

Oklahoma City University
DATA SCIENCE FUNDAMENTALS (CSCI 6213)
Fall, 2023

Lecture: W 6:00 pm – 9:00 pm (SSM 103)

Instructor: Steven Wilson, Adjunct Professor, Computer Science & Mathematics

Email: steven.wilson@okcu.edu

Course Description:

An introduction to probability and statistical inference used in data science. Topics include random variables, sampling distributions, statistical significance, analysis of variance, hypothesis testing, regression, and classification.

Pre-requisite: No Pre-requisites

Course Goals and Objectives:

The course goal is to provide students with an overall understanding of

1. Using Python in data science
2. Data collection, exploration, and preparation
3. Sampling distributions
4. Statistical experiments
5. Regression and classification
6. Statistical machine learning

Textbook: Bruce, P., Bruce, A., & Gedeck, P. (2020). *Practical Statistics for Data Scientists: 50+ Essential Concepts Using R and Python (2nd ed.)*. O'Reilly Media.

Optional Textbook: Downey, Allen B. (2011). *Think Stats*. <https://greenteapress.com/wp/think-stats-2e/>

Additional required reading supplements may be provided by the instructor.

Students must access and use OKCU's online learning platform, "D2L" (Desire to Learn; <https://ocuonline.okcu.edu>) for accessing and turning in course materials as instructed.

Attendance Policy / Makeup Work:

Attendance will be taken at every class period and will be reported in accordance with university policy. You are *urged* to attend every lecture and are responsible for any material presented in your absence.

Make-up exams will only be given **at the discretion of the instructor**, with documentation from the student regarding the reason for missing the exam.

Grading:

There will be one exam (Final) in this course. Homework is worth 60% of your grade and Final worth 40% of your grade.

	Points	Percentage
Homework (6)	300	60%
Final	200	40%
Total	500	100%

Percentage		Grade		Percentage		Grade
92	100	A		72	76	C
90	91	A-		70	71	C-
87	89	B+		67	69	D+
82	86	B		62	66	D
80	81	B-		60	61	D-
77	79	C+		0	59	F

Tentative Lecture Schedule

Week	Wednesday
1	8/23 - Lecture 01
2	8/30 - Lecture 02
3	9/6 - Lecture 03
4	9/13 - Lecture 04
5	9/20 – Lecture 05
6	9/27 – Lecture 06
7	10/4 – Lecture 07
8	10/11 – Final

Late Work Policy

It is critical that we stay on time since the semester is only 8 weeks. As a result, no late assignments will be accepted and a grade of 0% will be given for any missed assignments. However, the lowest

homework grade will be rounded up to 100% for every student with perfect class attendance in the semester.

Incomplete Grade Policy:

A grade of Incomplete (“I”) will only be assigned if a single exam cannot be completed due to documented extenuating circumstances such as hospitalization or a death in the family. The “I” will be removed in accordance with university policy stated in the 2018-19 web-based undergraduate catalog.

Exams:

All exams will include simple objective questions, “multiple-multiple” choice questions, pseudo code writing and short answer questions.

Students are responsible for all material covered in class and all reading and problem assignments. The best guide for exam preparation will be detailed lecture notes.

The unit exams will cover only material presented since the previous unit exam; the comprehensive final will cover all units equally.

Projects/Programming Assignments:

The Programming Assignments will be in Python. The grading of the Programming Assignments is a combination of completeness (all specifications are covered), correctness of results, and style. Students need to work on Projects as individuals and should NOT share code or copy other students work. All programming assignments are due at the beginning of class on the due date. I do not allow late work to be submitted unless there is prior written approval by me based on special circumstances.

Cheating Policy:

Cheating will not be tolerated, and cheating will be handled according to the university’s academic honesty policy, stated in the 2021-22 web-based undergraduate catalog. Students should avoid any activity that might give the appearance of cheating, and students found cheating will receive a zero point grade on all relevant exams or quizzes.

Electronics:

Out of respect for the professor, fellow students, and class material, students should refrain from the use of electronic devices (for purposes unrelated to class) while in class.

Syllabus Policy:

The student is responsible for reading and understanding the policies outlined in the syllabus. The lecture schedule for the course is referred to as “tentative”, yet every effort will be made to follow the schedule as closely as possible. The lecture topic will deviate from the schedule

only when certain topics require more or less time than was scheduled. If a substantial change must be made to the course schedule (such as unavoidable cancellation of a class), students will be notified via university email and on D2L.

