University of the Pacific — HLTH 180

Epidemiology

Spring, 2026   **CRN: 30758**   **Syllabus**

Professor:	Courtney Jensen, Ph.D.
Graduate Assistant:	Addisen Azevedo, B.S.
Class Location:	WPC 224
Class Days:	Mondays, Wednesdays, Fridays
Class Times:	9:30am – 10:45am
Office Hours:	Courtney: Mon/Wed from 10:45am – 12:15pm
	Location: DUC indoor fireside
	Addisen: Mon from 1:00pm – 3:00pm
	Location: GA Office
	Other hours available by zoom

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@ Courtney:
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Course Contents:

1. Purpose and Description of the Course

H L T H 1 8 0 is an introduction to the principles and practice of epidemiology for students majoring in any aspect of health. It explores the history, concepts, and methods of epidemiologic investigation. *History:* This part is a) more important than people think it is,   and b) less boring than people think it is. *Concepts:* A major focus of this course is medical epidemiology. What tools are used to assess and advance medicine and patient care in the 21st century? We'll figure that out. *Methods:* The statistical models taught in this class include bivariate correlation, chi-square test, t-test, several types of regression, and several types of analysis of variance (ANOVA).

Throughout the semester, you'll learn how to collect data, organize it, analyze it, and make sense of those analyses. And you'll learn how to make sense of *other* people's analyses. That may be the most important part: critically evaluating published reports on any subject. To be a thinking person, you have to distrust (or at least doubt) *all* information, scrutinize its methods, and draw your own (appropriate, unbiased) conclusions. We'll get there.

By the end of the semester, you'll have learned to develop research designs that employ the statistical methods described above, and you'll be able to conduct them to evaluate patient care, quantify risk, and understand the patterns of illness and disease in populations.

Prerequisites: There are no prerequisites for this course. *But*: If your transcript has a statistics class on it, you'll have a head start on your peers. A background in stats is helpful.

NOTE: This class is a prerequisite for all epidemiology internships both at national hospitals (focused on emergency medicine, trauma care, or obstetrics), and international government agencies (e.g., Uganda Bureau of Statistics, which requires travel to Kampala, Uganda). This class is also a prerequisite to conduct, present, and publish research with HES faculty. You have to get at least a B+ to be eligible to do any of those things.

2. **Very Useful Materials**
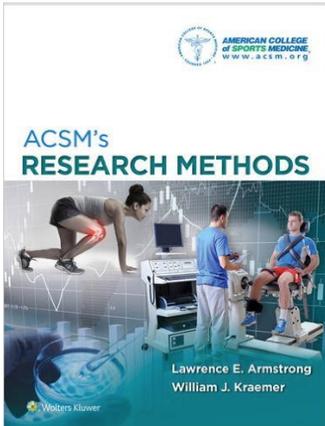
Suggested *(but not required)* ***text:***

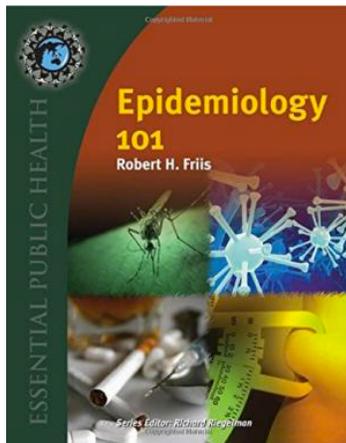Armstrong LE & Kraemer WJ. (2015). *ACSM's Research Methods*. LWW/Wolters Kluwer, United States.

If you're going to get it, just go online, e.g., *Amazon*: https://www.amazon.com/ACSMs-Research-Methods-none-ACSM/dp/145119174X

If you're going to buy it (which I do recommend; it's just not necessary); get it wherever it's cheapest.

Suggested *(but not required)* ***text:***

Frills RH. (2009 or 2017). *Epidemiology 101*. Jones & Bartlett Learning, United States.

If you're going to get it, just go online, e.g., *Amazon:*

https://www.amazon.com/s?k=epidemiology+101&i=stripbooks&ref=nb_sb_noss_2

Same as above. It's not a terrible idea to own a copy. Or steal a classmate's while he or she is peeing in the next room (hopefully the next room is a bathroom). Getting it *somehow* will be helpful. Not critical. Just helpful. All other readings will be available in PDF form on Canvas.

3. canvas and zoom and EpiStatistics.com

Students are required to use the Canvas website (https://pacific.instructure.com/). Lecture materials will be maintained there. And any announcements will be made there. If you're not familiar with Canvas, it's a good idea to do some familiarizing. I don't do anything all that fancy on it, but the posts I do make are important. We may have some Zoom commitments. And all resources you need for the semester are at https://epistatistics.com.

https://pacific.instructure.com/courses/

This is where you go.

