Fall 2010  Office Hours: Online
HCSV 463  Office Location: Online
Sec: 01 (#1487) Online  Ph. 530-354-6910 (cell) - No calls after 8pm. NO TEXT MESSAGES. Weekends, holidays, vacation okay to call. Calls that do not show up on my phone will not be answered, thus, if you have caller ID block, etc., to prevent me from knowing who is calling me, your call may not go through.
Room: Online  E-Mail: Use Vista

REQUIRED TEXTS


COURSE OUTLINE BY WEEK

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPIC</th>
<th>ASSIGNMENT</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>History and Scope of Epidemiology</td>
<td>READ: Friis and Sellers, Chapter 1&lt;br&gt;READ STUDY GUIDE: Friis, Chapter 1&lt;br&gt;DISCUSSION: <em>Introduce Yourself</em>&lt;br&gt;HOMWORK: Complete study guide questions Page 3-4. Submit completed questions to instructor by next Monday, anytime of day. Chapter 1 and 3 are mandatory. You choose any five other study guide chapter homework assignments via Vista.</td>
</tr>
<tr>
<td>2</td>
<td>Measures of Morbidity and Mortality</td>
<td>READ: Friis and Sellers, Chapter 3&lt;br&gt;READ STUDY GUIDE: Friis, Chapter 3</td>
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<tr>
<td>3</td>
<td>LABOR DAY - NO CLASS</td>
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<tr>
<td>WEEK</td>
<td>TOPIC</td>
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| 4    | Sept 13 | Descriptive Epidemiology: Person, Place, Time | READ: Friis and Sellers, Chapter 4  
READ STUDY GUIDE: Friis, Chapter 4  
Income, Poverty, Health Insurance (PowerPoint)  
**Homework:**  
1. Complete study guide questions Pages 11-12 on your own. Submit questions via Vista. |
| 5    | Sept 20 | Sources of Data for Use in Epidemiology | READ: Friis and Sellers, Chapter 5  
READ STUDY GUIDE: Friis, Chapter 5  
**Homework:**  
| 6    | Sept 27 | **EXAM 1** (Friis and Sellers Chapters 1-5, Assigned Readings, Weekly Discussion Topics)  
Study Designs: Ecologic, Cross-Sectional, Case-Control | Exam Period 6am-10pm, Review Period 10pm-10am  
READ: Friis and Sellers, Chapter 6  
READ STUDY GUIDE: Friis, Chapter 6  
**Homework:**  
| 7    | Oct 4   | Study Designs: Cohort Studies | READ: Friis and Sellers, Chapter 7  
READ STUDY GUIDE: Friis, Chapter 7  
**Relative Risk Assignment - Handouts**  
**Homework:**  
| 8    | Oct 11  | Experimental Study Designs | READ: Friis and Sellers, Chapter 8  
READ STUDY GUIDE: Friis, Chapter 8  
**Homework:**  
| 9    | Oct 18  | Measures of Effect | READ: Friis and Sellers, Chapter 9  
READ STUDY GUIDE: Friis, Chapter 9  
**Homework:**  
| 10   | Oct 25  | Data Interpretation Issues | READ: Friis and Sellers, Chapter 10  
READ STUDY GUIDE: Friis, Chapter 10 |
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<td></td>
<td>Homework:</td>
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<tr>
<td>11</td>
<td>EXAM 2 (Friis and Sellers Chapters 6-10, Assigned Readings, Weekly Discussion Topics)</td>
<td>Exam Period 6am-10pm, Review Period 10pm-10am</td>
</tr>
</tbody>
</table>
| Nov 1 | Screening for Disease in the Community          | READ: Friis and Sellers, Chapter 11  
|       |                                                 | READ STUDY GUIDE: Friis, Chapter 11 |
|       | Homework:                                       |             |
| 12    | Epidemiology of Infectious Diseases             | READ: Friis and Sellers, Chapter 12  
| Nov 8 |                                                 | READ STUDY GUIDE: Friis, Chapter 12 |
|       | Homework:                                       |             |
| 13    | Epidemiologic Aspects of Work                   | READ: Friis and Sellers, Chapter 13  
| Nov 15|                                                 | READ STUDY GUIDE: Friis, Chapter 13 |
|       | Homework:                                       |             |
| Nov 22| THANKSGIVING WEEK HOLIDAY – NO CLASS            |             |
| 14    | Molecular and Genetic                           | READ: Friis and Sellers, Chapter 14  
| Nov 29|                                                 | READ STUDY GUIDE: Friis, Chapter 14  
|       |                                                 | Genomics Primer (PowerPoint) |
|       | Homework:                                       |             |
| 15    | Psychologic, Behavioral, and Social Epidemiology | READ: Friis and Sellers, Chapter 15  
| Dec 6 |                                                 | READ STUDY GUIDE: Friis, Chapter 15  
<p>|       |                                                 | Social Epidemiology (PowerPoint) |
|       | Homework:                                       |             |
|       |                                                 |             |
|       | Homework:                                       |             |</p>
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<tr>
<th>WEEK</th>
<th>TOPIC</th>
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<tr>
<td></td>
<td>Profession</td>
<td>READ STUDY GUIDE: Friis, Chapter 16</td>
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<td><strong>Homework:</strong></td>
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<tr>
<td>Dec 13</td>
<td><strong>EXAM 3 (Chapters 11-16, Assigned Readings, Weekly Discussion Topics)</strong></td>
<td>Exam Period 6am-10pm, Review Period 10pm-10am</td>
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**CLASS EXPECTATIONS**

