

SYLLABUS | Math 400: Statistics for the Secondary Teacher

01 COURSE WELCOME

Welcome to **MATH 400: Statistics for the Secondary Teacher**. This course is designed for students intending to teach high school mathematics. The primary goal of this course is to improve, broaden, and deepen your proficiency in and appreciation for statistics to confidently teach grades 7-14 mathematics and hopefully, with enjoyment. The choice of topics are motivated by central ideas of high school standards and by state and national teaching/learning recommendations, including study design, exploratory data analysis, inference, and association. Our aim is that you gain a deep understanding of core topics and ability to think statistically so that you may become an effective teacher of statistics.

01a CATALOG DESCRIPTION

Structure and form of the statistics that constitutes the core of the 7-14 mathematics curriculum, including: study design and exploratory data analysis; inference (confidence intervals and hypothesis tests); and association (linear regression, two-way categorical tables, and chi-squared analysis).

01b COURSE PREREQUISITES

Prerequisite: MATH 335 and MATH 338; or graduate standing.

01c COURSE FORMAT

The course is designed to instruct students face-to-face in person.

02 COURSE LEARNING OBJECTIVES

On successful completion of MATH 400, you will:

1. **Learning Objective 1 (Study Design/EDA):** Design of statistical studies and analysis should consider the effects of variability and of variables not controlled by the study. Making sense of data through visualizations and statistical analysis can give insights into the data's story.
2. **Learning Objective 2 (Inference):** Inferential statistics enables us to infer, though with uncertainty, beyond the data we have to a broader set of individuals or circumstances.
3. **Learning Objective 3 (Association):** Association means that information about one variable changes our idea about what happened with the other variable, but does not necessarily establish a causation relationship.

Undergraduate Student Learning Goals can be viewed by visiting <https://www.fullerton.edu/data/assessment/learninggoals.php>

You will also participate in activities aimed to reach the [National Council of Teachers of Mathematics](#) (NCTM) goals for students and the [Common Core State Standards in Mathematics](#). While we will use various manipulatives and the material is presented in a way that suggests effective approaches to teaching children, it is important for you to keep in mind that this course is an upper-division level mathematics course, not a teaching methods course.

03 INSTRUCTOR INFORMATION

Course Information		Office Hours and Contact	
Instructor:	Dr. Bridget Kinsella Druken Associate Professor Pronouns: She/Her/Hers	Office	MH 389C (Between 380 & 390)
Semester	Spring 2024	Email/Phone	bdruken@fullerton.edu (657) 278-2547
Course Time Location	Math 400 MW 4-5:15p PT Room MH XXX	Office Hours	TBD

03a LAND ACKNOWLEDGEMENT

My students and I acknowledge that we are guests learning, teaching, and gathering on the traditional territory and homelands of the Kizh Peoples. Today, the meeting place of CSUF and its surrounding areas of Riverside and San Bernardino counties are home to the federally recognized bands of Cabazon Band of Mission Indians, Morongo Band of Mission Indians, Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, Ramona Band of Cahuilla, San Manuel Band of Mission Indians, Santa Rosa Band of Cahuilla Indians, Soboba Band of Luiseno Indians, Twenty-Nine Palms Band of Mission Indians of California. We thank them for our continued use of the natural resources on their ancestral homelands. We seek to be curious about and inquire into past and current histories of Indigenous Peoples connected to this beautiful area.

03b DIVERSITY STATEMENT

It is my goal that students from all diverse backgrounds and perspectives be present, valued, and well served by this mathematics course. Students' learning needs form an important foundation for building mathematical thinking, in and out of class. Learning needs will be asked for in the Student Survey assignment at the start of the semester. The diversity of mathematical solutions expected by your instructor and provided by our classroom community is viewed as a resource, strength, and benefit to CSUF students, their future K-12 students, and instructors. I intend to provide productive learning experiences that respect peoples' multiple identities, including but not limited to gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

You can expect that frequent student feedback will be solicited, encouraged, and appreciated. Please let me know ways to improve course effectiveness for you personally or for other students or student groups. If you experience disrespect or discrimination in this class, please report your experiences to me. Anything shared with me privately will be confidential.

03c ACCESSIBILITY STATEMENT

Cal State Fullerton is committed to being a fully accessible campus. We strive to provide a safe and barrier-free learning environment for everyone, including those with any kind of disability, whether apparent or non-apparent, learning, emotional, physical, or cognitive. This commitment includes our facilities, technology, and instructional materials. If you find yourself

unable to fully access the space, content, and/or experience of any course or activity, please contact Disability Support Services (DSS). A DSS counselor can help document your needs and create an accommodation plan, ensuring your privacy without disclosing your condition or diagnosis to your instructors (though you may voluntarily disclose, if you wish).

