Mel and Enid Zuckerman College of Public Health  
University of Arizona  

SYLLABUS  
EPID 646 Measurement Issues in Epidemiology  
Fall 2018

Credit hours: 3 semester hours  
Day/Time: 9:00-11:50 am Tuesday  
Location: A119 Drachman Hall  

Instructor: Leslie Dennis, MS, PhD, Professor  
1295 N. Martin  
Drachman Hall, A230  
Tucson, AZ 85724  
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l Dennis@email.arizona.edu

Office Hours: By Appointment via email  
(typically Tuesdays before 3pm, Wednesdays before 2pm, 1st & 2nd Fridays)

Teaching Assistant: None

Catalog Description: Overview of behavioral and environmental epidemiologic research and methods of collection of behavioral data. The methods examined will focus on exposure assessment. This hands-on part of the course includes questionnaire design, data collection, and descriptive analysis of variables. Class participants will apply their knowledge and skills to collecting and interpreting behavioral data.

Course Description: Aspects of exposure measurement in epidemiology including behavioral and environmental self-reported exposures such as diet, exercise, smoking and other substance use, and social support will be discussed. The application of design and measurement concepts, along with the use of problem solving skills to conduct epidemiological survey research will be a major focus. This will include discussion of use of focus groups, cognitive interviewing, and pilot studies that may use qualitative methods to assist in design of quantitative questionnaire items for obtaining information regarding behavior.

Course Pre- or Co- requisites:  
Epidemiology: Epidemiology 573A (Basic Principles in Epidemiology)  
Biostatistics: Epidemiology 576A (Biostatistics for Public Health) – or talk to instructor

Course Learning Objectives: Upon completion of this course students will be able to:  
1. Apply concepts to design a study that focuses on measurement of behavior and/or environmental exposures.  
2. Develop an appreciation for qualitative research & its use in epidemiology through discussions and experience.  
3. Develop a protocol to examine the reliability or validity of an exposure measure (biomarker or questionnaire).  
4. Develop problem solving skills through addressing complications in recruitment and data entry.
5. Identify aspects of data quality in epidemiologic studies (wording, grammar, formatting, data checking, coding, and creating new variables and documentation) and how such quality relates back to design of questions.
6. Identify sources of major behavior or environmental based surveys.

Learning Outcomes (Competencies Obtained):
Core MPH competencies that will be addressed during this course from the 22 CPEH required competencies include parts of 1-4.

MPH Epidemiology Program specific competencies covered in part include:
(4) Recognize and describe potential biases, confounding, and effect modification that can affect epidemiological studies and analyses.
(5) Interpret these epidemiological analyses in the context of published literature and communicate key findings to various audiences.

MS Epidemiology Program specific competencies covered in part include:
(2) Critique and synthesize appropriate literature and research findings to address a research question.
(4) Conduct descriptive and analytic analyses, including strategies to assess confounding and effect modification methods, to make statistical inferences.
(6) Demonstrate ability to manage and analyze epidemiological data from a variety of sources.
(7) Organize and deliver clear presentations of research findings in varying professional formats to diverse audiences.

PhD Epidemiology Program specific competencies covered in part include:
(2) Develop research questions to address health problems by appraising and identifying gaps in the current scientific literature.
(3) Design appropriate studies using causal inference principles for testing hypotheses in specific populations, after evaluating specific design advantages and limitations.
(4) Evaluate the integrity, comparability, and limitations of data to make inferences related to analyses and results.
(5) Lead group interactions competently, ethically, respectfully and professionally to diverse audiences.
(6) Organize and deliver clear presentations of research findings in varying professional formats to diverse audiences.

Course Notes: No course notes will be provided. Handouts and articles will be posted on D2L.

Readings:
Recommended Textbook:
Principles of Exposure Measurement in Epidemiology: Collecting, Evaluating and Improving Measures of Disease Risk Factors
by Emily White, Bruce K Armstrong, Rodolfo Saracci
Second Edition 2008
Available in paperback (~$71) or Kindle (~$63) from Amazon, Barnes & Noble, and others

Additional Required readings: Required articles will be posted on D2L.