1. **DISABLED STUDENTS.** If you are a student with recognized disabilities, and you need special accommodations, please inform the professor to work out specialized lessons and tests. Please refer to the Handbook (http://www.csuchico.edu/dss/). The CSUC Disability Support Services Office will contact me officially. Disabled students without proper paperwork are not entitled to special accommodations. You will not have graded assignments and exams retroactively adjusted.

2. **VIRTUAL OFFICE HOURS.** My virtual office hours are everyday until 8pm, including weekends, holidays, and vacations. I have always had an open door policy for students where they can show up to my office any day of the week and any time, as long as I’m sitting at my desk. I’m usually in the office Monday-Friday. I’m not one of those professors who will see students only during the five office hours per week required by university contract. For online students, I have continued the practice by having a virtual open-door policy where you may contact me any day of the week until 8pm. Keep in mind that I will not always be sitting at my computer when you call. To see if I’m sitting at my computer, log in to Vista and it will tell you who is online for each of your courses. If my name is present in the list, that means I’m sitting at my computer.

3. **STUDENT CONDUCT.** Students are expected to be polite and courteous to the professor and students. Do not make personal attacks against others in the weekly discussion postings.

4. **E-MAILS.** Please use Vista e-mail to contact me. I should be logging in at least two to three times per day. If it is urgent, call me on my cell phone. **Do not e-mail me through regular campus e-mail.**

5. **VISTA GRADE BOOK.** The scores you will earn from exams and assignments are for your information only. Grades posted in the VISTA Grade Book not official. Only the grades submitted to the Registrar’s Office are official. **In Vista Grade Book, all students will receive full points for the Weekly Discussions.** If you do not participate one or more weeks, or do not do an acceptable job in posting and responding, I will deduct points for that week. **REMEMBER, Vista closes the discussion on Thursday, thus, you must respond to postings by Wednesday at the latest.**

