understanding. While I expect students to attend each lecture, I recognize that circumstances may arise, so **I allow up to 3 missed lectures without penalty**. However, **attendance is crucial as it directly impacts participation in in-class activities, which are designed to reinforce the learning objectives**.

My teaching philosophy centers around the idea that students learn best when they are actively involved in the learning process. By fostering an environment that values inquiry, collaboration, and practical application, I aim to help students not only grasp the material but also develop critical thinking and problem-solving skills that will benefit them beyond this course.

**Course Schedule:**

Students are required to be diligent. This requires multiple tasks each week, so staying on top of them is crucial for success. You will have access to the correct answers for most quizzes and assignments. If you would like additional feedback, you are encouraged to make an appointment to go over course assignments. The anticipated timetable for the course is as follows. If small adjustments become necessary due to unforeseen circumstances, students will be notified via the course website and given a reasonable amount of time to make any adjustments.

Module #	Module Title	Date	Assignment Due
1	Introduction to data and statistics	January 7,9	January 19
2	Descriptive statistics	January 14, 16	January 26
3	Categorical data visualization	January 21, 23	February 2
4	Continuous data visualization	January 28, 30	February 9
5	Statistical inference (z-test and t-test)	February 4, 6	February 16
6	Correlation and causal inference	February 11, 13	February 23
	<b>Midterm Review</b>	<b>February 18</b>	
	No class	February 20	
	<b>Midterm Exam</b>	<b>February 25</b>	
7	Chi-square test and analysis of variance	February 27, March 4	March 16
8	Linear regression	March 6	March 23
	<b>Spring Break</b>	<b>March 9 – March 16</b>	
9	Linear regression	March 18, March 20	March 30
10	Sampling methods and survey development	March 25, March 27	April 6
11	Practical applications and review	April 1, April 3	April 13
12	Strategic use of statistics for creating a narrative	April 8, April 10	April 20
	<b>Final Exam Review</b>	<b>April 15</b>	
	<b>Final Project Presentation</b>	<b>April 17</b>	
	<b>Final Exam</b>	<b>April 24</b>	

All assignments, unless otherwise announced, must be submitted to the designated area of Canvas. Do not submit assignments via email.

*For each day a submission is late after the deadline, 10% of the total points will be deducted. For example, if the assignment is worth 100 points and it is submitted one day past the deadline, the maximum score achievable will be 90 points. If the assignment is submitted two days late, the maximum score achievable will be 80 points, and so on.*

**Grading:**

The grade of this course is determined based on the following:

	Points	%
Introduce Yourself	20	1.29%
Weekly Assignment	13*40 = 520	33.55%
In-Class Assignment	13*20 = 260	16.77%
Midterm Exam	232.5	15.00%
Final Project	155	10.00%

Final Exam	232.5	15.00%
Attendance & Participation	130	8.39%
Total	1550	100%

University instructors are strongly encouraged to provide exact grading scales at the beginning of the semester. Personally, I like a more flexible approach, but for the sake of clarity, you can count on me using a scale that is no more strict than the following:

***	< 90.0 to 87.0: B+	< 80.0 to 77.0: C+	< 70.0 to 67.0: D+	Below 61.0%: E
100 to 94.0: A	< 87.0 to 84.0: B	< 77.0 to 74.0: C	< 67.0 to 64.0: D	***
< 94.0 to 90.0: A-	< 84.0 to 80.0: B-	< 74.0 to 70.0: C-	< 64.0 to 61.0: D-	***

## University Policies

1. ***The Americans with Disabilities Act.*** The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability & Access, 65 Student Services Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability & Access.

*Given the nature of this course, attendance is required and adjustments will only be permitted as required by Policy 6-100(III)(O). If you need to seek an ADA accommodation to request an exception to this attendance policy due to a disability, please contact the Center for Disability and Access (CDA). CDA will work with us to determine what, if any, ADA accommodations are reasonable and appropriate.*

In compliance with ADA requirements, some students may need to record course content. Any recordings of course content are for personal use only, should not be shared, and should not be made publicly available. In addition, recordings should be destroyed at the conclusion of the course.

2. ***University Safety Statement.*** The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit <https://safeu.utah.edu>
3. ***Addressing Sexual Misconduct.*** Title IX makes it clear that violence and harassment based on sex and gender (which Includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 383 South University Street, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).
  - a. **Lauren's Promise:** Lauren's Promise is a vow that anyone – faculty, staff, students, parents, and community members – can take to indicate to others that they represent a safe haven for sharing incidents of sexual assault, domestic violence, or stalking. Anyone who makes Lauren's Promise vows to: 1.) listen to and believe those individuals who are being threatened or experiencing sexual assault, dating violence or stalking; 2.) represent a safe haven for sharing incidents of sexual assault,

domestic violence, or stalking; and 3.) change campus culture that responds poorly to dating violence and stalking. By making Lauren's Promise, individuals are helping to change campus cultures that respond poorly to dating violence and stalking throughout the nation.

4. **Academic Misconduct Statement.** It is expected that students adhere to University of Utah policies regarding academic honesty, including but not limited to refraining from cheating, plagiarizing, misrepresenting one's work, and/or inappropriately collaborating. This includes the use of generative artificial intelligence (AI) tools without citation, documentation, or authorization. Students are expected to adhere to the prescribed professional and ethical standards of the profession/discipline for which they are preparing. Any student who engages in academic dishonesty or who violates the professional and ethical standards for their profession/discipline may be subject to academic sanctions as per the University of Utah's Student Code: <https://regulations.utah.edu/academics/6-410.php>
5. **Drop/Withdrawal Policies.** Students may drop a course within the first two weeks of a given semester without any penalties. Students may officially withdraw (W) from a class or all classes after the drop deadline through the midpoint of a course. A "W" grade is recorded on the transcript and appropriate tuition/fees are assessed. The grade "W" is not used in calculating the student's GPA. For deadlines to withdraw from full-term, first, and second session classes, see the U's Academic Calendar.
6. Other important information:
  - a. Student Code: <http://regulations.utah.edu/academics/6-400.php>
  - b. Accommodation Policy (see Section Q): <http://regulations.utah.edu/academics/6-100.php>
7. **Supports for Students.** Your success at the University of Utah is important to all of us here! If you feel like you need extra support in academics, overcoming personal difficulties, or finding community, the U is here for you. Please refer to the [Student Support Services page for the U](#) for updated information.
8. **Basic Needs Student Support Statement.** Success at The University of Utah includes learning about and using available resources. The [Basic Needs Collective](#) (BNC) is a coordinated resource referral hub. They educate about and connect students to campus and community resources to help them meet their basic needs. As a central location for resource referrals related to food, housing, health insurance, managing finances, legal services, mental health, etc., any student experiencing difficulty with basic needs is encouraged to contact them. Drop into their office located in the Union basement or schedule with them online for an in-person or virtual visit through their webpage: <https://basicneeds.utah.edu/>.

*Note: This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of our class. Any changes will be announced in class and posted on Canvas under Announcements.*