4. Tests, Quizzes, and Assignments

Exams: 3 *(100 points each)*   *300 points*   *Individual*
Quizzes: 35 *(quiz points vary; 3-10 points each)*   *200 points*   *Individual*
Poster Presentation Video: 1 *(100 points)*   *90 points*   *Group*
Labs: 4 *(20 points each)*   *80 points*   *Group or Individual*
Take-Home Test: 2 *(10 points each)*   *20 points*   *Individual*
CITI Certification: 1 *(10 points)*   *10 points*   *Individual*

Total for the entire semester: *700 points*

5. Grading Scale and Policy

Final grades are determined by calculating accumulated points from everything and dividing that number by the total points possible (700).

Letter Grade	Points	Percent
A (Yay!)	651+	93%
A-	630–650	90%
B+	609–629	87%
B	581–608	83%
B-	560–580	80%
C+	539–559	77%
C	511–538	73%
C-	490–510	70%
D+	469–489	67%
D	420–468	60%
F (Sorry.)	0–419	<60%

6. Grade Indicator

A, A-   Quality of work indicates full mastery of the subject; a solid A (no minus) signifies extraordinary distinction (and is difficult to accomplish).

B+, B, B-   Work indicates good comprehension of the course material, including understanding of research philosophy, a good command of statistical methods, and the ability to demonstrate those things on assignments, tests, and in presentations.

C+, C, C-   Earned by work that demonstrates satisfactory comprehension of the course material; student has met the basic requirements for completing assigned work and participating in class activities.

D+, D   Work is not fully satisfactory but the student participated enough in the class activities and has enough of a command of research and statistical methods to be (minimally) worthy of course credit toward a degree.

F   Quality of work is not satisfactory and is unworthy of course credit.
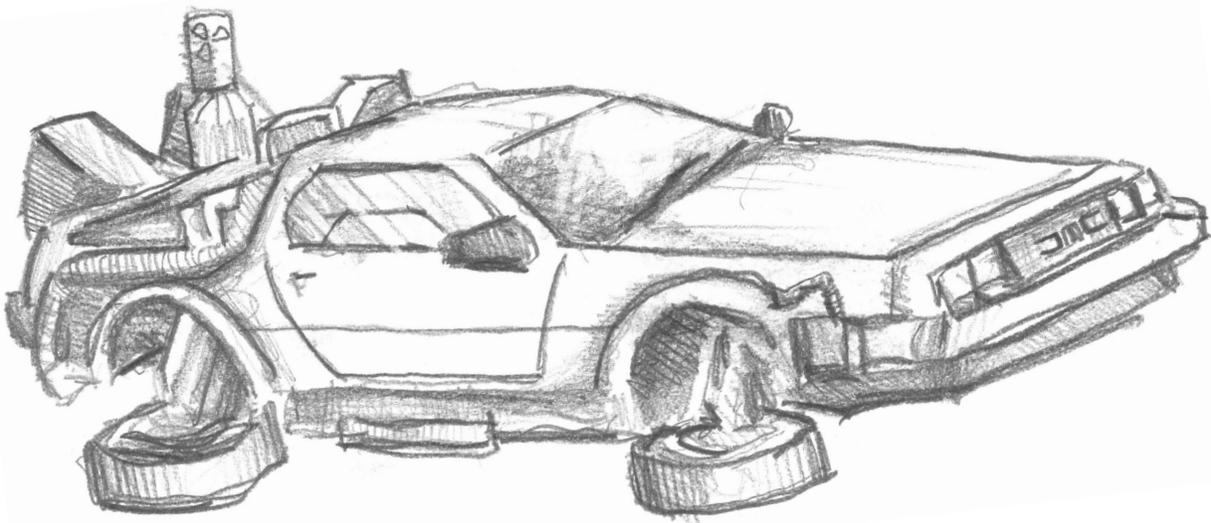

7. End of the Semester Inflation Requests

Student:

"We've reached the end of the semester and I seem to have finished in the B+ zone. Is there anything I can do to bump my grade up to an A- or an A?"

Professor:

"You could invent a time machine, go back a few months, study harder, and get better grades on the exams."

8. Student Responsibilities / Tips on Meeting Expectations

- By attending live lectures and/or watching the recorded ones, you'll be given all of the necessary information to receive a 100% score on every quiz and exam. That doesn't mean the quizzes and exams are easy. It just means you'll have been presented the information for every question. You will not be asked a single question that requires learning beyond the lectures (extra credit aside). Whether you learn that information is up to you.

- The quizzes for each block are due 48 hours before the corresponding exam. But if you wait until the last minute to begin the work, you'll have a difficult time. And that "due date" is not negotiable. There is no situation (not even an alien invasion or AI's destruction of the planet) that will be sufficient for those due dates to be delayed. So don't procrastinate on the quizzes.

- If you become aware of a scheduling conflict (an *important* conflict) that prevents you from attending class on the exam days, please let me know as soon as possible.

