COURSE DESCRIPTION
This course provides instruction in the design, evaluation, and implementation of cross-sectional and longitudinal research designs. It is an advanced methods course focused on details of various epidemiology research designs. This course is designed for advanced masters-level and doctoral-level students in Medicine, Public Health, and other health professions, as well as advanced students in public policy, sociology, psychology or other social sciences with plans for a career in research. Prerequisites are a graduate course in epidemiology, a graduate course in statistics, and permission of instructor.

COURSE OBJECTIVES
By the end of this course, the student should be able to:
1. Explain key concepts in cross-sectional and longitudinal research designs.
2. Identify the appropriateness of cross-sectional and longitudinal designs to address specific research questions.
3. Identify and evaluate strengths and weaknesses of cross-sectional and longitudinal research designs with respect to threats to internal and external validity.
4. Discuss methodological issues associated with the selection and implementation of research designs (e.g. measurement, internal and external validity, causality, attrition, bias, analysis of change over time, repeated measures designs, intensive longitudinal designs, etc.).
5. Critique epidemiological research in different areas of substantive interest by describing strengths and weaknesses of design choices made by published investigations.
6. Discuss methodological considerations in modeling longitudinal data (e.g. repeated measures, nested, multilevel, and other analytical approaches to the study of epidemiological data).
7. Evaluate and critique interdisciplinary research studies by identifying conceptual, sampling, measurement, research design, and data analytical considerations.
8. Demonstrate awareness of statistical considerations in analysis of data from cross-sectional to intensive longitudinal research designs.

METHODS OF INSTRUCTION:
Each class session will include two components: a presentation of a major topic for about half the session, and class discussion of the presentation and readings. Attendance and active participation in all class discussions is required, and will be evaluated as part of the student’s grade for the course. Students must read the required readings prior to each class session. This course is a graduate seminar where students are expected to take an active role in initiating and leading discussions and debates.
TESTS
No midterm or final exam will be required in this course.

TERM PAPER
No term paper will be required.

REQUIREMENTS
There are four requirements:
• E-learning discussion (30%)
• Paper Critique (25%)
• Research Project (25%)
• Participation (20%)

Note: See descriptions of the assignments on page 5.

EVALUATION AND GRADING
Grades will be based on attendance and class participation and assignments above. All deadlines must be met. Any assignment turned within 24 hours after the deadline will receive one grade below what it would have earned had it been submitted on time. After 24 hours, no assignments will be accepted (unless extraordinary circumstances). The following grading system will be use: A (95-100), A- (90-94), 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), E (59 or below).

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. 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 for each session.

E-Learning
Course information, readings, and grades are available on E-Learning at http://lss.at.ufl.edu/. You must have a Gatorlink account to log on. To use the system, please make sure to:
• Check if your browser settings are properly configured. Use the “E-Learning Browser Tuneup” link from the main page under “E-Learning Resources”
• Disable pop-up blockers. Vista takes advantage of pop-up windows to deliver content.
• Make sure that the Java system on your computer is from Sun Microsystems. Vista does not use Java from Microsoft. Without Java, certain tools in Vista will not function correctly. You can do a check on your Java status from the main page under “E-Learning Resources.”
• Have Adobe Acrobat Reader installed.

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.

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.

**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.
SCHEDULE OF TOPICS

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<td>Introduction &lt;br&gt;Frameworks to study change &lt;br&gt;Ethical considerations in longitudinal research</td>
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<td>2</td>
<td>09/4/12</td>
<td>Measurement &lt;br&gt;Reliability and Validity &lt;br&gt;Cohort Studies</td>
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<tr>
<td>3</td>
<td>09/11/12</td>
<td>Stability and Change &lt;br&gt;Temporal Design &lt;br&gt;Panel Analysis &lt;br&gt;Proposal Development</td>
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<td>4</td>
<td>09/18/12</td>
<td>Tracking, Non-response, Data Collection &lt;br&gt;Time-series &lt;br&gt;Mid-Course Evaluation</td>
<td>Tobler (1-3pm) &lt;br&gt;Delcher (3-5pm)</td>
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<td>5</td>
<td>09/25/12</td>
<td>Sampling &lt;br&gt;Missing data &lt;br&gt;Power Analysis</td>
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<td>10/2/12</td>
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<td>10/9/12</td>
<td>Repeated Measures &lt;br&gt;Intensive Longitudinal</td>
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<td>10/16/12</td>
<td>Proposal presentations &lt;br&gt;Course-Wrap-up</td>
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TEXTBOOK

There is no required textbook. The following are optional reference books.


ASSIGNED READINGS/COURSE MATERIALS:

Available in E-learning: [http://lss.at.ufl.edu/](http://lss.at.ufl.edu/).
ASSIGNMENTS

1. **E-learning online discussion - Due: Every week (a minimum of 3 online posts)**
   Every week, a minimum of three posts are required. At least two posts are due before 10am the day of the class. One discussion post after class discussion is also required. The purpose is to encourage discussion and integration of the readings (and not to summarize readings or scientific papers). Questions, reactions, or applications of the material to your area of interest are highly encouraged.

2. **Paper Critique - Due: September 18, 2012**
   Choose a paper from a published longitudinal study in your area of interest. You should focus on integrating the material discussed in class, with special emphasis to research design issues. Your 2-page (single-spaced) critique should include:
   1. Development and statement of research questions
   2. Identification of threats to validity and description of sampling and measurement
   3. Description of the research design
   4. Description of weaknesses and strengths of the longitudinal research design
   5. Description of the appropriateness of the analytical technique

3. **Research project**
   This assignment consists of three sections:

   3.1 **Research question - Due: September 11, 2012**
   In 1-page (single-spaced), answer the following questions:
   1. Describe an area of research interest and why this is an important public health problem.
   2. Identify an outcome (dependent variable). Why is longitudinal research important to study of this outcome?
   3. Identify 2-3 research questions that you can address with a longitudinal research design that you would not be able to address with a cross-sectional design.
   4. When and how often should we measure your outcome of interest?

   3.2: **Research plan - Due: October 9, 2012**
   Develop a research plan that clearly states a research question, research design plan, analytical strategy, and limitations of proposed study. The research project will be 4-5 pages single-spaced. Your proposal should include:
   1. Clarity of research question, specific aims, and hypothesis
   2. Detailed research plan
      a. Measurement
      b. Research design
      c. Analytical strategy
   3. Identify weaknesses and strengths of proposed design

   3.3: **Critique and Presentation - DUE: October 16, 2012**
   Students will be assigned a proposal to review. Your task is to evaluate the proposal and to present to the class a review of your assigned proposal. After the presentation, we will engage in a collegial discussion. Your presentation should include the following:
   1. Evaluate clarity of specific aims, research questions, and hypothesized relations
   2. Evaluate significance and innovation of proposed study
   3. Describe and evaluate the research design (measurement and sampling)
   4. Description of weakness and strengths of proposed project as well as suggestions on how to improve the research proposal
   5. Provide recommendations
   6. Time-management (5 minutes!)