**GRADING**

The grading scale (percent) that will be used for this course is: A=93-100, A-=90-92, B+=87-89, B=83-86, B-=80-82, C+=77-79, C=73-76, C-=70-72, D+=67-69, D=63-66, D-=60-62, F=<60. Your course grade will be computed as listed in the table below. The professor reserves the right to curve course grades. If you miss an assignment, including the weekly discussion and
homework, you will not receive any points for that assignment. There are no make-ups for missed exams and assignments. No exceptions.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Due Date</th>
<th>Points</th>
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<tbody>
<tr>
<td>Exams 1-3 (100 points each)</td>
<td>Sept 27, Nov 1, Dec 13 (6am-10pm)</td>
<td>300</td>
</tr>
<tr>
<td>Weekly Homework Assignments</td>
<td>Weekly by Friday of week assigned</td>
<td>100</td>
</tr>
<tr>
<td>Vista Weekly Discussions</td>
<td>Weekly by Monday for posting and Wednesday for responses</td>
<td>140</td>
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<tr>
<td><strong>TOTAL</strong></td>
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<td><strong>540</strong></td>
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**COURSE INSTRUCTIONS**

1. **WEEKLY DISCUSSIONS IN VISTA (140 points)**

**INSTRUCTIONS.** Post your information to the weekly discussion by end of the Monday due. Respond to at least two student postings by the end of Wednesday of that week. You should read what others are saying about what you’ve posted. The Weekly Discussion for that topic will automatically close on Thursday.

Each week, we will conduct a comparative, cross-country analysis of epidemiological and disease topics. You will research a topic each week. See the schedule above for what topics. You will go online and obtain epidemiological statistics and disease information by country. No two students may duplicate a country. Only scientific information from official government documents and peer-reviewed publication are acceptable. DO NOT USE Wikipedia or other consumer-based web sites that are not scientific. Always cite your work.

Post what you find in the Weekly Discussion Section. Make sure when you post your information, it doesn’t look like a mess. We won’t be able to read it if you post garbage. **DO NOT ATTACH DOCUMENTS TO THE WEEKLY POSTINGS. DO NOT SIMPLY REFER STUDENTS TO A WEBSITE SO THAT YOU DON’T HAVE TO DIGEST THE INFORMATION FOR THE CLASS.**

Provide a brief analysis of what you found and the references. Include the URL of where you obtained the information.

Discussion Posting Format Example:

COUNTRY – Thailand  
DISCUSSION SUBJECT – Water-Borne Infectious Diseases  
STATISTICS – XXXXXXX  
ANALYSIS – XXXXX  
REFERENCES - XXXXX  

**RESPONDING TO OTHER STUDENT POSTINGS.** Each student must respond to the situation being posed and then respond to at least two comments made by other students. When you post your comments, support your statements with scientific facts from the textbook and
online sources. Avoid posting mindless comments such as “I agree” or “that sounds interesting” or some other comment meant to avoid spending time analyzing student postings.

What makes the weekly discussion meaningful is students conducting cross-country analysis of the topics. Look for patterns of similarities and differences. You see, the similarities or differences we will see are due to genetic, environmental, and social factors. Remember, most countries are relatively homogenous in race/ethnicity, unlike the USA (race/ethnicity is only one factor related to differences in statistics). Thus, you CANNOT compare the USA with other countries. For example, what will we find in Japan? For the most part, everyone is genetically/racially Japanese, unlike the USA. What about Fiji? Most countries in the South Pacific have large immigrant populations of Chinese and Asian Indians. These immigrant populations in some countries are now the dominant groups and the native populations are minorities. Even South America and the some Caribbean countries have majority Asian Indian populations.

The common mistake students make (and faculty) is to compare the USA with other countries. We are NOT like other countries when it comes to health. DO NOT compare the USA with other countries.

Additional Weekly Discussions. I may add a discussion topic if something pops up in the news or research literature that is very relevant to what we are discussing and if I think you will get something out of it. Students are not required to participate in the impromptu weekly discussions, and the material will not be on exams, but I would encourage you. Think of this as an impromptu in-class discussion as a result of current events a professor reads in class. It wasn’t on the syllabus, but it was important for students to talk about.

2. WEEKLY HOMEWORK ASSIGNMENTS (100 Points)
Students are responsible to read the Friis study guide and complete the Study Questions section for each chapter. You will hand in study questions for seven (7) out of sixteen (16) chapters in the Friis study guide. Hand in the questions anytime on Monday of the following week assigned. EVERYONE MUST COMPLETE THE STUDY QUESTIONS FOR CHAPTERS 1 AND 3. Pick and choose the remaining five (5) chapters. See the outline above for due dates.