- Emergencies. I understand these, and experience them myself. In the case of an emergency, you don't need to contact me in advance. Just attend to your situation and notify me when you can. Then we'll come up with a strategy to make up the exam.

- All students must abide by the University of the Pacific's policy regarding academic honesty (page 14 of Tiger Lore Student Handbook) and the University Honor Code:

  > The Honor Code at the University of the Pacific calls upon each student to exhibit a high degree of maturity, responsibility, and personal integrity. Students are expected to:
  >
  > 1)   Act honestly in all matters
  > 2)   Actively encourage academic integrity
  > 3)   Discourage any form of cheating or dishonesty by others
  > 4)   Inform the instructor and appropriate university administrator if she or he has a reasonable and good faith belief and substantial evidence that a violation of the Academic Honesty Policy has occurred.

Violations will be referred to and investigated by the Office of Student Conduct and Community Standards. If a student is found responsible, it will be documented as part   of his or her permanent academic record. A student may receive a range of penalties, including failure of an assignment, failure of the course, suspension, or dismissal from the University. The Academic Honesty Policy is available at: http://www.pacific.edu/Campus-Life/Safety-and-Conduct/Student-Conduct/Tiger-Lore-Student-Handbook-.html

9. Accommodations for Students with Disabilities

If you are a student with a disability who requires accommodations, please contact the Office of Services for Students with Disabilities (SSD) for information on how to register for services and request accommodations.

1. Student must register for services by completing the intake and registration process and provide supportive documentation found at pacific.edu/disabilities.
2. Student requests accommodation(s) letters each semester online through the SSD Student Portal found at pacific.edu/disabilities.
3. As needed, student arranges to meet with their professor to discuss the accommodation(s).

To ensure timeliness of services, it is preferable that you obtain the accommodation email letter(s) from SSD within the first two weeks of classes starting.

The Office of Services for Students with Disabilities is located in the McCaffrey Center Room 229, 2nd floor
Phone: 209-946-3221
Email: ssd@pacific.edu
Online: www.pacific.edu/disabilities

10. Professor's (i.e., My) Responsibilities

1. Canvas postings: I will maintain a presence on Canvas. Not a particularly sophisticated one, but certainly a routine one. You can find the syllabus, all lecture slideshows, and additional readings there.

2. Office hours: I won't be "in my office", but I'll be in the DeRosa Student Center during the hours stated on the first page. "Is it possible to schedule an appointment with you outside of those hours?" Possible. But I do receive approximately 20 hours / week of requests above what I'm capable of addressing. If I were two people, I could manage every request. But I'm just a person. I'll try. But the workload exceeds what a person can do at times. Sorry ☹

3. Email responses: I will be as punctual as I can be with response times. At the busiest times of the semester, it won't feel that way. But I'll do my best. If you have a lot of questions or your questions would require a lot of typing, I might ask that you attend office hours.

4. Returning and exams and lab reports: You'll get your lab reports back before you submit the next one so you can take advantage of the comments and improve your subsequent performance. Your exams are digital, so you'll get the grade as soon as you finish taking it. When there are extra credit questions, those aren't assigned to your Canvas score. I'll make sure you get those by the next class period.

5. Lecture videos: I will be giving live lectures, but there are also recorded lectures from a previous semester. If you're going to miss class, you can just watch that instead. You will still learn everything you need to for the quizzes and exams. Those lectures are posted at https://epistatistics.com, and the videos are served à la carte. There are no accompanying materials (audio files or transcripts or PowerPoint slideshows). I won't be providing those materials. It's up to you to watch, listen, and learn. Everything you need is in these videos, and you can rewind and re-watch as much as you want.

6. Changes to class schedule: I reserve the right to change the class schedule as required. For example, if a fire is currently consuming Stockton, we'll probably postpone class. I may also have an occasional medical appointment that conflicts with the schedule. I'm not going to risk mortality for class sessions, so that has to be my first priority. And I hope the same is true for you. Priorities. Anyway, whenever changes arise, I will post them on Canvas *and* announce them in class as soon as I have that information.

7. Preferred pronouns: I tend to call people by their names. Excepting words like "they" and "somebody" (and those that involve me, e.g., I and mine), I'm not very pronouny in my speech. But if you have a pronoun that would not be obvious to me (or feel like sharing your obvious pronouns), please, please do so. Let me know at any time and I will, of course, respect and honor it. I may not have time to discuss exam grades in detail or respond to administrative questions (or whatever), but being polite and fostering an inclusive learning environment that feels safe and dignified doesn't take time. I'm not Dolores Umbridge. Every day, I receive about 15 hours of requests beyond what any human is capable of doing, but addressing people as they wish to be addressed takes 5 seconds.

11. Course Objectives and Outcomes

Lecture & Laboratory Objectives:

1. Understand the different fields of research (e.g., epidemiology vs. randomized, controlled trials) and know a bit about their theory and history (i.e., research and how it got that way).