Additional books one may want to purchase at some point in their career include:
Course Requirements:
Students are expected to attend each class and participate in class discussions. The smaller class size allows for a good deal of interaction. All assignments are required to be complete on or before the due date and are to be submitted via D2L prior to class period unless otherwise specified. Written assignments that are turned in late will result in a lower grade; the magnitude of the grade drop will depend on how late the assignment is turned in (20% reduction per week starting at the beginning of class).

Grading/Student Evaluation:
Grading Scale:  
- A: 90-100  
- B: 80-89.99  
- C: 70-79.99  
- D: 60-69.99  
- E: <60

1. Class Attendance & Participation = 50 points (~10%):
Each class period may have readings and/or assignments to be discussed in class. Students are expected to read all assigned papers and contribute significantly to discussions related to the readings, assignments and lecture. One point each day for attendance and two points for participations/discussion. The 2 extra attendance points will be given for attendance on Group Project Presentation Day (9/11/18).

Expectations for attendance and participation:
- Attendance is essential to hands-on learning
- Students are expected to notify the instructor in advance of an absence and have a legitimate excuse. Legitimacy is determined by the instructor. Professional meetings may be considered a legitimate excuse if the instructor is notified in the first 2 weeks of in the course and provisions are made to accommodate the absence.
- Absent students do not receive attendance/participations/discussion points for that day.
- Written assignments that are turned in late to D2L will result in a lower grade; the magnitude of the grade drop will depend on how late the assignment is turned in (20% reduction per week start after 9 am day of the class).

2. Assignments not related to the Class Project = 110 points (~22%):
- Assignments are meant to build and are discussed in class.
- Thus, in general, late assignments will not be accepted unless the class deadline is extended (1, 2, 3, 4, 5, 7, 11).
- Other written assignments that are turned in late to D2L will result in a lower grade; the magnitude of the grade drop will depend on how late the assignment is turned in (20% reduction per week).
- 175 points here include points not part of the class project (#1b, 1c, 2b, 4b, 7a, 7b, 8a, 8b, 9a, 11) or an individual draft related to the class project (#1a, 3b, #6).
- See Details Below

3. Class Project = 340 points (~68%):
- Class Projects can be done alone or in groups. Within groups the draft of the manuscript and the final manuscript can be done individually or as a group. Together this is 100 pts (~20% of the overall grade). This must be decided no later than Monday 10/29/18 by notifying the instructor. If not notified, the instructor will assume the manuscript will be submitted by the group.
• Most aspects of the Class Project are listed as Assignments to help track due dates. However, more in-depth details for instruction to complete aspects of the Class Project are listed under the Class Project.
• Deadlines for the class project are the latest deadline. However, if the Human Subjects forms can be submitted earlier that is to your benefit.
• If there is a problem with the project, such as related to Human Subjects, keep the instructor informed. Reasonable adjustments to deadlines will be made as necessary.
• Other written assignments that are turned in late to D2L will result in a lower grade; the magnitude of the grade drop will depend on how late the assignment is turned in (20% reduction per week).
• See Details Below

Assignments Overview - check D2L for more details on specific assignments
Other than presentations, homework Assignments should use Arial font size 11 or 12 (NIH requirement for grants), with one inch margins.
   On an additional page(s), cite all references using the reference format of the American Journal of Epidemiology.
   A minimum of 5 journal references (not websites or web journals or book chapters) in addition to any provided should be used in write-up. For each website reference you use, you will need to add an additional journal references. For example, if you choose to use 3 website references you must also have 8 relevant journal article references.
   Please make sure to follow these guidelines, not doing so will affect your grade. Each Assignment is due the day of the class period before the official start time of the class for which it is listed unless otherwise stated.

PowerPoint slide Presentation
Typically you should not have more than 7 lines per slide since slides need to be viewable in the back of the room. Use large fonts. You do not want text going to the edge of the slide as some projectors cut the edges off. But you also do not want to put 7 small lines in the middle of a slide with lots of “white space”. Try to find a balance.
   Beware of using red, it can be an annoying background and red font does not project well. Also, background objects (appearing on all slides) can be distracting, however, pictures, diagrams or graphs can enhance a slide and make it more interesting.

