

**University of Florida College of Public Health and Health Professions
PHC 6011: Epidemiology Methods II**

Instructor: TBA

Course web site (readings, postings):

<http://www.php.ufl.edu/courses/phc6011/>

Username: TBA

Password: TBA

Description: This course extends the concepts and methods of epidemiology from PHC 6000 (Epidemiology Methods I). Hands on analytic methods in epidemiology is the primary emphasize of the class. Students will learn to form a sound epidemiologic research question; thoroughly review and understand the research on the question, to date; and propose, analyze, and interpret the findings from a population-based dataset. The goal of this class is to provide a foundation in applied epidemiological analysis and experience in peer-review productivity based on secondary data analysis.

Prerequisites: PHC 6000 and STA 6207 or PHC 6052 or the equivalent. This class assumes an advanced competency with epidemiology principles and vocabulary.

Course Objectives: Students will be able to:

- Compose a researchable scientific hypothesis based on surveillance data.
- Conduct a literature search and provide the rationale and existing science for a scientific analysis of data.
- Submit an IRB application for secondary data analysis.
- Understand and apply the principles of multivariate analytic epidemiology.
- Critically appraise published research studies for their strengths and weaknesses.
- Interpret, apply, and analyze data regarding measures and measurements, error, confounding and effect modification, sampling, and research generalizability.
- Communicate epidemiology research in writing and orally.

Text/Readings:

I require both 1 and 2 of the following textbooks to augment the material in this class. Text 3 is also a useful reference that is not required, but recommended.

1. Koepsell TD, Weiss NS. *Epidemiologic methods. Studying the occurrence of illness*. New York: Oxford University Press, 2003.
2. Kleinbaum DG. *Logistic Regression: A self-learning text* (2nd Ed). Springer-Verlag, Inc., 2003.
3. Selvin S. *Statistical analysis of epidemiologic data*. New York, Oxford University Press, 1996.

Readings also will be assigned from historical or current scientific research literature. Students will receive paper copies or be asked to read the posted web-site .pdf file of these

articles. Readings will be posted when assigned, e.g., the week before they are due (or earlier). Class notes will be distributed at the beginning of each session, and will not be posted on the web. Students will need to acquire the analysis software program *SPSS* or be prepared to use the PHHP licenses for this program. You should plan to bring your laptop for all sessions.

Course Format: We will combine different learning techniques in this class. There will be didactic lectures on research and analysis techniques, for which you may be assigned readings. Several specific written products are required during the semester, progressing through formation of a research question, literature review and methods proposals, and draft and final research papers.

Course project: using national cross-sectional data from the Behavioral Risk Factor Surveillance System (BRFSS), or multi-year data from the Florida BRFSS, students will a) propose a testable hypothesis, b) review the literature for this area, c) analyze the data, d) present the results in-class, and e) write-up the results in the format of a scientific journal article. All research projects are subject to IRB approval.

Requirements: Students are responsible for all course material, including reading all required materials prior to each class. Failure to complete ANY assignment (draft and interim written reports, in-class presentation, final paper) will result in a failing grade.

Grading: The grading scale for this course consists of the standard scale below:

90% - 100% = A	70% -74.9%= C
85% -89.9%= B+	65% -69.9%= D+
80% -84.9%= B	60% - 64.9%= D
75% -79.9%= C+	Below 60.9%=E

Grading Methods: The assessment will include written and oral progressive products on the research paper that forms the final product of the class, and class participation.

One-page statement of scientific question and hypothesis = 5%
Literature review = 15%
Preliminary study results = 15%
Draft final paper = 15%
Oral presentation of study = 15%
Final research paper = 30%
Class participation = 5%

Class participation assessment will include attendance and participation in discussions.

Communicating epidemiology well is one of the goals of this class. In work, the clarity of language to explain your thoughts will be included in the comments and oral presentation ability and writing will be part of the final grade. Students are urged to learn and use a word processor for all submitted written work, and to use Microsoft Power Point for their final presentation. The practice of epidemiology is enhanced by clear communication and because this is a graduate school course, competent writing *is part of the grade*.

Feedback on Assignments: Timely feedback on assignments is needed in order to assure that students are aware of their progress. For each interim written product, feedback will be provided on the next weekly scheduled session. Feedback on the oral presentation will be provided as part of the Q&A at that time, and a summary provided within two weeks after the last class session. Final papers will be returned with comments within one week of the end of class.

