MEETING DAYS, TIMES, AND LOCATIONS

Autumn quarter: Wednesday 30 September - Friday 18 December 2020

Lectures

- CSSS/SOC/STAT 221A: Monday, Wednesday, and Friday 11:30 am-12:20 pm

Quiz sections

- AA: Tuesday and Thursday 8:30-9:20 am (Anne)
- AB: Tuesday and Thursday 9:30-10:20 am (Anne)
- AC: Tuesday and Thursday 8:30-9:20 am (Gani)
- AD: Tuesday and Thursday 9:30-10:20 am (Gani)
- AE: Tuesday and Thursday 8:30-9:20 am (Jillian -&gt; Trinity)
- AF: Tuesday and Thursday 9:30-10:20 am (Mark)
- AG: Tuesday and Thursday 8:30-9:20 am (Mark)
- AH: Tuesday and Thursday 9:30-10:20 am (Jillian)

University holidays (no classes, quiz sections, or office hours)

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

Location

All lectures and quiz sections will meet online via Zoom at the links below. You should also be able to access this through the "Zoom" hyperlinks on the left side of 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.

Lecture:
https://washington.zoom.us/j/97684096134?pwd=SHdMZk5LS1hCTXQyZXJuQ3ZmbDJGZz09
(password: Graunt221)

AA: https://washington.zoom.us/j/93405014524

AB: https://washington.zoom.us/j/94114071316
AC: https://washington.zoom.us/j/95356087204

AD: https://washington.zoom.us/j/99675275020

AE (new): https://washington.zoom.us/j/95814321260

AF: https://washington.zoom.us/j/97674416858?pwd=NkQzQWIUN3V0d3BFRIQRIODhjUEFxQT09

AG: https://washington.zoom.us/j/95353555714?pwd=WmU5SThiRVZZdElmNWl6CtIYWNWUT09

AH: https://washington.zoom.us/j/91523798019

TEACHING TEAM

Instructor: William A. Brown, PhD (preferred name: Will, or Dr. Brown, or Prof. Brown; pronouns: he/him/his)

- Contact: brownw@uw.edu
- Office hours: Monday & Friday 12:30-1:30 (Password: Graunt221)

TA: Annelise Wagner (preferred name: Anne; pronouns: she/her/hers)

- Contact: amwag@uw.edu
- Office hours: Monday 1:30-3:30
- OH link: https://washington.zoom.us/j/92059522119

TA: Gani Nurmukhametov (preferred name: Gani; pronouns: he/him/his).

- Contact: gnurm@uw.edu
- Office hours: Thursdays, 10:30 am - 12:30 pm.
- OH link: https://washington.zoom.us/j/97116470609

TA: Jillian Fisher (preferred name: Jillian; pronouns: she/her/hers)

- Contact: jrfish@uw.edu
- Office hours: Tuesdays, 10:30am - 12:30pm
- OH link: https://washington.zoom.us/j/98439292286

TA: Mark Igra (preferred name: Mark; pronouns: he/him/his).

- Contact: igra@uw.edu
- Office hours: MW 12:30-1:30
• OH link: https://washington.zoom.us/j/94614549781?pwd=emNHNXdhcWxnSWFpOEhRckhnZG1FUT09

TA: Trinity Shuxian Fan (preferred name: Trinity; pronouns: she/her/hers).

• Contact: fansx@uw.edu
• Office hours: Thursdays 2:00 pm-4:00 pm
• OH link: https://washington.zoom.us/j/97871579541

COURSE OVERVIEW

Course description

The goal of this course is to develop statistical literacy, especially about statistical methods used by social scientists. As a discipline, statistics focuses on describing and modeling variability in our world. It includes a wide assortment of theories and methods for summarizing variability in all kinds of data, as well as exploring relationships that exist between variables, for example:

• crime rates by neighborhood, city, or state;
• incidence and prevalence of different diseases between different communities;
• age at first consumption of alcohol;
• life expectancy and fertility rates by county, state, or country;
• differences in the age, sex, gender, and ethnic composition of different communities or populations;
• variability in unemployment rates over time;
• number of motorists on the roadway at different hours of the day;
• birth rates by date and day of the week;
• differences in educational outcomes based on access to different resources, class size, or attendance at different schools;
• different carbon emission levels by country relative to population size or GDP;
• etc.

As voters and members of various communities, organizations, and institutions, we make decisions with important consequences based on our understanding of information like these, so it is important that we understand the assumptions, objectives, and results of the statistical methods social science researchers use to collect and thoughtfully explore such data. It is also important to understand the pitfalls that arise when these methods have been applied incorrectly. This course will prepare you to be a more critical consumer of the statistical analyses that you might encounter in popular media as well as in professional and academic publications.

Course objectives

By the end of this course, you should be able to
• Distinguish between nominal, ordinal, and numerical variables;
• Distinguish between sample statistics and population parameters;
• Identify the strengths and limitations of different strategies that researchers use to collect data, as well as how these relate to research questions and goals;
• Evaluate the ability of different statistics to summarize different kinds of data, both numerically and graphically;
• Use the rules of probability theory to explore relationships between variables in different ways;
• Identify parametric probability distributions that we can use to model different kinds of random processes;
• Use different sampling distributions to calculate confidence intervals and perform statistical hypothesis tests about unknown population parameters based on different kinds of data;
• Understand the results of regression analyses exploring relationships between numerical variables.

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/

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/), 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/](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/](https://www.washington.edu/coronavirus/)

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

**REQUIRED MATERIALS**


*Note: be sure to read the chapter assigned for every week before that week has begun.*

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.")