04 COURSE ORGANIZATION & COMMUNICATION

The course is organized using modules in the Canvas Learning Management System (LMS). All important information can be found on Canvas. Students can expect to interact weekly with classmates and your instructor. You can expect to receive at least one email each week -- one Overview email (generally on Sundays/Mondays) to communicate the upcoming week's assignments and one Summary email (generally on Fridays) to communicate what we did that week (both provide friendly reminders on due dates). Questions, comments, concerns, and celebrations can be posted on our Canvas Question Café or sent directly to me via the Canvas inbox messaging feature so I know which course your question is originating from. You may also email bdruken@fullerton.edu so long as you type your course name and section number in the subject line. This ensures appropriate sorting in my inbox and a timely response. Thank you in advance for labeling your emails!

04a RESPONSE TIME

You may expect feedback and responses to completed assignments from your instructors within 48 business day hours. You may expect responses to emails on Monday, Wednesday, and Fridays within 48 business day hours (typically not Tuesdays and Thursdays as I will often be teaching). If you haven't heard from me in that time, please contact me again.

04b COURSE TEXT

This course uses a free set of guided notes that will be provided by the instructor. Students will be required to download or print out notes depending on their preferred method.

04c ADDITIONAL COURSE RESOURCES

- *Advanced High School Statistics* by Diez, Cetinkaya-Rundel, Dorazio, and Barr, freely available as a PDF here <https://www.openintro.org/book/ahss/>
- *Guidelines for Assessment and Instruction in Statistics Education* (GAISE II) Reports, both K-12 Report and College Report, a free PDF available here <https://www.amstat.org/education/guidelines-for-assessment-and-i-reports>
- The Statistics Teacher, a free journal available at <https://www.statisticteacher.org>

05 COURSE EVALUATION

Grades will be out of 1,000 points: homework assignments (30%), quizzes (20%), two midterm exams (30%), and one cumulative final exam or project (20%). Points for each type of evaluation are:

HW	Quizzes	Exams	Final	Total
300	200	300	200	1,000

After rounding to the nearest whole number, letter grades will be assigned as follows:

Letter Grade	Percentage	Letter Grade	Percentage	Letter Grade	Percentage	Letter Grade	Percentage
A+	97-100%	B+	87-89%	C+	77-19%	F	< 60%
A	93-96%	B	83-86%	C	70-16%		
A-	90-92%	B-	80-82%	D	60-69%		

- **Homework (weekly)** You will complete weekly homework assignments. All assignments require you to reflect more deeply on classwork and your own mathematical experiences. Homework assignments will be submitted both in-person and through Canvas and due when stated on Canvas. Homeworks are typically due on MONDAYS of each week. The lowest one (1) assignment grade is dropped.
- **Quizzes (weekly)** You will complete 12 quizzes administered either online via Canvas or in person, as indicated on the calendar. Quizzes assess your progress with reaching the course and module learning objectives. All quizzes will be taken online or in class, submitted through Canvas/in person, and due when stated on Canvas. Quizzes are typically administered in class on WEDNESDAYS of each week. The lowest one (1) quiz grade will be dropped.
- **Midterm Exams (2) & Final (1)** You will complete one (1) midterm exam at the end of Week 5, one (1) midterm exam at the end of Week 10, and one (1) comprehensive final exam or project during Week 16, which is finals week. Questions will stem from classwork activities, assignments, and quizzes. Questions consist of multiple choice and short answers with explanations required. Exams must be taken by the stated due date. Makeup exams will only be allowed with a university-excused absence. Exams are typically administered in class on WEDNESDAYS of each week.
- **Graduate Students Only:** Graduate students taking this undergraduate course for credit in their graduate program are required to complete an additional 50-point assignment – writing and presenting a 6 page paper that exposes ideas behind one to two statistics articles on the teaching and learning of grades 7-14 statistics.
 - **Locate** an article on the teaching of statistics. Each graduate student must each select a unique article (no overlap with another graduate student). Search the free online journal called The Statistics Teacher (<https://www.statisticsteacher.org>) to get started.
 - **Summarize** the article in your own words. The summary should provide sufficient details so that the reader does not have to read the article, and span two to three double-spaced, typed pages. Include a complete journal citation—title, author(s), journal, volume, month or season and year, and inclusive pages.
 - **Give** your reaction, critique, and opinion of the article, indicating where you stand on the methods or issues discussed in the article. That is, do you agree with the author(s)? Why or why not?
 - **Discuss** the following question. How does the article relate to the issues and methods discussed in class? I suggest you include headings in the assignment as a way to check that you covered all points.
 - **Present** your summaries to the rest of the class and provide a one-page summarizing handout for everyone in the class. Include relevant highlights, take-aways, diagrams, and examples.

