UNIVERSITY OF KENTUCKY
APPLICATION FOR CHANGE IN EXISTING COURSE: MAJOR & MINOR

1. Submitted by College of Medicine ____________________________ Date December 12, 2001
Department/Division offering course Preventive Medicine

2. Changes proposed:
(a) Present prefix & number PM 621 Proposed prefix & number SAME
(b) Present Title Topics in Advanced Epidemiology
   New Title Advanced Epidemiology
(c) If course title is changed and exceeds 24 characters (Including spaces), include a sensible title (not to exceed 24 characters) for use on transcripts:
   Advanced Epidemiology
(d) Present credits: 3 Proposed credits: 3
(e) Current lecture: laboratory ratio ___________________________ Proposed: ___________________________
(f) Effective Date of Change: (Semester & Year) Fall 2003

3. To be Cross-listed as: SPH 611

4. Proposed change in Bulletin description:
(a) Present description (including prerequisite(s):
   SAME
(b) New description:
(c) Prerequisite(s) for course as changed: Please change from PM 521 to SPH 605 or consent of instructor.

5. What has prompted this proposal?
   This course is a option in the MPH degree program. Cross-listed in SPH and prerequisite change is requested. A title change is requested to clarify the level and content.

6. If there are to be significant changes in the content or teaching objectives of this course, indicate changes:

7. What other departments could be affected by the proposed change?
   None

8. Will changing this course change the degree requirements in one or more programs?*  □ Yes  ✗ No
   If yes, please attach an explanation of the change.*

9. Is this course currently included in the University Studies Program?  □ Yes  ✗ No
   If yes, please attach correspondence indicating concurrence of the University Studies Committee.

10. If the course is a 100-200 level course, please submit evidence (e.g., correspondence) that the Community College System has been consulted.

*NOTE: Approval of this change will constitute approval of the program change unless other program modifications are proposed.
11. Is this a minor change?  ☑ Yes  ☐ No
   (NOTE: See the description on this form of what constitutes a minor change. Minor changes are sent directly from the Dean of the College to the Chair of the Senate Council. If the latter deems the change not to be minor, it will be sent to the appropriate Council for normal processing.)

12. Within the Department, who should be consulted for further information on the proposed course change?
   Name: F. Douglas Scutchfield, M.D./ Joel Lee, Dr.P.H., SPH  Phone Extension: 257-5624 / 323-5059 x285

   Signatures of Approval:

   ___________________________________________  ____________________________
   Department Chair  ________________________

   ___________________________________________  ____________________________
   Dean of the College  ________________________

   ___________________________________________  ____________________________
   **Undergraduate Council  ________________________

   ___________________________________________  ____________________________
   **Graduate Council  ________________________

   ___________________________________________  ____________________________
   **Academic Council for the Medical Center  ________________________

   ___________________________________________  ____________________________
   **Senate Council  ________________________

   **If applicable, as provided by the Rules of the University Senate.

   ________________________________  ____________________________
   Date of Notice to the Faculty  ____________________________

   ________________________________  ____________________________
   Date of Notice to University Senate  ____________________________

   ***ACTION OTHER THAN APPROVAL***

   The Minor Change route for courses is provided as a mechanism to make changes in existing courses and is limited to one or more of the following:

   a. change in number within the same hundred series;
   b. editorial change in description which does not imply change in content or emphasis;
   c. editorial change in title which does not imply change in content or emphasis;
   d. change in prerequisite which does not imply change in content or emphasis;
   e. cross-listing of courses under conditions set forth in item 3.0;
   f. correction of typographical errors. [University Senate Rules, Section III - 3.1]

   Rev 11/98
SPH 910/PM621: Topics in Advanced Epidemiology - Fall 2002

Time:  6-8:30 p.m. Monday
Place:  502A/CHS 115

Course Instructor:  Steven T. Fleming, Ph.D.
CAHP Building Room 113C
(606) 323-1100 ext. 276 (Phone: Health Services Management Office)
(606) 323-1100 ext. 279 (Phone: Work-Office)
Office Hours: (Tuesday and Thursday 8:30-4:30 by appointment)

COURSE REQUIREMENTS

1.  Two examinations 25% (each exam)
2.  Critical appraisal of study 25%
3.  Discussion/weekly reading 25%
4.  All exams will cover both lecture material and readings from the text. Any student who misses a class session is responsible for obtaining notes or other handout materials from a fellow classmate. No make-up exams will be given unless arrangements are made with the instructor in advance of the scheduled exam. Any student who fails to take a scheduled exam without making prior arrangements with the instructor in advance of the exam will receive a "0" for the scheduled test. This same policy will be applied to exercises and special projects.
5.  Each student is expected to complete a critical appraisal of a case-control, cohort, or randomized clinical trial.
6.  Each student is expected to participate in class discussions each week by reading and discussing at least one article relating to the subject

COURSE TEXT


COURSE DESCRIPTION

This course provides students with an understanding of issues associated with determining causality. Specific readings and discussion will focus on study designs and their limitations, sources of data and their limitations. Selection of subjects, confounding and methods of controlling for confounding, chance variation, meta analysis, and a systematic approach to evaluating epidemiologic evidence as it relates to demonstrating causality. The course will be taught as a seminar and discussion of each topic is encouraged.
Students will, upon examination, be able to:

