MEETING DAYS, TIMES, AND LOCATIONS

Lectures

- STAT 220A: Monday, Wednesday, and Friday 8:30-9:20 am: https://washington.zoom.us/j/92378741139?pwd=WWpDMnpS0nR3d21PY3VUaEtVVjVQT09 (password: Graunt220)

Quiz sections

- STAT 220AA:
  - Tuesday 12:30-1:20 pm (Will Brown) (password: Graunt220)
  - Thursday 12:30-1:20 pm (Johnny Paige) (login using UW NetID)

- STAT 220AB (Johnny Paige): Tuesday and Thursday: 1:30-2:20 pm (log in using UW NetID)

- STAT 220AC (Melody Jiang): Tuesday and Thursday: 12:30-1:20 pm (log in using UW Net ID)

- STAT 220AD (Melod Jiang): Tuesday and Thursday: 1:30-2:20 pm (log in using UW Net ID)

- STAT 220AE (Apara Venkat): Tuesday and Thursday: 12:30-1:20 pm (log in using UW NetID, password: 220AE2020)

- STAT 220AF (Apara Venkat): Tuesday and Thursday: 1:30-2:20 pm (log in using UW NetID, password: 220AF2020)

University Holidays (no classes or office hours)

- Wednesday 11 November 2020: Veterans Day
- Thursday 26 - Friday 27 November 2020: Thanksgiving

TEACHING TEAM

Instructor: William Brown, PhD (pronouns: he/him/his)

- Contact: brownw@uw.edu
- Office hours: Mo & Fr 9:30-10:30 am or by appointment (password: Graunt220)

TA: Melody Jiang (pronouns: she/her)

- Contact: yj49@uw.edu
- Office hours: Tuesdays 2:30 - 4:30 pm (log in using UW NetID)
TA: Johnny Paige (pronouns: he/him/his)

- Contact: paigejo@gmail.com
- Office hours: Thursdays 3:00 - 5:00 pm (log in using UW NetID)

TA: Apara Venkat (pronouns: he/him/his)

- Contact: aparav@uw.edu
- Office hours: Tuesdays 10:00 am - 12:00 pm (log in using UW NetID, password: 220AparaOH)

COURSE STRUCTURE

During the Autumn 2020 quarter, all lectures and quiz sections will be conducting remotely, via Zoom. Each section will be recorded and posted to the course website. Attending Zoom lecture and quiz section meetings in real time is strongly encouraged because this will allow you to interact with your teaching team and peers. However, because UW students are broadly distributed across the country and the world and/or face unique constraints regarding access to the internet, real-time attendance and participation are not required. Instead, course participation will be assessed based on assignments associated with your quiz sections.

REQUIRED TEXTBOOK AND OTHER MATERIALS


- The 9th Edition of the textbook is also widely available and is for the most part the same as the 10th Edition. If you already own the 9th Edition, don't worry about trying to get a copy of the 10th. When I prepare my lecture material and assignments, I will be comparing them in case any major differences between the two show up. Also, the 9th Edition has fish on the cover, so that's pretty cool.

A simple calculator, capable of addition, subtract, multiplication, division, squaring, and taking square roots. (Graphing calculators and calculator apps on electronic devices with access to the internet such as smartphones, laptops, and tablets are not permitted as "simple calculators.")

COURSE OVERVIEW

Course description
Statistics is the science of variability and includes a body of applied mathematical tools for describing and modeling such variability wherever we may encounter it in our world, whether in the physical, biological, or behavioral and social sciences. This course focuses on statistical *reasoning*, the "what" and "why" of statistics rather than the "how." The goal of this course is to introduce you with the underlying rationale of statistics, including the ability to distinguish between best practices in, as well as misuses of, statistics. While some of the concepts underlying statistical practice are relatively straightforward and intuitive, others are counterintuitive and require a bit of mental practice to grasp. This course will aim to give you such practice. More generally, this course aims to improve your critical thinking skills, using statistical reasoning as an example.

**Course objectives**

By the end of this course, you should be able to

- Understand the importance of systematically producing data as a point of entry into understanding patterns of variability in our world (Part I of the textbook)
- Summarize effective numerical and graphical ways of exploring and describing data once we have collected them, as well as identify limitations on different modes of data description (Part II of the textbook)
- Grasp the concept of probability and understand how this helps us to model and explore recurring patterns in variability, including in relationships between variables (Part III of the textbook)
- Understand how we can combine probability models with the patterns of variability we observe in data to make inferences about the larger populations from which such data come (Part IV of the textbook)

**ACADEMIC CONDUCT**

*Collaborative learning and diversity statement*

Acquiring new knowledge in a structured social setting is a very different experience from independent, self-guided learning. Interacting with your teaching team and with your peers presents a unique opportunity for knowledge acquisition, but to enjoy the full rewards of collaborative learning and the free exchange of ideas, mutual respect is indispensable between all parties involved. Your teaching team is committed to encouraging and valuing diverse student perspectives, showing every student our utmost respect, and investing ourselves in cultivating your mastery of the course content. We also expect that you will show each other and the teaching team a similarly high and sustained level of respect. We understand that diversity is integral to academic excellence and strive to create welcoming and respectful learning environments, promoting equal access and opportunity for everyone enrolled in the course. Actions on the part of students that contradict these goals are expressly in violation of the
University of Washington’s Student Conduct Code and are not tolerated. As a condition of enrollment, all students assume responsibility to observe high standards of conduct that will contribute to their own and their peers’ academic goals, as well as to the welfare of the academic community more generally. For more information on this and other policies related to diversity, please visit the following website: [http://www.washington.edu/diversity/](http://www.washington.edu/diversity/)