The selected math ed article should be longer than 6 pages in length and must be approved by the instructor prior to your presentation. Newspaper articles are not

acceptable. Grading is based on how well you summarize and present the article as well as the overall quality of the writing. Submit a copy of your written paper and attach a copy of your chosen article. Presentations will occur each week throughout the semester. See Canvas to select presentation date.

05a GRADING POLICY

Grades will be determined by both timely completion of course activities and quality of responses. Each assignment will typically be graded using a rubric posted on Canvas (click on three dots in top-right corner to access rubric before submitting assignment). An automatic grace period of 10 hours past the due date stated on Canvas will be used on all classwork, assignments, and assessments to account for technical glitches. To use the grace period, simply submit your assignment as soon as you can (you do not need to email as long as it is within 10 hours from the stated due date) and I will grade items in order I receive them. Work turned in beyond the grace period will only be accepted with a university-approved absence or prior approval with the instructor. If this is the case, it is your responsibility to notify me as soon as you know you will be unable to complete it. If you miss class on the day the work is due, be sure to submit your assignment on Canvas before the start of class.

05b ASSIGNMENT DESCRIPTIONS

See Canvas for a list of assignment descriptions, including classwork, assignments, quizzes, midterms, and final exam. There will be three learning modules, each module five weeks long. Typically, all work is due on the same day each week. See Canvas for descriptions.

05c EXPECTATIONS

In your past mathematics courses, the emphasis has likely been on *how-to-do*. Math 400 places a greater emphasis on the *why* than the *how* of foundational statistical ideas. We will focus on using the statistical problem-solving process to make sense of issues in the world that involve data, including study design/exploratory data analysis, inference, and association concepts. As a prospective teacher, you should be able to explain why your method of solution makes sense, in addition to performing computations and solving problems. Hence, this course requires that you communicate thorough explanations along with correct numerical answers.

As an upper-division mathematics course and a course designed for future teachers, it is imperative that students understand the material beyond a high school level. As such, working with others will increase your knowledge of the content and your preparation for teaching. It is recommended that you spend between 10 and 12 hours per week for both individual and group assignments for this class. It is usually helpful to get together with peers for at least one study session per week to review homework problems and give practice questions to one another. Remember, many good mathematics problems are not solved on the first attempt and some are even unsolvable. Similar to how a good essay takes many rough drafts before its final form, so does a good mathematical explanation. Thus, you should expect to revise and update problem solutions continuously.

Important: As the content for this course is 7-12 statistics, it will be assumed that you took Math 335 and 338. Class time will rarely resemble a lecture-style mathematics class with the instructor delivering material and the students sitting passively. Instead, we will spend class

time actively building our conceptual understanding of the material, predicting multiple solutions, assessing others' work, etc. To summarize, you should arrive to class with at least a procedural understanding of the material, as class time will be spent building your conceptual understanding so that you will be able to effectively communicate mathematical ideas and learning opportunities to your future students.

05d ATTENDANCE

The spirit of this course is one of involvement and active participation rather than observation and passivity. Consequently, it is important that you attend each class session. Although attendance is not directly factored into your grade, attendance will be taken every day. Being absent from class can negatively affect your grade in the course as we will typically have a quiz and/or mathematics activity in-class each day.

If you miss class, please be sure to keep up with all classwork, assignments, and quizzes. It may still be possible to submit the activities without being in class. Please view this class as the beginning of your professional work. You are an integral part of the team.