HOW TO SUBMIT STUDY QUESTIONS? An icon will pop up on your screen similar to an EXAM icon. There is no time limit for these assignments.

3. EXAMS (300 points):
Take Exam. Take the exam anytime between 6AM-10PM on day of exam. No exceptions.
Review Your Answers: 10PM-10AM. No exceptions.
Example: Exam 1 is scheduled for September 27 from 6am-10pm. This is the Exam Period. Once the exam period is over, you may review your exam online from September 27, 10pm, to September 28, 10am. This is the Review Period where you can review your exam as you would if you were taking an in-class course. Once the exam and review periods are over, Vista will
automatically prevent you from accessing the exam. The period will not be opened again. NO EXCEPTIONS.

Exams are multiple choice, true/false, and matching. Exams are NOT open book. You will have approximately 30 seconds to answer each question. Make sure you are not distracted with children, pets, and anything else while you are taking online exams. The exams are timed. Do not ask for more time because I will not extend the time on exams for any reason. Timed exams require students to know the assigned material without looking it up in the textbook. Once the time period is over, Vista will close the exams. No exceptions. Make sure you save each answer before going to the next question.

You are expected to have a computer and Internet connection that are reliable. It’s a mistake to log in to Vista to take the exam during peak hours when the Vista computer system might be slowed by heavy traffic. You will not be allowed to take the exam over.

Some of the questions will require you to compute the correct answer. Your instructor will provide you with the exam questions IN ADVANCE so that you can compute the answers at home, and then simply enter the correct answers in the corresponding online exam question.

4. POWERPOINTS PRESENTATIONS
The PowerPoint Presentations for each week’s lectures and discussions are outlines of what is being taught, and is not meant to be comprehensive. You will not be able to pass this course by merely reading the slideshows. You must still read your textbook and other assignments. I’ve included other PowerPoint presentations that I’ve developed for another textbook. The chapter numbers are not the same, but the information is pretty much the same. Use it if it is helpful to you to understand the material.

5. EXTRA CREDIT
There are no extra credit assignments scheduled for this course. Please do not contact me about this subject. If there are opportunities during the semester, I will let the class know by Vista e-mail.

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COURSE CONTENT

COURSE DESCRIPTION

(Course Information from CSUC Catalog)
Course Code/Number: HCSV 463
Course Title: Epidemiology
Credits/Semester Offered: 3.0 Fall
Prerequisites: MATH 105. Recommended: HCSV 320.
Description: Study of the patterns of the major chronic and infectious diseases. Both individual- and population based approaches to prevention and control will be examined.

OVERALL COURSE OBJECTIVES

Upon completion of this course, each student should possess the following areas of subject mastery:
1. Epidemiology as a tool for assessing potential causal associations, health needs of a population, delivery of services, program planning, and social policy.
2. Assessment of the validity and reliability of such data collection mechanisms as death certificates, patient charts, agency records, and personal surveys.
3. Measurements of mortality and morbidity (rates, ratios, and adjusted rates) and the major sources of error in measurement of disease.
4. Descriptive epidemiology: the amount and distribution of disease within a population by person, place, and time.
5. Research designs such as retrospective (case-control), prospective (cohort), historical prospective, cross-sectional, and experimental (clinical and community trials).
6. Evaluation of screening programs in the detection of disease; terminology of screening including determinants of sensitivity and specificity.
7. Population dynamics and health with respect to the stages in demographic transition and trends in the U.S. and world populations.
8. Epidemiologic aspects of infectious disease (variations in severity of illness, components of the infectious disease process, mechanism of disease transmission, and common source versus propagated).
9. Epidemiologic aspects of chronic disease (multi-factorial nature of etiology, long latency period, indefinite onset, and differential effect of factors on incidence and course of disease).