**Academic integrity statement**

Collaborative study is not only accepted but encouraged, if you find cooperation beneficial to your learning. However, for submitted course assignments (problem sets), one unique submission per student is required, written in your own words. If you have worked on submitted assignments with other students in the class, be sure to note this collaboration on your work, including your collaborators’ names. You cannot collaborate in any way with your peers or anyone else while completing the reading quizzes and exams. All submitted coursework should adhere to the University of Washington’s Student Conduct Code. Plagiarism is not tolerated. Plagiarism includes but is not limited to copying phrases, sentences, or paragraphs without proper citation; paraphrasing another person’s ideas or words without attribution; etc. Sharing answers to questions on quizzes and exams with your peers is also not tolerated. Academic misconduct of any kind is grounds for failure in the class and removal from the University of Washington. Lack of familiarity with the rules of academic conduct does not excuse misconduct. For more information please visit the following websites:


**EQUAL ACCESS, ACCOMMODATIONS, AND OTHER USEFUL RESOURCES**

All lectures will be conducted and recorded via Zoom. Attending lectures in real time allows students to ask questions of the instructor. If you are not able to attend, you should still watch the recorded lecture once it becomes available.

In the case of unexpected family, health, or other emergencies that interfere with your ability to complete assigned coursework on time, notification of absence at your earliest convenience is expected. Documentation to validate your absence may be requested by your instructor.

For students who have established accommodations with Disability Resources for Students (DRS, [http://depts.washington.edu/uwdrs/](http://depts.washington.edu/uwdrs/)), please communicate your approved accommodations to your instructor (William Brown) at your earliest convenience so we can discuss your needs in this course. For students who have not yet established accommodations through DRS but have a temporary health condition or permanent disability that requires accommodations, you are welcome to contact DRS at 206-543-8924 or uwdrs@uw.edu or disability@uw.edu. Such
conditions include but are not limited to mental health, attention-related, learning, vision, hearing, physical or health impacts. DRS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s), and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW’s policy, including more information about how to request an accommodation, is available at Religious Accommodations Policy (https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/). Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form (https://registrar.washington.edu/students/religious-accommodations-request/).

For facts and resources about the COVID-19 pandemic, see the University of Washington's page here: https://www.washington.edu/coronavirus/

For resources and points of contact to promote a safer UW community, see https://www.washington.edu/safecampus/

ASSIGNMENTS AND ASSESSMENT (GRADING)

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Eight reading quizzes</td>
<td>24% (3% x 8)</td>
</tr>
<tr>
<td>Eight participation reports based on quiz section exercises</td>
<td>8% (1% x 8)</td>
</tr>
<tr>
<td>Four problem sets (drop the lowest)</td>
<td>20% (5% x 4)</td>
</tr>
<tr>
<td>Four non-cumulative mini exams</td>
<td>48% (12% x 4)</td>
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</tbody>
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Assignments

- Reading quizzes (n=8; QZ1 through QZ8): To encouraging you to engage with your textbook, reading quizzes will be open-book, covering approximately 4-5 chapters of your textbook (two quizzes per "Part" in your textbook). These will be administered online through the course website. Do not collaborate with your peers while you complete these assignments. Quizzes will be completed online on the course website, under the "Quizzes" hyperlink.
- Participation Reports (PR1 through PR8): Participation reports will be low-stakes assignments, encouraging you attend your quiz sections or to watch them once recordings have become available. Starting Week 2, there are 19 quiz sections. For eight of these, you will need to provide brief synopses of the exercises and discussions you had during
the section. These will be assigned and submitted online on the course website, under the "Assignments" hyperlink.

- **Problem sets (n=4; PS1 through PS4):** These are medium-stakes assignments and will be based on practice problems throughout the textbook. These are intended as practice opportunities leading up to each mini exam (one PS per EX). These will be assigned and submitted online on the course website, under the "Assignments" hyperlink.

- **Mini exams (n=4; EX1 through EX4):** Each mini exam is noncumulative. It will cover one Part of your textbook and will be conducted online. The goal of these exams is to evaluate your mastery of the content we cover in lectures, readings, and quiz sections. Mini exams will be completed online on the course website, under the "Quizzes" hyperlink.