*** Tornado Shelter for Sarkey Bldg – any interior classroom on first floor;
Evacuation Route for first floor of Sarkey Bldg – Northwest doors on first
floor; assemble on activities lawn**

Academic Complaints:

“Students are encouraged to utilize Oklahoma City University’s internal complaint policies through the Office of the Provost/Vice President for Academic Affairs prior to filing a complaint with any external entity. Students may submit an official Academic Complaint at <http://www.okcu.edu/academics/complaints>. Academic complaints submitted will be received by the Office of the Provost/Vice President for Academic Affairs, and will be investigated by that office for action or further resolution.

Submitting an academic complaint via this form does not initiate a formal appeal process under the student handbook or the current University catalogue found under quick links:

<https://www.okcu.edu/academics/home>”

Civil Rights, Equity, and Access:

A. Nondiscrimination Policy

The Nondiscrimination Policy prohibits discrimination in the University community, including students, faculty, staff, guests, and visitors. Acts of discrimination, including harassment based on a protected category, may limit, deprive, or deny educational/employment access, benefits, and opportunities. This policy prohibits discrimination based on race, ethnicity, national origin (including ancestry), religion, sex, gender identity, gender expression, sexual orientation, pregnancy, age, disability, domestic violence victim status, veteran or military status, and other protected categories under federal law. For a complete list of prohibited forms of discrimination, definitions, and examples, please visit [University Policies - Oklahoma City University](#) to access the Nondiscrimination Policy. The University’s Compliance Coordinator, Ms. Joey Croslin, oversees prevention and response programs addressing discrimination in our community. To make a report, ask questions, or learn more, please contact Ms. Croslin at (405) 208-5075 or jcroslin@okcu.edu.

B. Sexual Harassment and Misconduct (Title IX)

The Nondiscrimination Policy also prohibits a number of forms of sex discrimination, including sexual harassment, sexual misconduct, intimate partner violence, and stalking. That policy includes definitions and examples of these terms as well as the procedures for the investigation and resolution of Complaints. Many of these issues are also prohibited by Oklahoma criminal law and may be reported to campus or local police in addition to the University. When the University receives a report, the reporting party will be contacted by a Title IX administrator to discuss options for confidential support, interim measures to address safety/access concerns, and formal and informal procedures for resolving Complaints as appropriate.

To make informed choices, it is important to be aware of mandatory reporting requirements for campus resources. Nearly all University employees, including faculty, are required to report known/suspected discrimination to the Compliance Coordinator within 24 hours. Confidential options including University Counseling and advocacy services can maintain privacy. They do not disclose information about reports to university officials without explicit permission.

Please visit [Title IX Information - Oklahoma City University](#) for more information about confidential resources, reporting options, policies and procedures, and contact information for University Title IX administrators. For emergencies, please call campus police at (405) 208-5911 or local police at 911.

C. Disability Accommodations (ADA / Section 504)

If you believe that you need reasonable accommodations for a documented physical, psychiatric, and/or learning disability or attention disorder, please make sure to register with Campus Disability Services by filling out the New Student Application at the following link: [OKCU Disability Information Form - DSV4-LionHead](#). The Senior Coordinator for Access and Academic Support is responsible for coordinating student disability-related accommodations and, if approved, will issue students a Letter of Accommodation. Reasonable accommodations may require early planning and are not provided retroactively, so please start this process as soon as possible. If you have general questions about reasonable accommodations, you may contact the Senior Coordinator for Access and Academic Support, Jenny Minsberg, at jlminsberg@okcu.edu and in DBL 106C.

D. Religious Accommodation

Oklahoma City University seeks to be supportive of religious observance among the members of our diverse campus community and to be as accommodating as possible. Students should discuss with their instructor at the beginning of the semester forms of religious observance (dress, fasting, specific prayer times) that may affect their full participation in the course. Students should also compare the class schedule to their own religious calendar to determine if there will be any class days in which the student expects to be absent due to the observance of a religious holiday. Students must notify the instructor, in writing, of the expected absence within the first two weeks of the semester. The instructor will then work with the student to develop a plan to reschedule any exams, assignments, or course activities for that day. The instructor, at his/her own discretion, will make reasonable accommodations wherever possible. Students should recognize, however, that there may be some course aspects that cannot be rescheduled or accommodated, and it will therefore rest upon the student to determine whether they wish to remain enrolled in the course or have their grade potentially affected.