2. Develop an understanding for the research method. Be able to define the aims of research and know more about those aims than a bunch of memorized lines. And be able to perform (with understanding and competence) each stage of the research process.

3. Be able to invent a researchable epidemiological question and establish an appropriate, testable hypothesis.

4. Access the technological resources for research (PubMed, Pacific's library, etc.). Be able to conduct a reasonable (comprehensive and unbiased) systematic review of the literature.

5. Understand the different types of variables. Know examples of each and know *why* those examples *are* examples (don't just memorize examples; actually understand them).

6. Be able to collect epidemiological data, organize it, and prepare it for analysis.

7. Compare/contrast different statistical methods: which analysis is best to answer what type of question? Know standard testing protocols: how are things measured? Be able to run (and understand) the following analyses in SPSS:

1) Measurements of central tendency
2) Bivariate correlations
3) Chi-squared test
4) T-test (paired and independent samples)
5) Binary logistic regression
6) Poisson/negative binomial regression
7) Simple/multiple linear regression
8) One-Way ANOVA
9) Two-Way ANOVA
10) Mixed ANOVA

8. After analyzing data, be able to correctly interpret your findings, appropriately report them, and understand what you're saying.

9. Develop a poster and prepare a presentation for it. This is step one of disseminating scholarly work. Step two is submitting manuscripts for publication. We're not doing step two in this class; only step one. If you decide you want to know about the process of article submission, you can read the chapters about it in the ACSM textbook:

Chapter 21: Submitting a Manuscript for Publication: Finding the Publication Outlet
William J. Kraemer, PhD, FACSM
David P. Looney, MS, CSCS
David R. Hooper, MA
Tunde K. Szivak, MA
Shawn D. Flanagan, MA, MHA

10. Remember the content that matters to you; be able to apply it to your career.

12. Course Content and Calendar

Block 1 Defining Science, Research, and Epidemiology

Lecture 1   **Monday, January 12**

Introduction to Epidemiology
>   Syllabus
>   Course Orientation
>   Expectations

Lecture 2   **Wednesday, January 14**

Fundamentals of Science and Scientific Inquiry: How We Know What We Know
>   What is Science? What is Research?
>   What is the Purpose of Science and Research?
>   What is the Importance of Science and Research?
>   How are Science and Research Communicated?
>   A Basic History of Research
>   The Fundamental Concept of Testing Predictions

CORRESPONDING TEXTBOOK MATERIAL:
>   *ACSM Research Methods*: Chapter 1 (1-8)

Lecture 3   **Friday, January 16**

Fundamentals of Study Design
>   What is a Research Question?
>   What are the Inputs and Outcomes?
>   Independent Variables
>   Dependent Variables
>   What are the Categories of Research?
>   Descriptive Research
>   *Case Study, Case Report, Case Series*
>   *Correlational Studies*
>   *Cross-Sectional Studies*
>   Observational Research
>   *Cohort Study*
>   *Case-Control Study*
>   Experimental Research
>   *Randomized, Controlled Trials*
>   Systematic Reviews and Meta-Analyses

CORRESPONDING TEXTBOOK MATERIAL:
>   *ACSM Research Methods*: Chapter 5 (73-90)
>   *ACSM Research Methods*: Chapter 7 (121-141) ←Optional
>   *Epidemiology 101*: Chapter 6 (105-119) (2nd Edition: Chapter 7)

Lecture 4   **Wednesday, January 21**

Developing a Research Question
- Writing a Hypothesis
- Appropriate Independent and Dependent Variables
- Person Variables, Place Variables, Time Variables
- Moderator and Mediator Variables
- Identifying Covariates and Confounding Variables

CORRESPONDING TEXTBOOK MATERIAL:
- *Epidemiology 101*: Chapter 4 (65-87) (2nd Edition: Chapter 5)
- *ACSM Research Methods*: Chapter 3 (29-49)

Lecture 5   **Friday, January 23**

Bench to Bedside: The Utility of Biomedical Research
- The Scientific Method and the Uncertainty of Outcomes
- Variance: The Scatter that Accompanies Outcomes
- Evidence-Based Practice in the Clinic
- Benefits and Pitfalls of Evidence-Based Treatment
- The Hierarchy of Evidence
- Proper Understanding of Scientific Findings
- Proper Application of Scientific Findings

CORRESPONDING TEXTBOOK MATERIAL:
- *ACSM Research Methods*: Chapter 6 (93-118)

Lecture 6   **Monday, January 26**

19th Century Epidemiology: Development and Philosophy of Epidemiological Surveillance
- Definition of Epidemiology
- Development of Epidemiological Principles
- Historical Perspective: Landmark Investigations in Epidemiology

CORRESPONDING TEXTBOOK MATERIAL:
- *Epidemiology 101*: Chapter 1 (1-23) (2nd Edition: Also Chapter 1)

Lecture 7   **Wednesday, January 28**

20th Century Epidemiology: Development of Epidemiological Tools and Questions
- Presentation of Epidemiological Data
- The Causes of Chronic Disease (e.g., Lung Cancer, Diabetes, and Heart Disease)
- Epidemiology of Physical Activity and the Obesity Epidemic
- Pregnancy, Maternity, and Child Health
- Health Concerns in Aging Populations

Lecture 8   **Friday, January 30**

20th Century Epidemiology: Important Discoveries and Inappropriate Conclusions
- Historical Perspective: What Went Right and What Went Wrong
- Current State of Epidemiology
- Conclusions and Decisions in Health and Medicine
- Epidemiology: "Is It Time to Call It a Day?"