DETAILED LEARNING OBJECTIVES

The exams and other forms of assessment are made directly from these learning objectives. Please use them as a guide for what you need to know for the exams. Also, complete the Friss study guide question section for each chapter. By the end of each lesson, the student will be able to do the following listed below under each chapter and assignment.

Chapter 1 History and Scope of Epidemiology
1. Define the following terms and recognize an example of each: agent, determinants, epidemiology, epidemiology (genetic, molecular, social), epidemic, endemic, pandemic,
epidemic threshold, morbidity, mortality, population, qualitative, quantification, surveillance, Koch’s postulates.

2. Define and discuss the components of epidemiology (determinants, distribution, morbidity, mortality).

3. Name and describe the characteristics of the epidemiological approach.

4. Discuss the importance of Hippocrates’ hypothesis and how it differed from the common beliefs of the time.

5. Discuss Graunt’s contributions to biostatistics and how they affected modern epidemiology.

6. Discuss the significance of the Framingham Heart Study.

7. Discuss the contributions of John Snow to modern epidemiology.

6. Explain what is meant by the term natural experiment, and describe an example of the concept.

Chapter 2 Practical Applications of Epidemiology

1. Define the following terms and recognize and example of each: demographic transition, epidemiological transition, pathogenesis, prepathogenesis, risk, risk factors, causalit (strength of association, consistency upon repetition, specificity, time sequence, biologic gradient, plausibility, coherence of explanation, experiment, analogy) disease prevention (primary, secondary, tertiary).

2. Discuss uses and applications of epidemiology.

3. Discuss the influence of population dynamics on community health.

4. Explain how epidemiological methods may be used for operations research.

5. Discuss the clinical applications of epidemiology.

6. Discuss causal mechanisms from the epidemiological perspective.

Chapter 3 Measures of Morbidity and Mortality

1. Define the following terms and recognize and example of each: attack rate, count, incidence, proportion, proportional mortality ratio, rate (crude birth, fertility), ratio, prevalence, mortality rate (cause specific, infant, fetal, maternal, neonatal, postneonatal, perinatal), specific rates (cause, age), adjusted rates, population at risk.

2. Identify and calculate commonly used rates for morbidity, mortality, and natality.

3. Discuss incidence rates and prevalence.


5. Apply direct and indirect methods to adjust rates.

6. Identify situations where direct and indirect adjustments should be used.

Chapter 4 Descriptive Epidemiology: Person, Place, Time

1. Define the following terms and recognize and example of each: hypothesis, acculturation, statistics (descriptive, analytics), case (clustering, reports, series), cross-sectional studies, cyclic fluctuations, secular trends, spatial clustering, temporal clustering, point epidemic, cohort effects.

2. Identify and discuss the three primary objectives of descriptive statistics.

3. Discuss examples of the main subtypes of descriptive statistics.

4. List at least two characteristics each of person, place, and time, and provide a rationale for why they are associated with variations in health and disease.
5. Analyze the differences between descriptive and analytic epidemiology.
6. Describe the differences between secular trends and cohort effects.
7. Identify and discuss the three common ways of stating hypotheses (positive declaration/research hypothesis, negative declaration/null hypothesis, implicit question).
8. Identify and discuss Mill’s Canons (methods of difference, agreement, concomitant variation, residues).
9. Identify and discuss the three approaches to descriptive epidemiology (case reports, case series, cross-sectional studies).

**Chapter 4 Continued (Income, Poverty, Health Insurance)**
1. Define the following terms and recognize an example of each: income, poverty, health insurance, poverty level, poverty threshold, income to poverty ratio.
2. Identify the main government sources for income, poverty, and health insurance statistics.
3. Discuss what factors are associated with income and poverty statistics.
4. Discuss trends in income and poverty rates.
5. Compute income to poverty threshold.
6. Discuss what factors are associated with being uninsured.
7. Interpret income and poverty tables and graphs.