Required Statements:

Communications: You are responsible for reading emails sent to your UA account from your instructor and the announcements that are placed on the course web site. Information about readings, news events, your grades, assignments and other course related topics will be communicated to you with these electronic methods. The official policy can be found at: https://www.registrar.arizona.edu/personal-information/official-student-email-policy-use-email-official-correspondence-students

Accessibility and Accommodations:
At the University of Arizona, we strive to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, you are welcome to let me know so that we can discuss options. You are also encouraged to contact Disability Resources (520-621-3268) to explore reasonable accommodation. If our class meets at a campus location: Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable. For additional information on Disability Resources and reasonable accommodations, please visit http://drc.arizona.edu/students
Code of Academic Integrity
Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercise must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity, available through the office of the UA Dean Students: http://deanofstudents.arizona.edu/policies-and-codes/code-academic-integrity

Classroom Behavior: Expected behavior is to allow for respectful exchange of ideas: these include being respectful towards your fellow student and instructor(s) when communicating via Discussion boards and email. Students are expected to be familiar with the UA Policy on Disruptive Student Behavior in an Instructional Setting found at: http://policy.arizona.edu/education-and-student-affairs/disruptive-behavior-instructional-setting

Threatening Behavior Policy: The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to one’s self, http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students

Nondiscrimination and Anti-Harassment Policy:
The University of Arizona is committed to creating and maintaining an environment free of discrimination, http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy

UA Smoking and Tobacco Policy:
The purpose of this Policy is to establish the University of Arizona’s (University) commitment to protect the health of University faculty, staff, students, and visitors on its campuses and in its vehicles, http://policy.arizona.edu/ethics-and-conduct/smoking-and-tobacco-policy

Syllabus Changes: Information contained in the course syllabus, other than the grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate by the instructor.

Plagiarism: Plagiarism can occur when a student copies text word-for-word (direct quoting should rarely be used in epidemiology) instead of paraphrasing and correctly referencing materials used for preparing a written assignment. This includes fictitious or incorrect references. If plagiarism is detected on an assignment, it will result in automatic failure for that assignment.

A second offense or plagiarism of the final manuscript will result in automatic course failure. All these actions will be reported to the Program Director, the Dean of the College of Public Health, and the Dean of Students. This policy is in place for this class because scientific writing is a fundamental skill at both the undergraduate and graduate level in this field, and for this course. If you feel you are unsure as to what might constitute plagiarism, there are numerous resources at the University of Arizona, including the writing lab, to help you understand and avoid plagiarism.

Plagiarism & Cheating: What counts as plagiarism or cheating?
• Copying and pasting information from a website or another source.
• Copying and pasting information from a website or another source, and then revising it so that it sounds like your original idea.
• Doing an assignment/essay/take home test with a friend and then handing in separate assignments that contain the same ideas, language, phrases, etc.
• Asking someone else the answers to the assignments then using those answers.
• Quoting a passage without quotation marks or citations, so that it looks like your own.
• Paraphrasing a passage without citing it, so that it looks like your own.
• Hiring another person to do your work for you, or purchasing a paper through any of the on- or off-line sources.
The Epidemiology Program faculty members reserve the right to check assignments or papers with TurnItIn for plagiarism.

**Classroom civility:** In this interactive course it is expected that students and the instructor will:
- a. use respect (including disagreeing respectfully) both when posting and responding to posts
- b. listen to discussions/posts and involve others
- c. resist the temptation to dominate discussion by waiting for others to contribute
- d. consider everyone’s opinions to be “valid” or at least interesting or a reference point for examining one’s own opinions; allow thinking broadly, “outside the box”
- e. appreciate a small amount of tension (too much “sameness” means dull discussion)
- f. stay focused on the subject (anyone can raise the possibility that discussion is getting too tangential, that too much time is being spent on a small issue, that other issues are being neglected. Others can challenge this and defend spending more time.)

**Recommended Learning Strategies**
To be an effective learner in this course the following are strongly encouraged:
1. Continuously monitor the course outline. The course outline includes all deadlines for the course. Do not expect to be reminded of any of the due dates on the course outline. Unless otherwise notified, students are accountable for meeting all deadlines as listed on the outline.
2. Check the course website regularly for announcements.
3. Read all recommended readings.
4. Participate in class discussion.
5. Ask questions.
6. Answer questions.
7. Use the discussion boards.
8. Listen to your classmates; their insights are an important source of learning in this course. A general rule of thumb is to let at least two other people have a chance to say something before you speak again.