Lecture 9   **Monday, February 2**

Epidemiology: *Traditional* Current Applications: A Brief Introduction

       Epidemiology = Epidemics
       Health and Social Epidemiology
              The Outbreak and Transmission of Diseases and Disasters
              The Tragedies that Accompany Sexual Exposure
       Occupational Epidemiology
              Exposure to (and Handling of) Chemicals and Materials
       Medical Epidemiology
              Patient Outcomes
       Biological Epidemiology
              Genetic Associations

Lecture 10   **Wednesday, February 4**

Epidemiology: Future Applications

       "Big Data" and the Information Age
       Big Data's Congenital Problems (Which Require Special Care)
       Health and Medicine
              Perks and Problems with "The Google Flu"
       Epidemiological "Startups"
       Epidemiologically Appraising the Superstore Shopper
       Future Applications in Epidemiology

Lecture 11   **Friday, February 6**

Review of All Material from This Block

       The History, Purpose, and Importance of Science and Research
       The Types of Variables
              Independent/Dependent, Moderator/Mediator, Confounding, etc.
       Study Designs (Categories of Research) and the Hierarchy of Evidence
       The Development of a Research Question and Establishing a Hypothesis
       Bench-to-Bedside: Benefits and Pitfalls of Evidence-Based Practice in the Clinic
       Historical and Modern Epidemiology: Where It Came from and Where It's Headed

Exam 1 covers all the above information.
It will be held on **Monday, February 9**.

Block 2 Understanding and Performing the Fundamental Epidemiological Analyses

Lecture 12   Wednesday, February 11

Post-Exam Housekeeping (Tips, Etc.)
Building a Background: Conducting a Literature Review
      Searching for (and Extracting Information from) Peer-Reviewed Journals
      Evaluating Journal Quality (e.g., Open Access, Impact Factor, etc.)
      Medical Databases: PubMed/MEDLINE, Google Scholar, Scopus, and Web of Science
Building a Database: What to Include and How to Include It
      Development and Management of Variables
CORRESPONDING TEXTBOOK MATERIAL:
      ACSM Research Methods: Chapter 4 (51-72)
      ACSM Research Methods: Chapter 17 (305-323) ←Optional

Lecture 13   Friday, February 13

The "P-Word": Understanding the Misunderstood Meaning of "Significance"
      The Meaning of "Significance"
      History of the P-Value: The Genius of Ronald Fisher
      Statistical vs. Practical Significance
      Type I vs. Type II Errors
CORRESPONDING TEXTBOOK MATERIAL:
      ACSM Research Methods: Chapter 2 (9-26)

Lecture 14   Wednesday, February 18

The "P-Word" Part 2: Standard Quantitative Reporting and Threats to Validity
      Rules for Employing a P-Value
      Internal vs. External Validity
      GIGO *(Garbage In, Garbage Out)*
      Representative Sampling
CORRESPONDING TEXTBOOK MATERIAL:
      ACSM Research Methods: Chapter 8 (143-160)
      ACSM Research Methods: Chapter 19 (343-356) ← More optional than the rest

Lecture 15   Friday, February 20

The "P-Word" Part 3: Employing the P-Value Responsibly
      Factors Affecting the Quality of Epidemiological Data
            Subject Adherence
            Management of Outliers
            Appropriateness of Equipment
            Deliberate vs. Accidental Error
            Causality in Epidemiological Analyses

Lecture 16   **Monday, February 23**

Building a Poster Section by Section
> Introduction
> Purpose
> Methods
> Statistical Analysis
> Results
> Conclusions

Epidemiological Databanks and Resources
> Types of Epidemiological Measurements
> Epidemiological Measurements: Focus on Morbidity and Mortality
> U.S. Census Bureau and the National Center for Health Statistics
> Case Registries
> International Organizations and Data Sources

Initial Analyses: Describing Your Population with Numbers
> Descriptives
> Frequencies
> Central Tendency (Mean, Median, Mode)

Detecting Significant Differences Between Samples
> Chi-Squared Test
> Paired Samples T-Test
> Independent Samples T-Test
> > How to Conduct All Tests and Interpret Their Outputs

Building your "Table 1"