06 TECHNICAL REQUIREMENTS

Students are expected to

1. Have **basic computer competency** which includes:
 - a. the ability to use a personal computer to locate, create, move, copy, delete, name, rename, and save files and folders on hard drives and cloud such as Google Drive (Titan Apps) and Dropbox;
 - b. the ability to use a word processing program (e.g. Word or Google Docs) to create, edit, format, store, retrieve, and print documents;
 - c. the ability to use their CSUF email accounts to receive, create, edit, print, save, and send an e-mail message with and without an attached file; and
 - d. the ability to use an Internet browser such as Chrome, Safari, Firefox, or Internet Explorer to search and access web sites.
2. Have **ongoing reliable access to a computer with internet** for regular course assignments
3. **Maintain and access their CSUF student email account** three times a week
4. **Use Internet search and retrieval skills** to complete assignment
5. **Apply his/her educational technology skills** to complete expected competencies
6. **Utilize other software applications** as course requirements dictate
7. **Utilize Canvas, Zoom, and Google slides** to access course materials, learn content, communicate, and complete assignments;
 - a. See [Canvas Support Resources for Students](#) for more about **Canvas**.
 - b. See [Getting Started with Zoom](#) for more about **Zoom**.
 - c. See [Get Started with Slides](#) for more about **Google Slides**.

06a TECHNICAL SUPPORT

The university provides many tools for student technical support. The following lists some resources for students:

- [Student Technology Services](#)
- [IT Help Desk](#) (657) 278-8888 or StudentITHelpDesk@fullerton.edu

- [Student Canvas Guide](#) & [CSUF Canvas Support Resources for Students](#)

07 ACADEMIC SUPPORT SERVICES

The university provides many opportunities for students to access support services. The following lists some resources for students:

- [Supplemental Instruction](#)
- [Student Support Services](#)
- [College of NSM Student Success Center](#)
- [Library Support](#)
- [Learning and Tutoring Centers](#)

08 IMPORTANT UNIVERSITY INFORMATION & STUDENT POLICY WEBSITE

You may access the most recent information on university information and student policies by visiting <http://fdc.fullerton.edu/teaching/syllabus.php>. These include:

- [Undergraduate, General Education, and Graduate Student Learning Goals](#)
- Student Learning Outcomes by Degree Programs: Mathematics
http://www.fullerton.edu/data/assessment/assessment_at_csuf/program_slos/nsm_ba_math.php
- Students' Rights to Accommodation
https://www.fullerton.edu/dss/faculty_staff/rights.php
 - Campus Student Support Resources, including
 - [Counseling and Psychological Services](#)
 - [Title IX and Gender Equity](#)
 - [Diversity Initiatives and Resource Centers](#)
 - [Basic Needs Services](#)
- Academic Integrity Policy <http://www.fullerton.edu/canvassupportresources/academic/>
- Emergency Preparedness <https://adminfin.fullerton.edu/emergency/>
- Library Services <http://www.library.fullerton.edu/>
- Student IT Services and Competencies <https://www.fullerton.edu/it/students/>
- Software Privacy and Accessibility
https://oet.fullerton.edu/resources/software_qm_guides.php
- Accessibility Statement
- Diversity Statement <https://hr.fullerton.edu/diep/>
- Land Acknowledgement <http://together.fullerton.edu/land-acknowledgement/>
- Final Exams Schedule https://www.fullerton.edu/scheduling/final_exam_schedule/
- Term Calendar <https://apps.fullerton.edu/AcademicCalendar/>

08a STUDENTS' RIGHTS TO ACCOMMODATION

Please inform the instructor during the first week of classes about any disability or special needs that you may have that may require specific arrangements related to attending class sessions, carrying out class assignments, or writing papers or examinations. According to California State University policy, students with disabilities must document their disabilities at the Disability Support Services (DSS) Office in order to be accommodated in their courses.

Additional information can be found at the [DSS website](#), by calling 657-278-3112 or email dsservices@fullerton.edu.

If you are a course match student and require ADA accommodations for access to this course and are registered with Disability Services at your home campus, please contact the Disability Support Services office at CSU, Fullerton by emailing dsservices@fullerton.edu or by calling (657) 278-3112 for assistance.

08b ACADEMIC DISHONESTY POLICY

Academic dishonesty includes cheating, inventing false information or citations, plagiarism, and helping someone else commit an act of academic dishonesty. It usually involves an attempt by students to show a possession of a level of knowledge or skill, which they in fact do not possess. Cheating is defined as the act of obtaining or attempting to obtain credit for work by the use of any dishonest, deceptive, fraudulent, or unauthorized means. Plagiarism is defined as the act of taking the work of another and offering it as one's own without giving credit to that source. Instructors who believe that an act of academic dishonesty has occurred (1) are obligated to discuss the matter with the student(s) involved; (2) should possess reasonable evidence such as documents or personal observation; and (3) may take whatever action (subject to student appeal) they deem appropriate, ranging from an oral reprimand to an F in the course. Additional information on this policy is available from [University Policy Statement 300.021](#).