Classroom etiquette: Please come to class on time and be prepared to stay until the time scheduled as the end of class. I think your investment in the degree is worth my maximizing your in-class experience, and I usually provide materials that extend the full, scheduled class times. Pagers and cell phones should not be used in class. The use of cell phones, text messaging, and pagers is one of the most common complaints I have from students in recent years. Please turn them off. Or, if you expect urgent calls, set them to “vibrate.” The second most common complaint I have received during ten years of teaching is “side” conversations among students. Unless your conversation is a quick one, please consider that your conversation may interrupt the attention of someone seated near you. I welcome in-class questions. If you have trouble getting my attention during a vigorous in-class discussion, raise your hand and/or use a loud voice. Your question will nearly always be one that other students also have. Your questions will help me in that session, or to assess what kinds of issues and examples I should research and bring to class in the next session (or in future iterations of the class).

Academic Integrity: Each student is bound by the academic honesty guidelines of the University and the student conduct code printed in the Student Guide and on the University website. The Honor Code states: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” Cheating or plagiarism in any form is unacceptable and inexcusable behavior.

Policy on Style for Citation and Plagiarism:

The two key purposes of citation are to 1) give appropriate credit to the authors of information, research findings, and/or ideas (and avoid plagiarism) and 2) facilitate access by your readers to the sources you use in your research. In this class, you will be preparing a critique on one epidemiology study article, and it does not require referencing. In fact, direct quotation will not be a positive method of writing the literature critique. However, the issue of citation and plagiarism may be relevant now, and certainly in the future, so I include a discussion here. It is your responsibility to read the policy and ask questions if you do not understand the policy or have specific concerns or question.

Quotations: When directly quoting an outside source, the borrowed text, regardless of the amount, must be surrounded by quotation marks or block quoted. Quoted text over two lines in length should be single-spaced and indented beyond the normal margins. Every quote must include a source—the author, title, volume, page numbers, etc.—whether an internal reference, footnote, or endnote is used in conjunction with a bibliography page.

Paraphrasing or Citing an Idea: When summarizing an outside source in your own words or citing another person’s ideas, quotation marks are not necessary, but the source must be included. This includes, but is not confined to, personal communications from other students, faculty members, experts in the field, summarized ideas from published or unpublished resource,

and primary methods derived from published or unpublished sources. Use the general concept of “when in doubt – cite.”

Plagiarism is a serious violation of the academic honesty policy of the College. If a student plagiarizes others’ material or ideas, he or she may receive an “E” in the course. The faculty member may also recommend further sanctions to the Dean, per College disciplinary action policy. Generally speaking, the three keys of acceptable citation practice are: 1) thoroughness, 2) accuracy, and 3) consistency. In other words, be sure to fully cite all sources used (thoroughness), be accurate in the citation information provided, and be consistent in the citation style you adopt. All references should include the following elements: 1) last names along with first and middle initials; 2) full title of reference; 3) name of journal or book; 4) publication city, publisher, volume, and date; and 5) page numbers referenced. When citing information from the Internet, include the WWW address at the end, with the “access date” (i.e., when you obtained the information), just as you would list the document number and date for all public documents. When citing ideas or words from an individual that are not published, you can write “personal communication” along with the person’s name and date of communication. Typical formats for citing references and books can be found in the *American Journal of Public Health*.

Class Attendance: Class attendance is mandatory. Excused absences follow the criteria of the UFL Graduate Catalogue (e.g., illness, serious family emergency, military obligations, religious holidays), and should be communicated to the instructor prior to the missed class day when possible. UFL rules require attendance during the first two course sessions, and students also must attend all course sessions of student presentations for this class. Missing more than three scheduled sessions will result in a failure (counting Mondays with two class hours as a session). Regardless of attendance, students are responsible for all material presented in class and meeting the scheduled due dates for class assignments. Finally, students should read the assigned readings prior to the class meetings, and be prepared to discuss the material except for the first class session.

Policy on Make-Up Work: Students are allowed to make up work ONLY as the result of illness or other unanticipated circumstances warranting a medical excuse and resulting in the student missing a homework or project deadline, consistent with College policy. Documentation from a health care provider is required. Work missed for any other reason will receive a grade of zero.

Accommodations for Students with Disabilities: Students requiring accommodations must first register with the Dean of Students' Office. The Dean of Students' Office will provide documentation to the student who must then provide this documentation to the faculty member when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their coursework. We all learn differently: however, if you have experienced problems in university classes with writing, in-class exams, understanding or concentrating in class, please talk to me or access a learning or education testing resource at the University or in another professional setting.

Course Outline: Paper copies of required readings (or electronic versions) will be distributed or posted prior to each session. Course meets for three 50-minute sessions on one day each week during the semester.

Week 1: Course and BRFSS overview, IRB issues, and formation of a scientific hypothesis

Week 2: Building a dataset for analysis – measures, classifications, and parsimony in variable selection.

IRB certification due

Week 3: Literature searching, review, and selecting quality referent studies.

Scientific question and hypothesis due

Week 4: Case-control studies.