**Chapter 5 Sources of Data for Use in Epidemiology**
1. Define the following terms and recognize an example of each: HIPAA, record linkage, vital statistics (mortality, birth), reportable disease, disease registry, screening survey, SEER Program, mortality, morbidity.
2. Identify bibliographic databases for locating epidemiologic research literature.
3. Identify and discuss what types of data are available through US government sources.
4. Discuss criteria for assessing the quality and utility of epidemiologic data (nature of idea, availability of the data, representativeness or external validity, thoroughness, strengths vs. limitations).
5. Identify and analyze privacy and confidentiality issues related to epidemiologic data.
6. Examine the uses, strengths, and weaknesses of various epidemiologic data sources.
7. Locate sources of epidemiologic data available on the Internet.
8. Discuss how reportable diseases are reported to the Centers for Disease Control and Prevention.

**Chapter 6 Study Designs: Ecologic, Cross-Sectional, Case-Control**
1. Define the following terms and recognize an example of each: epidemiology (observational, experimental), study design (experimental, quasi-experimental, observational), 2 X 2 table, ecologic studies (ecologic comparison or cross-sectional ecologic, ecologic trend), ecologic fallacy, cross sectional study (prevalence study), probability sample, case, control group, measure of association, odds ratio, cohort.
2. Examine the differences between observational and experimental epidemiology.
3. Identify and discuss the main characteristics, advantages, and disadvantages of ecologic (data on group level) and cross-sectional, case-control, and cohort studies (data on individual level).
4. Calculate and interpret odds ratio.
Chapter 7 Study Designs: Cohort Studies
1. Define the following terms and recognize and example of each: cohort, temporality, cohort analysis, cohort effects, life table (cohort, period), survival curve, cohort studies (population-based, exposure-based, comparison, prospective, retrospective, ambispective, nested), relative risk, risk ratio, Framingham Heart Study, Honolulu Heart Program.
2. Differentiate cohort studies from other epidemiologic study designs.
3. Identify and discuss the main characteristics, advantages, disadvantages of cohort studies.
4. Describe at least three research questions that lend themselves to cohort studies.
5. Calculate and interpret a relative risk.

Chapter 8 Experimental Study Designs
1. Define the following terms and recognize and example of each: randomized controlled trial, clinical trial, community trial, random assignment, placebo, placebo effect, blind study (single, double, triple), clinical trial phases (I, II, III), cross over design, end point, surrogate markers, factorial design, matching, institutional review board (IRB), evaluation stages (formative, process, impact, outcome), quasi-experimental design (posttest only, pretest/posttest, pretest/posttest/control, Solomon Four-Group), Hawthorne effect.
2. Discuss how study designs compare with respect to validity of causal inference.
3. Distinguish between a controlled experiment and a quasi-experiment.
4. Describe the scope of intervention studies.
5. Discuss the phases of testing a new drug.
6. Discuss the role of randomization in controlled clinical trials.
7. Discuss the role of blinding in controlled clinical trials.
8. Analyze the general strengths and weaknesses of controlled trials.
9. Discuss at least two ethical issues associated with experimental studies.
10. Discuss the four stages of evaluation.

Chapter 9 Measures of Effect
TBA

Chapter 10 Data Interpretation Issues
TBA

Chapter 11 Screening for Disease in the Community
TBA

Chapter 12 Epidemiology of Infectious
TBA

Chapter 13 Epidemiologic Aspects of Work
TBA

Chapter 14 Molecular and Genetic
TBA

Chapter 15 Psychologic, Behavioral, and Social Epidemiology
Social Epidemiology

1. Define the following terms: social epidemiology, biological expressions of social inequality, discrimination, ecosocial theory of disease distribution, social capital, social cohesion, psychosocial epidemiology, social exclusion, poverty (human and income), deprivation, life course perspective, human rights, social justice, gender, sex, sexism.

2. Discuss the social epidemiology model.

3. Discuss the differences between traditional and social epidemiology.

4. Analyze a study involving social epidemiology.

5. Discuss how the lack of human rights and social justice affect health status.

Chapter 16 Epidemiology as a Profession

TBA

Assigned Readings

1. Discuss the major points of each article and apply the concepts to epidemiology.