Introduction to (and Instructions for) Lab #1
> Analyzing Medical Data to Detect Meaningful Group Differences

CORRESPONDING TEXTBOOK MATERIAL:
> *Epidemiology 101*: Chapter 3 (45-62) (2nd Edition: Chapter 4)

Lecture 17   **Wednesday, February 25**

Epidemiological Investigations: Making Predictions and Understanding Associations
> Introduction to Regression Analyses: What Are They?
> > Binary Logistic Regression
> > Poisson/Negative Binomial Regression
> > Simple Linear Regression
> > Multiple Linear Regression
> Appraising the Quality of a Database: Does It Permit Regression Analyses?
> > Descriptive Statistics: "Explore" Feature
> > Skewness and Kurtosis
> > Tests of Normality
> > Histograms
> Introduction to Lab 2

Lecture 18   **Friday, February 27**

Still Introducing Regressions (and Explaining Cases of Epidemiology Gone Wrong)
> Epidemiology Inappropriately Used in Popular News
> More Data Appraisal: Does Your Database Permit Regressions?
> Constructing Scatterplots in SPSS
> Bivariate Correlations: Deciding Which Variables to Include in a Regression Analysis
> > (Karl) Pearson's r
> Conducting a Simple Linear Regression

Lecture 19   **Monday, March 2**

Still Talking About Regressions (There's a Lot to Discuss)
> Review of Simple Linear Regression
> Multiple Linear Regression: Conducting the Analysis and Interpreting the Outputs
> > Independent and Dependent Variables
> > R^2
> > Unstandardized Beta
> > Confidence Intervals
> Odds-Based Predictions: Binary Logistic Regression
> > Understanding Likelihood and Odds Ratios
> > Conducting and Interpreting a Logistic Regression
> > Nagelkerke R^2
> > Exp(B): Exponentiation of the Beta Coefficient... It's an Odds Ratio
> > Confidence Intervals for Odds Ratios
> Poisson/Negative Binomial Regression: Understanding the Theory and Context

Lecture 20   **Wednesday, March 4**

Deciding on the Most Appropriate Analysis (Ridiculously Important, So Listen Up)
> Descriptives and Frequencies
> Independent-Samples and Paired-Samples T Tests
> Chi-Squared Test
> Bivariate and Point Biserial Correlations
> Logistic Regression
> Negative Binomial Regression
> Linear Regression

Reading Outputs (Still Ridiculously Important, So Keep Taking Notes and Stuff)
> Descriptives and Frequencies
> Independent-Samples and Paired-Samples T Tests
> Chi-Squared Test
> Bivariate and Point Biserial Correlations
> Logistic Regression
> Linear Regression

Lecture 21   **Friday, March 6**

Deciding on Statistical Tools *(Consider Your Project)*: More Examples of Analyses and Outputs
Making Predictions: Receiver Operating Characteristic Curves
> History of ROC Curve
> Uses of ROC Curves (in the clinic)
> Generating an ROC Curve
> Sensitivity and Specificity
> Context for Application

Poster Progress: Advancing Your Projects
> Advice for Research Questions and Statistical Approaches

Lecture 22   **Monday, March 16**

Reading Scenarios and Deciding on a Statistic
Reading Outputs and Deciphering Meanings
Review of All Material from This Block
> Conducting Appropriate Literature Reviews and Evaluating Journal Quality
> The History and Meaning of Significance in Statistical Testing
> Type I and Type II Errors; Internal and External Validity
> The Big, Important Figures in Statistical History (Pearson, Gossett, Fisher)
> Measurements of Central Tendency (Mean, Median, and Mode)
> Correlation vs. Causality (i.e., "Causation" Because it Rhymes)
> Preliminary Tests: Frequencies, Descriptives, and Bivariate Correlations
> Detecting Differences Between Samples: Chi-Squared Tests and T-Tests
> Regression Analyses: What Conditions Call for Which Model?
> Where Does Epidemiology Often Go Wrong?
> GIGO and the Methods of its Trash (Deliberate and Accidental Error)
> Representative Sampling, Subject Adherence, Appropriateness of Equipment

Exam 2 covers all the above information.
It will be on **Wednesday, March 18**.