Literature review due

Week 5: Descriptive analyses, and examination of covariates for associations with exposure and outcome

Initial dataset construction due for discussion in class

Week 6: Initial model building – Odds ratios and effect sizes

Table 1 (descriptive) data due

Week 7: Assessment of effect modification/interaction

Week 8: Preliminary model building results (in class discussion of all projects)

Week 9: Refined models and interpretation

Logistic regression tables due and first draft of results

Week 10: Measurement error – interpretation of measures, variables, and effects

Week 11: In-class discussion of multivariate modeling problems and solutions

Week 12: Setting the scene with prior studies – is there reason for determining consistency?

Full paper draft due

Week 13: Graphical presentation of results

Week 14: Student presentations

Week 15: Student presentations.

EPIDEMIOLOGY READINGS and BRFSS analysis examples.

Andresen EM, Catlin T, Wyrwich K, Jackson-Thompson J. Retest reliability of surveillance questions of health related quality of life. *J Epidemiol Comm Health* 2003;57(5):339-343.

Andresen EM, Diehr P, Luke DA. Public health surveillance of low-frequency populations. *Annu Rev Public Health* 2004:25-52.

Andresen, E. M., A. Prince-Caldwell, et al. (1999). "The Missouri Disability Epidemiology and Health Project." *American Journal of Preventive Medicine* 16(3 Suppl): 63-71.

- INTRODUCTION: Estimates of disability in this country are as high as 20%.
- Anonymous (1994). "Quality of life as a new public health measure--Behavioral Risk Factor Surveillance System, 1993." *MMWR - Morbidity & Mortality Weekly Report* 43(20): 375-80.
- Anonymous (1996). "Factors associated with self-perceived excellent and very good health among Blacks--Kansas, 1995." *MMWR - Morbidity & Mortality Weekly Report* 45(42): 906-11.
- Anonymous (1998). "Self-reported frequent mental distress among adults--United States, 1993-1996." *MMWR - Morbidity & Mortality Weekly Report* 47(16): 326-31.
- Anonymous (1998). "Use of clinical preventive services by adults aged <65 years enrolled in health-maintenance organizations--United States, 1996." *MMWR - Morbidity & Mortality Weekly Report* 47(29): 613-9.
- Anonymous (1999). "Physician advice and individual behaviors about cardiovascular disease risk reduction--seven states and Puerto Rico, 1997." *MMWR - Morbidity & Mortality Weekly Report* 48(4): 74-7.
- Anonymous (1999). "Screening for colorectal cancer--United States, 1997." *MMWR - Morbidity & Mortality Weekly Report* 48(6): 116-21.
- Anonymous (2000). "Self-Reported Concern about Food Security--Eight States, 1996-1998." *MMWR-Morbidity and Mortality Weekly Review* 49(41): 933-936.
- Anonymous,. (2000). "Health-related quality of life among adults with arthritis--Behavioral Risk Factor Surveillance System, 11 states, 1996-1998." *JAMA* 283(21): 2783-2785.
- Blackman, D. K., E. M. Bennett, et al. (1999). "Trends in self-reported use of mammograms (1989-1997) and Papanicolaou tests (1991-1997)--Behavioral Risk Factor Surveillance System." *Morbidity & Mortality Weekly Report. CDC Surveillance Summaries* 48(6): 1-22.
- Brownson, R. C., A. A. Eyler, et al. (1999). "Reliability of information on physical activity and other chronic disease risk factors among minority women, United States." *American Journal of Epidemiology* 149(4): 379-91.
- Brownson, R. C., J. Jackson-Thompson, et al. (1994). "Reliability of information on chronic disease risk factors collected in the Missouri Behavioral Risk Factor Surveillance System." *Epidemiology* 5(5): 545-9.
- Brownson, R. C., J. C. Wilkerson, et al. (1993). "Trends and projections in selected chronic disease risk factors in Missouri, 1986-2000." *Missouri Medicine* 90(1): 17-20.
- Campbell, V. A., J. E. Crews, et al. (1999). "Surveillance for sensory impairment, activity limitation, and health-related quality of life among older adults--United States, 1993-1997." *Morbidity & Mortality Weekly Report. CDC Surveillance Summaries* 48(8): 131-56.
- CDC, (2001). "Health-related quality of life--Los Angeles County, California, 1999." *MMWR Morb Mortal Wkly Rep* 50(26): 556-559.
- Centers for Disease Control (CDC) (1996). "Factors associated with prevalent self-reported arthritis and other rheumatic conditions--United States, 1989-1991." *MMWR Morbidity & Mortality Weekly Report* 45(23): 487-91.
- Centers for Disease Control and Prevention (1998). "Health-related quality of life and activity limitation--eight states, 1995." *MMWR - Morbidity & Mortality Weekly Report* 47(7): 134-40.
- Cloutier, S., S. Martin, et al. (2002). "Sexual Assault Among North Carolina Women: Prevalence and Health Risk Factors." *Journal of Epidemiology and Community Health* 56: 265-271.