08c NETIQUETTE

Each student is expected to conduct themselves in a professional manner during the class to take full advantage of the learning opportunities available. Netiquette refers to a set of behaviors appropriate for online activity - especially with email and threaded discussions.

The core rules of netiquette can be found at CSUF's [Netiquette guidelines](#). Please read through these netiquette rules to ensure that you are familiar with what will be the expected online behavior for this course.

08d STATEMENT ON RETENTION OF STUDENT WORK

Student work submitted for this course shall be retained by the University or its academic employees for a reasonable time after the semester is completed.

08e EMERGENCY PREPAREDNESS

Visit the following link for a description of CSUF's Emergency Preparedness Information: <https://police.fullerton.edu/programs/prepare/>. To be able to respond effectively in an emergency, be sure to note

- (a) fire alarm pull station locations,
- (b) evacuation map including the class's outside meeting area,
- (c) emergency procedures for fire, medical emergency, hazardous materials release, earthquake and dangerous situations, and
- (d) location of nearest emergency phone.

Any person with a disability is encouraged to speak with the instructor privately. All campus personnel are required to participate in all campus-wide drills.

If an emergency disrupts normal campus operations or causes the University to close for a prolonged period of time (more than three days), students are expected to complete the course assignments listed on the syllabus as soon as it is reasonably possible to do so.

08f HEALTHY & SAFETY GUIDELINES

CSUF is actively working to maintain the safety of our campus community in response to COVID-19. To stay current with information, please visit CSUF's Titan's Return: COVID Recovery [website](#). Please review the FAQs to help answer any of your questions.

In addition, CSUF requests that students who tests positive for COVID-19 or become aware that they may have been in close contact with someone who either has tested positive for or is suspected to have COVID19 report the positive result or exposure using the CSUF COVID-19 Self-Reporting Form. CSUF's Infectious Diseases Response Team reviews and verifies COVID-19 confirmed cases and responds to concerns from the campus community on COVID-19. [Click here](#) to report COVID-19 cases or exposure.

Prior to arriving on campus and before entering class, you should conduct a [personal health screening](#) and self-monitor for fever, cough, shortness of breath, or other symptoms of respiratory illness. If you are experiencing any of these symptoms, you should stay home and notify me of your absence. I will work with you to address any COVID-19 related impacts to your participation in and completion of this course. Before entering the classroom, you should wash/sanitize your hands and have your face covering on. While in class, you are required to:

- Sit in your designated seat;
- Wear your facial covering that covers both the nose and mouth (e.g., masks or face shields);
- Always cough or sneeze into your elbow or tissue;
- Use the materials provided to clean your desk and chair before and after use, and; Adhere to other health and safety protocols and directives for your specific classroom, lab, studio, and campus.

Students who do not follow these health and safety requirements may be reminded of the need to adhere to those measures. Failure to comply may constitute a violation of campus policy and may result in a referral to the [Office of Student Conduct](#). Thank you for your cooperation and assisting in the University's efforts to keep our community safe.

09 MATHEMATICS DEPARTMENT ADD/DROP DATES SPRING 2024

February 5 (Mon): Last day for students to ADD with a permit. All permits expire at midnight on February 7.

February 5 (Mon): Last day for students to DROP without a grade of "W". Students drop using Titan Online.

February 20 (Tues): Last day the Math Department will be flexible on the approval of non-medical withdrawal requests. Beginning Wednesday, February 23, students must have a serious and compelling reason for non-medical withdrawal requests and must provide supporting documentation for their reason.

April 19 (Fri): Final deadline to submit a withdrawal request from classes with a grade of "W" for a serious and compelling reason. Last day to withdraw with a truly serious and compelling reason that is clearly beyond the student's control. Students must document their reason.

SYLLABUS SUBJECT TO CHANGE

This syllabus and following calendar of topics are subject to change. If you are absent from class, it is your responsibility to learn of announcements made while you were absent.

NAMES & CONTACT INFO OF CLASSMATES

Name	Contact Info	One Interesting Fact about Them

CALENDAR OF TOPICS

See Canvas homepage for a more detailed Course Calendar with descriptions of assignments and their due dates.

Module 1: Study Design/EDA

KEY CONCEPT: Design of statistical studies and analysis should consider the effects of variability and of variables not controlled by the study. Making sense of data through visualizations and statistical analysis can give insights into the data's story.