Block 3 *Applications of Epidemiology (Including Your Project)*

Lecture 23   Friday, March 20

Discussing Exams
Pep Talk
Reading SPSS Outputs

Lecture 24   Monday, March 23

Reading Scenarios, Deciding the Most Appropriate Statistical Tool
Qualitative Research
       Biopsychosocial Model
Wherever Possible, Use Unbiased Measurements; If Totally Impossible…
Qualitative Research in Theory and in Practice
       Case Report
       Narrative Study
       Phenomenological Study
       Grounded Theory
       Ethnography

Lecture 25   Wednesday, March 25

Finishing Qualitative Designs
Methodological Choices in Various Scenarios
Reading Statistical Outputs

Lecture 26   Friday, March 27

Collecting Survey Data
       Questionnaire Program You Can Use: SurveyMonkey
Considerations in Sampling (Beyond Roosevelt vs. Landon)
Considerations in Data Collection, Management, and Dissemination
Randomization
       Single vs. Double Blinding
Publication Bias
       How It Arises and Why It Matters
Ethical Data Collection and Reporting
       Fabrications, Falsifications, and Fraud… And Prison Sentences
CORRESPONDING TEXTBOOK MATERIAL:
       ACSM Research Methods: Chapter 20 (359-372)

Block 4 *The Statistical Models that Follow Epidemiology*

Lecture 27   **Monday, March 30**

After Epidemiology: What Comes Next
      Experimental Design: Introduction to Analysis of Variance (ANOVA)
      Theory and Uses of Repeated Measures ANOVA
One-Way Repeated Measures ANOVA
      Assumptions
      Conducting the Test in SPSS
      Reading and Understanding the Outputs
      Reporting Your Findings

Lecture 28   **Wednesday, April 1**

Experimental Designs: More ANOVA Models
      Theory and Uses of *More* ANOVA
Two-Way Repeated Measures ANOVA
      Assumptions
      Conducting the Test in SPSS
      Reading and Understanding the Outputs
      Reporting Your Findings
Other ANOVA Models
      Characterization of Mixed, MANOVA, ANCOVA, and MANCOVA
READING:
      ACSM Research Methods: Chapter 14 (253-262)
      ACSM Research Methods: Chapter 18 (325-342) ←Helpful during block 2 as well

Lecture 29   **Friday, April 3**

Finishing ANOVA
Deciding on Statistical Tools for Diverse Research Questions

Lecture 30   **Monday, April 6**

Calculating Effect Size and Estimating Your N
      What Determines a Healthy N (Precision, Variation, Magnitude of Effect, Etc.)
GPower Software
      Independent-Samples T Test
      Paired-Samples T Test
      Linear Regression
Online Power Analysis
      Linear Regression

Lecture 31   **Wednesday, April 8**

Writing, Presenting, and Publishing in Epidemiology
        Poster Presentations
        Oral Presentations
        Manuscripts
How to Write, Speak, and Present Like a Literate Person (Part 1)
        Grammar and the Epidemiologist's Parlance
        Common Errors You Should Never Make (But Probably Are Making)

Lecture 32   **Friday, April 10**

Literacy in Reporting (Part 2)
        More Common Errors and Corrections of Them

Lecture 33   **Monday, April 13**

Literacy in Reporting (Part 3)
        Rhetorical Tricks to Tidy Your Language

Lecture 34   **Wednesday, April 15**

Nope Part 1: Distortions in Translation: It's How You Say It
        Misleading (and Otherwise Inappropriate) Reporting of Findings
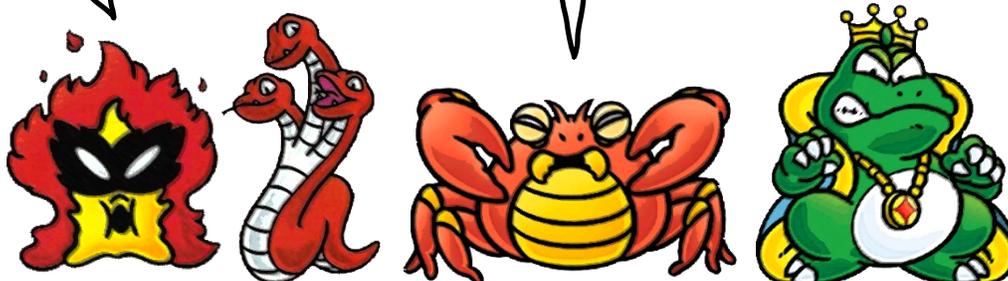   Appropriate Reporting of Findings (How to Be an Honest Attorney)

Lecture 35   **Friday, April 17**

Nope Part 2: Spotting Fallacies Everywhere

The following week, you'll take time to create your posters and present them online.

Exam 3 is on the last day of class: Monday, April 27 at 9:30am.
It covers all the information above. But mostly statistics.

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13. Additional *(helpful, but not necessary)* Information

Validity and Reliability. We'll talk about this some; if you want to know more:

Chapter 10: Veracity of Data: Understanding Validity and Reliability
Lori L. Ploutz-Snyder, PhD
Jessica M. Scott, PhD

Institutional Review Boards (what you can and can't ethically do in research):

Chapter 12: Ethical Principles in Human and Animal Research
Matthew D. Barberio, PhD
Margaret K. Bradbury, MS, CGC, MSHS
Monica J. Hubal, PhD

More detail on analyses, mostly biological (before the stats of chapters 6 and 18):

Chapter 16: First Analyses After Data Collection
Elaine C. Lee, PhD
Kathrine R. Weeks, PhD

Information about influencing and implementing health policy (cost-benefit analysis, decisions based on risks and benefits, etc.):

CHAPTER 7
Epidemiology and
the Policy Arena

Chapter 8 if you're using
the 2nd Edition
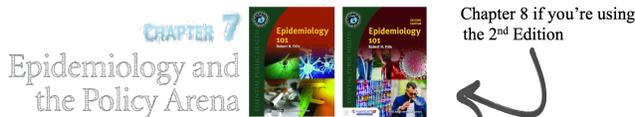
14. Course Evaluation

1. Copies of student work may be retained to assess how the learning objectives of the course are being met. And I might scan your work (just the good bits) for future slideshows.