- Coker, A. L., R. E. McKeown, et al. (2000). "Severe Dating Violence and Quality of Life Among South Carolina High School Students." *American Journal of Preventive Medicine* 19(7): 220-227.
- Crews J and C. V (2000). "State-specific prevalence of disability among adults---11 states and the District of Columbia, 1998." *Morbidity and Mortality Weekly Review* 49(31): 711-714.
- Dixon N. Writing for publication – a guide for new authors. *Intl J Qual Health Care* 2001;13(5):417-421
- Faulkner, L. A. and H. H. Schauffler (1997). "The effect of health insurance coverage on the appropriate use of recommended clinical preventive services." *American Journal of Preventive Medicine* 13(6): 453-458.
- Ford, E., D. Moriarty, et al. (2001). "Self-Reported Body Mass Index and Health-Related Quality of Life: Findings from the Behavioral Risk Factor Surveillance System." *Obesity Research* 9(1): 21-31.
- Fouts, B. S., E. M. Andresen, et al. (2000). "Disability and satisfaction with access to health care." *J Epidemiol Comm Health* 54(10): 770-771.
- Freedman, D., L. Khan, et al. (2002). "Trends and Correlates of Class 3 Obesity in the United States from 1990 through 2000." *Journal of the American Medical Association* 288(14): 1758-1761.
- Gentry, E. M., W. D. Kalsbeek, et al. (1985). "The behavioral risk factor surveys: II. Design, methods, and estimates from combined state data." *American Journal of Preventive Medicine* 1(6): 9-14.
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- Gilliland, F. D., R. Mahler, et al. (1998). "Health-related quality of life for rural American Indians in New Mexico." *Ethnicity & Health* 3(3): 223-9.
- Gilliland, F. D., R. Mahler, et al. (1999). "Preventive health care among rural American Indians in New Mexico." *Preventive Medicine* 28(2): 194-202.
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- Greenlund, K. J., W. H. Giles, et al. (1998). "Prevalence of multiple cardiovascular disease risk factors among women in the United States, 1992 and 1995: the Behavioral Risk Factor Surveillance System." *Journal of Womens Health* 7(9): 1125-33.
- Hagdrup, N. A., E. J. Simoes, et al. (1997). "Health care coverage: traditional and preventive measures and associations with chronic disease risk factors." *Journal of Community Health* 22(5): 387-399.
- Hagdrup, N. A., E. J. Simoes, et al. (1997). "Selected chronic disease risk factors in Missouri: 10-year trends and predictions for the year 2000." *American Journal of Preventive Medicine* 13(6 Suppl): 45-50.
- Harwell, T. and M. Spence (2000). "Population Surveillance for Physical Violence Among Adult Men and Women, Montana 1998." *American Journal of Preventive Medicine* 19(4): 321-324.
- Hathaway, J. E., L. A. Mucci, et al. (2000). "Health status and health care use of Massachusetts women reporting partner abuse." *Am J Prev Med* 19(4): 302-307.
- Kinne S, P. D., Doyle DL (2004). "Prevalence of Secondary Conditions Among People with Disabilities." *American Journal of Public Health* 94(3): 443-445.

- Krause, J. S., J. Coker, et al. (1999). "Health behaviors among American Indians with spinal cord injury: comparison with data from the 1996 Behavioral Risk Factor Surveillance System." *Archives of Physical Medicine & Rehabilitation* 80(11): 1435-40.
- Lindquist, C., W. C. Cockerham, et al. (1999). "Drinking patterns in the American Deep South." *Journal of Studies on Alcohol* 60(5): 663-6.
- Mokdad, A., E. Ford, et al. (2003). "Prevalence of Obesity, Diabetes, and Obesity-Related Health Risk Factors, 2001." *Journal of the American Medical Association* 289(1): 76-79.
- Newschaffer, C. J. (1998). Validation of the BRFSS HRQOL measures in a statewide sample. Atlanta, GA, US Department of Health and Human Services, Centers for Disease Control and Prevention.
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- CDC. (1999). "Surveillance for Five Health Risks Among Older Adults-United States, 1993-1997." *Morbidity and Mortality Weekly Report (MMWR)* 48(SS-8): 89-130.
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- Shea, S., A. D. Stein, et al. (1991). "Reliability of the behavioral risk factor survey in a triethnic population." *American Journal of Epidemiology* 133(5): 489-500.
- Siegel, P. Z., R. M. Brackbill, et al. (1991). "Behavioral risk factor surveillance, 1986-1990." *Morbidity & Mortality Weekly Report. CDC Surveillance Summaries* 40(4): 1-23.
- Simoes, E. J., C. J. Newschaffer, et al. (1999). "Predictors of compliance with recommended cervical cancer screening schedule: a population-based study." *Journal of Community Health* 24(2): 115-30.
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