Dates	Lesson #	Topic	Items Due
Week 1 (1/22)	1: What is Statistics?	Sources of variation; Confounding; Statistical investigation cycle	Student Survey Stats Bios
(1/24)	2: Study Design	Differences between study design types; Avoiding common statistical biases.	Quiz 1
Week 2 (1/22)	3: Equity Conversations & Data Visualizations	Definitions of equity; Avoiding stereotypes; Modern data visualizations used in media	HW 1
(1/31)	4: Multivariate Exploratory Data Analysis with CODAP	Using CODAP; Data visualizations in CODAP; Critical statistical literacy.	Quiz 2
Week 3 (2/5)	5: Teaching Statistics for Social Justice	Developing critical statistical literacy; Interpreting multivariate data visualizations in CODAP; Design of statistical studies	HW2
(2/7)	6: Interpreting Graphs	Frameworks regarding graph comprehension; Graphs for univariate data	Quiz 3
Week 4 (2/12)	7: Interpreting and Responding to Student Thinking	Common student approaches to analyzing univariate data; Professional noticing of students' thinking	HW 3
(2/14)	(continued)		Quiz 4
Week 5 (2/19)	8: Characterizations of Distributions	Conceptual understanding of measures of center and variability; Z-scores; relative effect size measurement;	HW4
(2/21)	(continued)		Exam 1 Mod 1 Guided Notes

Module 2: Inference

KEY CONCEPT: Inferential statistics enables us to infer, though with uncertainty, beyond the data we have to a broader set of individuals or circumstances.

Dates	Lesson Name	Concepts	Due
Week 6 (2/26)	1: Simulation-Based Informal Hypothesis Test: Comparing 2 Groups (means)	Simulation-based hypothesis test for comparing means of two groups	N/A
(2/28)	2: Random Assignment Simulations w/ Technology, Paired Studies, & TN STAR study	Simulation-based hypothesis test for comparing means of two groups; Paired study design	Quiz 5
Week 7 (3/4)	3: Formal Hypothesis Tests	Simulation-based hypothesis test for a mean; Type I and Type II errors; Practical vs. statistical significance; framework for the logic of simulation-based inference	HW 5
(3/6)	(continued)		Quiz 6
Week 8 (3/11)	4: Confidence Intervals	Meaning of confidence intervals; Simulation-based confidence interval for a mean	HW6
(3/13)	5: Teaching with Simulation	Knowledge of students' learning experiences when doing	Quiz 7
Week 9 (3/18)	6: One-sample Hypothesis Test for a Mean (formula-based)	Central Limit Theorem; One sample hypothesis test for a mean; Teacher expectations of students and families related to stereotypes	HW 7
(3/20)	7: Formula-Based Hypothesis Test for a Difference of Means	Formula-based hypothesis test for the difference in means; Common student conceptions when conducting hypothesis tests; Issues with multiple testing	Quiz 8
Week 10 (3/25)	8: Wrap-Up & Projects!	Learning progression for inference in current curriculum standards; Common student interpretations of p -values	HW 8
(3/27)	(continued)		Exam 2 Guided Notes

Module 3: Association

KEY CONCEPT: Association means that information about one variable changes our idea about what happened with the other variable, but does not necessarily establish a causation relationship.

Dates	Lesson Name	Concepts	Due
Week 11 (4/8)	1: Introduction to Quantitative Association	Meaning of statistical association; Scatterplots; Informal line of best fit	N/A
(2/28)	(continued)		Quiz 9
Week 12 (4/15)	2: Informal Fit Methods, and Correlation Coefficient	Conceptualizing linear regression as the search for a signal in noisy data; Correlation coefficient	HW 9
(4/17)	(continued)		Quiz 10
Week 13 (4/22 & 4/24)	3: Formal Trendlines, and Interpreting Slope without Causation	Least-Squares Regression Line; Residual plots; Lurking variables; Interpolation and extrapolation	HW 10
	(continued)		Quiz 11
Week 14 (4/29)	4: Coefficient of Determination, and Nonlinear Modeling (ACTIVITY 6 OPTIONAL)	R ² statistic; Reading software output for regression; Selection of a model for data that follows a non-linear form	HW 11
(5/1)	(continued)		Quiz 12
Week 15 (5/6)	5: Transformations and Inference (OPTIONAL)	Fitting exponential, power, and logarithmic functions through linear transformations; Inference procedures for the slope of the regression line; Prediction Interval	HW 12
(5/8)	(continued)		N/A
Week 16 (5/15) 5-6:50 p.m.	Cumulative exam. Covers Modules 1-3. See Final Exam Schedule for date/time		Final Exam Guided Notes (both due 5/15)