**Percent grade to grade point translation:** The table below identifies the grade points corresponding with every tenth percent grade. Your grades will be posted to the grade book on the course website

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade point</th>
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<tbody>
<tr>
<td>10%</td>
<td>0.0</td>
</tr>
<tr>
<td>20%</td>
<td>0.8</td>
</tr>
<tr>
<td>30%</td>
<td>1.2</td>
</tr>
<tr>
<td>40%</td>
<td>1.6</td>
</tr>
<tr>
<td>50%</td>
<td>2.0</td>
</tr>
<tr>
<td>60%</td>
<td>2.4</td>
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<td>70%</td>
<td>2.8</td>
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<tr>
<td>80%</td>
<td>3.2</td>
</tr>
<tr>
<td>90%</td>
<td>3.6</td>
</tr>
<tr>
<td>&gt;98%</td>
<td>4.0</td>
</tr>
</tbody>
</table>

**EMAIL POLICY**

When you contact any member of the teaching team by email, please present yourself in a professional manner. Be sure to do the following:

- Address your instructor or TA by their preferred names and titles.
- Include a subject with "STAT 220" somewhere in the title.
- Write in complete sentences, clearly identifying the questions or topics for which you wish a response from us.
- If your question cannot be easily answered in a short email, consider meeting us during our office hours instead or requesting a one-on-one appointment.
- Don't forget to sign off with your name as you would prefer to be addressed.
- Be sure to acknowledge our response if appropriate, for example by responding to any follow-up questions we may have for you.
- Please allow up to 48 hours for a response.
• If you disagree with the interpretation of any scored assignment, please submit a request for a re-evaluation to your instructor (Will Brown) via email. You must submit this request within one week of receiving the grade and include a written explanation of your case. Note that not all re-evaluations will result in a changed grade, but I will respond to your request in either case.

COURSE SCHEDULE

Week 1

• Wed 30 Sep: Overview of the course syllabus, structure, and expectations
• Thurs 1 Oct: No quiz sections
• Fri 2 Oct: Chapter 1 (10th Ed.: pp. 3-15; 9th Ed.: pp. 3-15)

Week 2

• Mon 5 Oct: Chapter 2 (10th Ed.: pp. 21-30; 9th Ed.: pp. 21-32)
• Tues 6 Oct: TA introductions; Exercise on research questions, hypotheses, and design
• Thurs 8 Oct: TBD
• Fri 9 Oct: Chapter 4 (10th Ed.: pp. 59-77; 9th Ed.: pp. 63-82) [Reading Quiz 1 due: covers Cha. 1-5]

Week 3

• Mon 12 Oct: Chapter 5 (10th Ed.: pp. 87-100; 9th Ed.: pp. 93-107)
• Tues 13 Oct: TBD
• Thurs 15 Oct: TBD
• Fri 16 Oct: Chapter 7 [Reading Quiz 2 due: covers Cha. 6-9]

Week 4

• Mon 19 Oct: Chapter 8
• Tues 20 Oct: TBD
• Wed 21 Oct: Chapter 9
• Thurs 22 Oct: TBD
• Fri 23 Oct: Review for Mini Exam 1 [Problem Set 1 due Sunday 25 October by 11:59 pm]

Week 5

• Mon 26 Oct: Mini Exam 1
• Tues 27 Oct: TBD
• Wed 28 Oct: Chapter 10
• Thurs 29 Oct: TBD
• Fri 30 Oct: Chapter 11

Week 6

• Mon 2 Nov: Chapter 12
• Tues 3 Nov: TBD
• Wed 4 Nov: Chapter 13 [REVISED DUE DATE: Reading Quiz 3 due: covers Cha. 10-13]
• Thurs 5 Nov: TBD
• Fri 6 Nov: Chapter 14

Week 7

• Mon 9 Nov: Chapter 15
• Tues 10 Nov: TBD
• Wed 11 Nov: No Class (Veterans Day)
• Thurs 12 Nov: TBD
• Fri 13 Nov: Chapter 16 [REVISED DUE DATE: Reading Quiz 4 due: covers Cha. 14-16]

Week 8

• Mon 16 Nov: Review for Mini Exam 2 [Problem Set 2 due]
• Tues 17 Nov: TBD
• Wed 18 Nov: Mini Exam 2
• Thurs 19 Nov: TBD
• Fri 20 Nov: Chapter 17 [Reading Quiz 5 due: covers Cha. 17-18]

Week 9

• Mon 23 Nov: Chapter 18
• Tues 24 Nov: TBD
• Wed 25 Nov: Chapter 19 [Reading Quiz 6 due: covers Cha. 19-20]
• Thurs 26 Nov: No quiz section (Thanksgiving Holiday)
• Fri 27 Nov: No Class (Thanksgiving Holiday)

Week 10

• Mon 30 Nov: Chapter 20 [Problem Set 3 due]
• Tues 1 Dec: Review for Mini Exam 3
• Wed 2 Dec: Mini Exam 3
• Thurs 3 Dec: TBD
• Fri 4 Dec: Chapter 21 [Reading Quiz 7 due: covers Cha. 21-22]
Week 11

- Mon 7 Dec: Chapter 22
- Tues 8 Dec: TBD
- Wed 9 Dec: Chapter 23 [Reading Quiz 8 due: covers Cha. 23-24]
- Thurs 10 Dec: TBD
- Fri 11 Dec: Chapter 24 [Problem Set 4 due]

Finals Week

- Tues 15 Dec: Mini Exam 4