**ASSIGNMENTS AND ASSESSMENT (GRADING)**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nine reading quizzes</td>
<td>9% (1% x 9)</td>
</tr>
<tr>
<td>Eight participation reports (drop the lowest)</td>
<td>14% (2% x 7)</td>
</tr>
<tr>
<td>Eight problem sets (drop the lowest)</td>
<td>35% (5% x 7)</td>
</tr>
<tr>
<td>Three non-cumulative exams</td>
<td>42% (14% x 3)</td>
</tr>
</tbody>
</table>

*Reading quizzes (QZ1 through QZ9):* The reading quizzes are intended to motivate students to keep up on assigned reading, as well as to evaluate your comprehension of the material presented in the textbook. Students are responsible for reading one chapter of the textbook per week. Each quiz is worth 1% of the overall course grade, for 9% total. Most quizzes will be 5 questions long, completed online. All quizzes will be open-book, but do not collaborate with any of your classmates to complete them.

*Participation reports (PRI through PR8):* The participation reports will summarize eight quiz section discussion exercises. These will consist of brief, relatively low-stakes summaries of these exercises, focusing on the take-home points of each exercise.
Problem sets (PS1 through PS8): There will be eight problem sets throughout the quarter. These are intended to give you an opportunity to practice the statistical concepts and methods you learn about in your reading, lectures, and quiz sections. The problems sets will be assigned and submitted electronically. Some of these assignments will involve doing simple calculations, so you are encouraged to show your work, e.g. as scanned pdf documents or high-quality photographs. The first assignment will be participation in an anonymous online survey, to generate data that we can use throughout the quarter.

Exams (EX1 through EX3): Three non-cumulative exams will be given throughout the quarter. These are high-stakes assessments, intended to evaluate your acquisition of knowledge about statistical concepts and methods covered in lecture, readings, and quiz section exercises.

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>
</tr>
</thead>
<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>
</tr>
<tr>
<td>70%</td>
<td>2.8</td>
</tr>
<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 "CSSS 221", "SOC 221", or "STAT 221" 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 [Under Development]

Week 1

• Wednesday 30 Sept: Introductions, syllabus day
• Thursday 1 Oct: Introductions, a big-picture overview of statistics
• Friday 2 Oct: Chapter 1

Week 2

• Monday 5 Oct: Chapter 1 [Reading Quiz 1 due]
• Tuesday 6 Oct: "WEIRD" samples and overgeneralization in social science research [Reading]
• Wednesday 7 Oct: Chapter 1 [Problem Set 1 due: anonymous survey]
• Thursday 8 Oct: Inconvenient samples and clever work-arounds in social science research [Reading]
• Friday 9 Oct: Chapter 1 Reading Quiz 2 due]

Week 3

• Monday 12 Oct: Chapter 1
• Tuesday 13 Oct: The research cycle [Research design: doc, pdf]
• Wednesday 14 Oct: Chapter 2
• Thursday 15 Oct: Cleaning and summarizing data [doc, pdf]
• Friday 16 Oct: Chapter 2 [Reading Quiz 3 due; Problem Set 2 due: summary statistics]

Week 4

• Monday 19 Oct: Chapter 2
• Tuesday 20 Oct: Research ethics [doc, pdf]
• Wednesday 21 Oct: Chapter 2
• Thursday 22 Oct: Exam Review
• Friday 23 Oct: Exam 1

Week 5

• Monday 26 Oct: Chapter 3 [Reading Quiz 4 due]
Tuesday 27 Oct: Probability experiments with (virtual) dice
Wednesday 28 Oct: Chapter 3
Thursday 29 Oct: Telling stories with conditional probabilities
Friday 30 Oct: Chapter 3

Week 6

Monday 2 Nov: Chapter 3 [Reading Quiz 5 due]
Tuesday 3 Nov: Review of PS3 [Problem Set 3 due: probability rules in clinical diagnosis]
Wednesday 4 Nov: Chapter 3
Thursday 5 Nov: TBD
Friday 6 Nov: Chapter 3

Week 7

Monday 9 Nov: Chapter 4
Tuesday 10 Nov: Poisson distribution exercise
Wednesday 11 Nov: No Class (Veterans Day)
Thursday 12 Nov: Sampling distribution exercise
Friday 13 Nov: Chapter 4 (and 5?)

Week 8

Monday 16 Nov: Chapter 4 (and 5?)
Tuesday 17 Nov: Exam Review [Problem Set 4 due: The Gumbel model for lowest temperature data]
Wednesday 18 Nov: Exam 2
Thursday 19 Nov: no quiz section
Friday 20 Nov: Chapter 5 [Reading Quiz 6 due]

Week 9

Monday 23 Nov: Chapter 5 [Problem Set 5 due: statistical inferences for lowest temperature data]
Tuesday 24 Nov: Confidence intervals for proportions
Wednesday 25 Nov: Chapter 6 [Reading Quiz 7 due]
Thursday 26 Nov: No Class (Thanksgiving Holiday)
Friday 27 Nov: No Class (Thanksgiving Holiday)

Week 10

Monday 30 Nov: Chapter 6 [Reading Quiz 8 due] [Problem Set 6 due: Titanic survivorship data by passenger class]
Tuesday 1 Dec: Chi-squared tests for multilevel categorical variables
Wednesday 2 Dec: Chapter 7
• Thursday 3 Dec: TBD
• Friday 4 Dec: Chapter 7 [Problem Set 7 due: TBD]

Week 11

• Monday 7 Dec: Chapter 8 [Reading Quiz 9 due]
• Tuesday 8 Dec: TBD
• Wednesday 9 Dec: Chapter 8 [Problem Set 8 due: understanding historical fertility and mortality rates through regression]
• Thursday 10 Dec: Exam Review
• Friday 11 Dec: Chapter 9

Finals Week

• Wednesday 16 Dec: Exam 3