

Syllabus for STOR 151-Section 1: Introduction to Data Analysis, Spring 2024

Instructor: Professor Richard L. Smith
E-mail: rls@email.unc.edu

Office hours: Monday 1:00-3:00,
Wednesday 12:00-1:30.
Office: 303 Hanes Hall

Optional zoom link for office hours: <https://unc.zoom.us/j/8238989389>

Instricutional Assistant: Brian White, bnw@unc.edu. Office hours: Tuesdays 1-2 pm; Fridays 11-noon; by zoom at <https://unc.zoom.us/j/94460385340>

Grader: Max Bauman, maxwjohn@email.unc.edu

Classes: Tuesday, Thursday 2:00-3:15 p.m., 105 Gardner Hall

Course URL: I will place materials that I intend to make public on the course web page, <https://rls.sites.oasis.unc.edu/s151-S24/index.html>. I will also make extensive use of the canvas page for this course so please log into that and check the page regularly.

Description: This course covers basic concepts of statistics and data analysis. Topics include statistical reasoning, including sampling, elementary probability, statistical inference, and data analysis. We will closely follow the textbook below in the following order (numbers are chapters):

1. Introduction to data
2. Summarizing data
3. Probability
4. Distributions of random variables
5. Foundations for inference
6. Inference for categorical data
7. Inference for numerical data

If time permits, we may also cover parts of Chapters 8 (Introduction to linear regression) and 9 (Multiple and logistic regression).

Textbook: OpenIntro Statistics by David Diez, Mine Çetinkaya-Rundel and Christopher D Barr (fourth edition). Information about this text is available from the following website: <https://www.openintro.org/book/os/>. The book is available as a free downloadable pdf file (they will ask you for a donation of \$15, which I recommend that you pay, but this is not obligatory) or is available as a hardcopy edition from Student Stores (I don't know the exact costs but it should be about \$30).

Please download your own copy of the textbook. You are strongly encouraged to print it or else buy a hardcopy version.

Prerequisites: Math 110 (Algebra) or equivalent.

Final Grade: HW Assignments (15%) – This may include quizzes and class projects. The three lowest homework scores will be dropped from the grade calculation.

Midterm Exam 1 (22%), Tentative: Thursday, February 8, during class

Midterm Exam 2 (23%), Tentative: Tuesday, March 26, during class

Final Exam (40%), Friday, May 3, noon-3:00 p.m., Location TBD

If for any reason you find you cannot attend either midterm, please let me know. If enough students have difficulties with one of the midterm dates, I may change it – please watch for possible announcements. The date of the final exam is fixed by the registrar’s office and cannot be changed.

HW Assignments: Homework assignments will be due each week, except when there is an exam. Assignments will be posted in Gradescope and are expected to be completed before the Thursday class. However, the formal deadline will normally be **11:59 pm Thursday**. (Watch for any changes!) Each homework assignment will have the same weight. Assignments will be handed in through gradescope. I would be delighted if you used MS Word or some other word processing package to create the assignment, but this is not a requirement – handwritten assignments are perfectly acceptable so long as they are acceptably neat and legible. I recommend using a scanner rather than a cellphone camera but the latter will be acceptable so long as the image is readable. Whatever your mode of transmission, however, it is important to show your work and explain clearly how you got the answer – just giving the answer without any explanation will not get full credit even if it’s correct. Late homework and any homework violating the above rules will not receive credit.

When submitting homeworks using gradescope, please remember to assign pages for each question (if you submit the whole assignment in a single file) or submit separate solutions for each question or part-question. In all cases, make sure your final answer to each question or part-question is clearly stated.

You are encouraged to discuss homework problems with your classmates, the instructor, and the teaching assistant. However you must write out your own solution with individual comments. Copying of homework is forbidden, and it is a violation of the Honor Code, please see the last item in this document.

Exams: All midterm exams and the final exam are required. All exams are open book – you are allowed to bring your course text and your own personal notes to the exam, but not other materials. You are also strongly encouraged to bring a calculator. If you have **three finals within a 24 hour period**, and will need to be excused from the regularly scheduled final exam, then you must obtain a written Dean’s excuse and discuss the situation with me **at least two weeks before the regularly scheduled final exam** so that an alternative arrangement can be made.

Tutoring: The department offers tutoring by experienced instructors for all students in STOR 151 and 155. These take place every Sunday through Thursday evening, on Zoom from 7:00PM - 8:00 PM. You can access these meetings at <https://unc.zoom.us/j/96340228113>. In addition, there is a university-organized peer tutoring service <https://learningcenter.unc.edu/services/peer-tutoring/>. The service includes STOR 151. You can go to their website and request an appointment.

Class Policies: You are expected to attend each class. Attendance does not factor into your course grades but failure to attend class will not be accepted as an excuse for missing an assignment or exam. If you know in advance that you will not attend certain classes, I strongly encourage you to email me or discuss it with me in class. In that case, I can warn you of any activities you may miss. **No laptops or cellphones in class, but do bring a calculator to classes and exams!** There may be certain classes where a laptop is required, but in this case, I shall let you know well in advance. As for a calculator, there is no recommended model but please get one that is sophisticated enough to perform standard math operations, e.g. square roots, exponentials and logarithms.