2. If you have suggestions ("it'd be great if we could learn about…"), feel free to speak up. If possible, we will accommodate those suggestions. If not possible, don't hesitate to attend office hours and we can chat about your suggestions.

3. We'll do the student evaluations at the end of the semester. I prefer to do it on the last day of class, immediately after the final. That feels like the best way for you to know what it is you're evaluating. Filling out the forms three weeks before the end of class seems odd to me. It's like reviewing a movie without watching the last 20 minutes. That said, digital evals are sort of imprecise. So… somewhere around the end of the semester, this will happen.

15. Letters of Recommendation
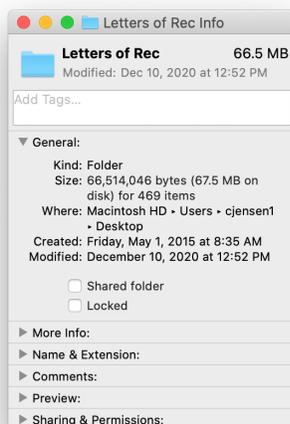
I get a lot of requests. That picture is of my Letters of Rec folder. I came to Pacific in 2015. Before the end of 2020 (when I took that screen shot), I had written 469 letters. Today, it's 704. During my first year, I wrote a letter for every student who asked. During my second year, I came close. And then I never came close again. Today, the difference between the number of requests I receive and the number of letters a human being can write is funny. Why am I telling you this? To warn you that you might not get a letter of recommendation from me. Not because you don't deserve one – you very likely will – but because I'm just a person… and there's only so much I can do. So… if you want a letter from me at some point, you need at least a B+ in every class we've had together, and I need at least a month's notice (my wait list is always at least 10 students long). I also need some information about you. That speeds up my process. If I have to sit down and come up with the whole thing from scratch (and then look up awards, grades, dates that you took my classes, etc.), it's going to take me all day. If I have a list of letter ingredients in front of me, I can do it in an hour. The more work *you* put in – sending me your résumé, transcript, and everything you want highlighted – the more compelling my letter will be. So… if you want a template, don't give me much to work with. But if you want a page of sunshiny, glowing praise, help me out.

16. Important Dates for University of the Pacific

Spring 2026

Payment deadline for Spring 2026	January 1
Classes begin	January 12
Martin Luther King Jr. Day holiday (no classes)	January 19
#Last day to add classes	January 23
#Last day for pass/no credit or letter grade option	January 23
#Last day to drop classes without a record of enrollment	January 23
#Last day to drop classes with 100% refund	January 23
Last day for pro-rated refund	February 6
Census date	February 6
Deadline for faculty to submit week 5 early grades	February 13
President's Day holiday (no classes)	February 16
Summer 2026/Fall 2026 schedule of classes available	March 9
Spring Break	March 9-13
*Advising for Summer/Fall 2026 for continuing students continues (excluding spring break)	March 16-27
Classes resume	March 16
Last day to withdraw	March 25
*Summer 2026 registration opens for continuing students (no appointments required)	March 30
*Early registration appointments begin for continuing students for Fall 2026	March 30
Classes end	April 28
Study Day	April 29
Final examination period	April 30, May 1-6
Commencement (Stockton)	May 9
Deadline for faculty to submit grades	May 11

Day/Time of Final	Thursday April 30	Friday May 1	Monday May 4	Tuesday May 5	Wednesday May 6
	DAY/TIME OF CLASS				
8-11 a.m.	TR 10 a.m.–noon	MWF 11 a.m.–12:30 p.m.	MWF 8–9:30 a.m.	TR 8 a.m.–10 a.m.	MWF 9:30–11:00 a.m.
11 a.m.–noon	Break				
Noon–3 p.m.	X	MWF 12:30 p.m. –2 p.m.	X	TR 1:00 p.m.– 3:00 p.m.	MWF 2–3:30 p.m.
3–6 p.m.	TR 3–5 p.m.	X	MWF 3:30–5 p.m.	X	X
6–7 p.m.	Break				
7–10 p.m.	TR 8–10 p.m.	MW 5–7 p.m. 6–8 p.m.	MW 8–10 p.m.	TR 5–7 p.m. 6–8 p.m.	X

(handwritten: final exam Schedule ←)

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