California State University, Fresno
Department of Health Science

HS 92: Public Health Statistics
Fall 2004

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Course Description

This course is 3 units and meets from 10:00 – 10:50 on MWF in McLane Hall Room 176.
Introduction to descriptive and inferential statistics as applied to evaluation and research.
Central tendency and dispersion, central limit theorem, hypothesis testing, ANOVA, correlation,
and non-parametric methods are studied.

Prerequisites

Students must take the ELM exam; students who do not pass the exam must record a grad of C or better in a college-taught intermediate algebra course.

Course Goals and Objectives

This course is designed to promote learning and understanding, and to motivate students in the field of descriptive and inferential statistics by presenting statistics in a context that relates to their experiences. The purpose of the course is to assist students in comprehending professional research and to give them competency in conducting and analyzing research. Upon completion of this course, the student will be able to:

- Present and describe sets of data.
- Calculate and interpret the four basic types of descriptive statistics (measures of central tendency, dispersion, position, and types of distributions).
- Analyze bivariate data.
- Apply the rules of probability.
- Identify, interpret, and use normal probability distributions.
- Identify and explain the measures and patterns of variability.
- Employ the basic concepts of estimation and hypothesis testing.
- Perform and use types of inferences concerning population parameters, proportions, and standard deviations.
- Execute and use the chi-square distribution
- Comprehend and use the single-factor analysis of variance technique (ANOVA).

Required Text

Calculators
A handheld calculator is necessary for each class meeting. Any inexpensive pocket calculator that computes means, standard deviations and square roots is adequate. The student is responsible for learning how to operate their particular calculator.

Examinations
There will be 4 exams (including the final), each worth 100 points, for an exam total of 400 points. Exams will cover all written, oral, and online materials presented in or for the class.

Students are expected to take the exams at the times and dates outlined in the schedule below. In the rare event that a serious and compelling emergency should arise, the student MUST notify me (by phone message or email) prior to the exam time and date that they will miss the exam. I will then arrange for the student to take a similar exam or otherwise do a makeup. If I am not notified prior to the test date and/or a serious and compelling emergency is not indicated, the student will receive a grade of zero points for the exam.

Homework and Assignments
Homework, classroom assignments, and video critiques will be assigned throughout the semester, with each activity worth a certain number of points. There will be a “homework” total of 100 points.

Grading
This course will have four exams (three midterms and one final), each worth 100 points, for an exam total of 400 points. It will also have homework and assignments for a “homework” total of 100 points. Grading will be determined by the percentage of points earned out of the possible 500 points, with letter values as follows:

- A = 90-100%
- B = 80-89%
- C = 70-79%
- D = 60-69%
- F = 59% and below

There will be no extra credit.

Course and University Policies

Course Policies and Prohibitions: Students are expected to regularly attend class, participate in discussions, and complete all required reading in a timely fashion. Unless otherwise instructed, students are also expected to work independently at all times.

Disruptive Classroom Behavior: Any disruptive or distracting behavior is prohibited, including, but not limited to: Side conversations during lecture, cell phone usage, tape-recording of lecture, bringing visitors or guests to class, use of inappropriate language, or in any way demeaning or disturbing others in the class. (Please refer to the University Policy on Disruptive Classroom Behavior, which can be found in the Schedule of Courses).
Students with Disabilities: Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities in Madden Library 1049 (278-2811).

Cheating and Plagiarism: “Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one’s grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term ‘cheating’ not be limited to examination situations only, but that it include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means. Plagiarism is a specific form of cheating that consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one’s own work.” Penalties for cheating and plagiarism range from a 0 or F on a particular assignment, through an F for the course, to expulsion from the university. For more information on the University’s policy regarding cheating and plagiarism, refer to the Schedule of Courses (Legal Notices on Cheating and Plagiarism) or the University Catalog (Policies and Regulations).

Computers: “At California State University, Fresno, computers and communications links to remote resources are recognized as being integral to the education and research experience. Every student is required to have his/her own computer or have other personal access to a workstation (including a modem and a printer) with all the recommended software. The minimum and recommended standards for the workstations and software, which may vary by academic major, are updated periodically and are available from Information Technology Services (http://www.csufresno.edu/ITS/) or the University Bookstore. In the curriculum and class assignments, students are presumed to have 24-hour access to a computer workstation and the necessary communication links to the University’s information resources.”

Subject to Change

This syllabus and schedule are subject to change in the event of extenuating circumstances. If you are absent from class, it is your responsibility to check on announcements made while you were absent.
## Important Course Dates

- **September 6**: Labor Day, no classes
- **Week of Sept 27**: First exam
- **Week of Nov 1**: Second exam
- **Week of Nov 24-26**: Thanksgiving Recess
- **Week of Dec. 13**: Final exams

## Weekly Topics (+ Reading and Assignments)

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<th>Topic</th>
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<th>Homework/Assignments</th>
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<td>1</td>
<td>Aug. 23</td>
<td>Introduction to Statistics</td>
<td>Ch 1</td>
<td>Exercise p. 33: even 1.78-1.86</td>
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<td>2</td>
<td>Aug. 30</td>
<td>Descriptive Analysis &amp; Presentation of Single-variable Data</td>
<td>Ch 2</td>
<td>Exercise p. 116: 2.170, 2.182, 2.186, 2.190</td>
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<td>3</td>
<td>Sept. 6</td>
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<td>4</td>
<td>Sept. 13</td>
<td><strong>Exam I: 9/15</strong> (+ begin next section)</td>
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<td>5</td>
<td>Sept. 20</td>
<td>Normal Probability Distributions</td>
<td>Ch 6</td>
<td>Exercise p. 306:</td>
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<td>6</td>
<td>Sept. 27</td>
<td>Sample Variability</td>
<td>Ch 7</td>
<td>Exercise p. 333:</td>
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<td>7</td>
<td>Oct. 4</td>
<td><strong>Exam II: 10/6</strong> (+ begin next section)</td>
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<td>8</td>
<td>Oct. 11</td>
<td>Intro to Statistical Inferences</td>
<td>Ch 8</td>
<td>Exercise p. 403:</td>
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<td>9</td>
<td>Oct. 18</td>
<td>Inferences Involving One Population</td>
<td>Ch 9</td>
<td>Exercise p. 462:</td>
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<td>10</td>
<td>Oct. 25</td>
<td>Inferences Involving Two Populations</td>
<td>Ch 10</td>
<td>Exercise p. 527:</td>
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<td>Nov. 1</td>
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<td>12</td>
<td>Nov. 8</td>
<td><strong>Exam III: 11/10</strong> (+ begin next section)</td>
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<td>13</td>
<td>Nov. 15</td>
<td>Additional Applications of Chi-Square</td>
<td>Chapter 11</td>
<td>Exercise p. 565:</td>
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<td>14</td>
<td>Nov. 22</td>
<td>Descriptive Analysis &amp; Presentation of Bivariate Data</td>
<td>Chapter 3</td>
<td>Exercise p. 169:</td>
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<td>15</td>
<td>Nov. 29</td>
<td>Analysis of Variance</td>
<td>Chapter 12</td>
<td>Exercise p. 595:</td>
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<td>Dec. 6</td>
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<td>17</td>
<td>Dec. 13</td>
<td><strong>Exam III</strong> (Wed, 12/15, 8:45 am)</td>
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