Face Masks and Vaccinations: There is no requirement that students at UNC must either wear a face mask or be vaccinated. Nevertheless, I urge you to be cautious and considerate of your fellow students (and me) on these matters, especially if you think you might have been exposed to one of the COVID variants. My recommendation is that you continue to wear a face mask in most indoor settings where you are with people who are not family members or close friends, but this is not a requirement.

If you have still not had a COVID vaccination, I urge you to consider doing so.

If there is a new COVID emergency during the semester, we shall follow any additional policies that may be established by UNC.

Accessibility Resources

The University of North Carolina at Chapel Hill facilitates the implementation of reasonable accommodations, including resources and services, for students with disabilities, chronic medical conditions, a temporary disability or pregnancy complications resulting in barriers to fully accessing University courses, programs and activities.

Accommodations are determined through the Office of Accessibility Resources and Service (ARS) for individuals with documented qualifying disabilities in accordance with applicable state and federal laws. See the ARS Website for contact information: <https://ars.unc.edu> or email ars@unc.edu. (source: <https://ars.unc.edu/faculty-staff/syllabus-statement>)

Counseling and Psychological Services (CAPS)

CAPS is strongly committed to addressing the mental health needs of a diverse student body through timely access to consultation and connection to clinically appropriate services, whether for short or long-term needs. Go to their website:

<https://caps.unc.edu/> or visit their facilities on the third floor of the Campus Health Services building for a walk-in evaluation to learn more. (source: Student Safety and Wellness Proposal for EPC, Sep 2018)

Title IX Resources

Any student who is impacted by discrimination, harassment, interpersonal (relationship) violence, sexual violence, sexual exploitation, or stalking is encouraged to seek resources on campus or in the community. Please contact the Director of Title IX Compliance (Adrienne Allison – Adrienne.allison@unc.edu), Report and Response Coordinators in the Equal Opportunity and Compliance Office (reportandresponse@unc.edu), Counseling and Psychological Services (confidential), or the Gender Violence Services Coordinators (gvsc@unc.edu; confidential) to discuss your specific needs. Additional resources are available at safe.unc.edu.

Honor Code: (For the complete honor code, please visit <http://instrument.unc.edu/>)

It shall be the responsibility of every student enrolled at the University of North Carolina to support the principles of academic integrity and to refrain from all forms of academic dishonesty, including but not limited to, the following:

1. Plagiarism in the form of deliberate or reckless representation of another's words, thoughts, or ideas as one's own without attribution in connection with submission of academic work, whether graded or otherwise.
2. Falsification, fabrication, or misrepresentation of data, other information, or citations in connection with an academic assignment, whether graded or otherwise.
3. Unauthorized assistance or unauthorized collaboration in connection with academic work, whether graded or otherwise.
4. Cheating on examinations or other academic assignments, whether graded or otherwise, including but not limited to the following:
 - (a) Using unauthorized materials and methods (notes, books, electronic information, telephonic or other forms of electronic communication, or other sources or methods);
 - (b) Violating or subverting requirements governing administration of examinations or other academic assignments;
 - (c) Compromising the security of examinations or academic assignments;
 - (d) Representing another's work as one's own; or
 - (e) Engaging in other actions that compromise the integrity of the grading or evaluation process.
5. Deliberately furnishing false information to members of the University community in connection with their efforts to prevent, investigate, or enforce University requirements regarding academic dishonesty.
6. Forging, falsifying, or misusing University documents, records, identification cards, computers, or other resources so as to violate requirements regarding academic dishonesty.
7. Violating other University policies that are designed to assure that academic work conforms to requirements relating to academic integrity.

8. Assisting or aiding another to engage in acts of academic dishonesty prohibited in the above items.

Administrative details

- All questions regarding course registration and waiting list should be directed at Ms. Christine Keat, crikeat@email.unc.edu.
- The instructor reserves the right to make changes to the syllabus.

Tentative Schedule for the Whole Semester (Revised Feb 15 but still subject to change!)

January 11: First class, Section 1.1 of text

January 16: Section 1.2

January 18: Sections 1.3, 1.4

January 23: Section 2.1

January 25: Section 2.2 (you read Section 2.3 on your own)

January 30: Section 3.1

February 1: Section 3.2

February 6: Review for Midterm 1

February 8: Midterm 1

February 13: Well-Being Day, no class

February 15: Sections 3.3, 3.4

February 20: Sections 3.5, 4.1

February 22: Continuation of Section 4.1 (normal distributions)

February 27: Sections 4.2 and 4.3

February 29: Sections 4.3, 4.5 + hypergeometric distribution (omit 4.4)

March 5: Section 5.1

March 7: Section 5.2

March 12,14: Spring Break

March 19: Section 5.3

March 21: Review for Midterm 2

March 26: Midterm 2

March 28: Well-Being Day, no class

April 2: Sections 6.1,6.2

April 4: Section 6.3

April 9: Section 6.4

April 11: Section 7.1

April 16: Sections 7.2, 7.3

April 18: Section 7.4

April 23: Sections 8.1, 8.2

April 25: Sections 8.4, 9.1

April 30: Overview of rest of Chapter 9; prep. for final exam.

May 3, noon: Final exam.