1. Describe the concept of causal relationships in medicine and health care
2. Differentiate between the various study designs with can demonstrate causality
3. Describe the kinds of results that are obtained from each study design
4. Explain how subjects are selected into each kind of study and the kinds of problems can occur in this process
5. Describe the sources and assessment of error and bias in observation
6. Describe confounding and how it can be controlled
7. Explain how chance variation is a non-causal explanation of an association
8. Describe the process and limitations of meta-analysis
9. Describe how causation can be diagnosed in randomized clinical trials, case-control, and cohort studies

ACADEMIC DISHONESTY

Academic honesty is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably prepared, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards academic dishonesty as an extremely serious matter, with serious consequences that range from a grade of "E" to expulsion from the University. Both cheating and plagiarism are considered academic dishonesty. Cheating refers to any unauthorized assistance during examinations, such as notes or handouts. It also includes either giving or taking the answers to examination questions to/from other student(s). Plagiarism is academic "theft", and includes not properly crediting another author for his/her work or idea. Any paraphrase or direct quotation from a published or unpublished work should be properly cited with a footnote or reference. Students must be particularly careful not to engage in plagiarism, even inadvertently, since computers and internet web-browsing seem to facilitate this process.
## COURSE OUTLINE

<table>
<thead>
<tr>
<th>Class</th>
<th>Date</th>
<th>Topic</th>
<th>Reading Assignment</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>9/09/02</td>
<td>Introduction, review, causal relationships</td>
<td>Chapter 1</td>
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<tr>
<td>2.</td>
<td>9/16/02</td>
<td>Study designs which demonstrate causality</td>
<td>Chapter 2</td>
</tr>
<tr>
<td>3.</td>
<td>9/23/02</td>
<td>Results obtained from studies of causation</td>
<td>Chapter 3</td>
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<td>4.</td>
<td>9/30/02</td>
<td>Selection of subjects</td>
<td>Chapter 4</td>
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<td>5.</td>
<td>10/07/02</td>
<td>Error and bias</td>
<td>Chapter 5</td>
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<td>6.</td>
<td>10/14/02</td>
<td>Confounding</td>
<td>Chapter 6</td>
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<tr>
<td>7.</td>
<td>10/21/02</td>
<td>Mid-term examination</td>
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<tr>
<td>8.</td>
<td>10/28/02</td>
<td>Multivariate analysis – logistic regression</td>
<td>Chapter 6</td>
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<td>9.</td>
<td>11/04/02</td>
<td>Chance variation and meta-analysis</td>
<td>Chapters 7,8</td>
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<td>10.</td>
<td>11/11/02</td>
<td>APHA Annual Meeting – no class</td>
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<td>11.</td>
<td>11/18/02</td>
<td>Diagnosis of causation</td>
<td>Chapter 9</td>
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<td>12.</td>
<td>11/25/02</td>
<td>Critical appraisal of randomized clinical trial</td>
<td>Chapter 10</td>
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<tr>
<td>13.</td>
<td>12/02/02</td>
<td>Critical appraisal of prospective cohort study</td>
<td>Chapter 12</td>
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<tr>
<td>14.</td>
<td>12/09/02</td>
<td>Critical appraisal of case-control study</td>
<td>Chapter 15</td>
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<tr>
<td>15.</td>
<td>12/16/02</td>
<td>Final Examination at 3:30 PM</td>
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</table>
Each week, the student is expected to read and critique one article relating to the topic of discussion for the week (e.g., selection of subjects). I suggest that you pick a particular topic of interest at the beginning of the semester (e.g., hormone replacement therapy, mammography screening, smoking cessation), find articles each week that relate to that topic of interest, and critically evaluate a study in that area for your course paper. For example if you do a MEDLINE search on both “hormone replacement therapy” and “selection bias” you will have 12 articles from which to choose. Your grade for these discussion will be based on two factors: (1) handing in each week a “marked up” copy of the article; (2) discussing/summarizing the article in class. It is your responsibility to discuss and hand in the articles each week. Each week, students will receive an “A” for doing both, a “B” for doing either, and a “C” for doing neither. Those who miss class can only receive a “B” for handing in the article the following week, or a “C” for not.

For example, consider the following set of readings for the alleged abortion/breast cancer link:


Select a case-control, cohort, or randomized clinical trial from the literature and write a critical appraisal of the study in 8-10 double-spaced pages. Include the following sections:

1. Abstract of study (1 page) – summary the background, purpose, methods, results, and conclusions of the study. Do not use the authors abstract of the study verbatim.
2. Description of the evidence (1/2 page) – What was the exposure (intervention), outcome, study design, study population, and main result?
3. Internal validity (4-5 pages):
   a. non-causal explanations – observation bias, confounding, chance variation
   b. positive features of causation – time-relationship, strong association, dose-response, consistency, specificity
4. External validity (1-2 pages) – results applied to eligible population, source population, and other relevant populations
5. Comparison of results to other evidence – other studies, biological plausibility, consistency with distribution of exposure and outcome.
6. Summary of assessment (one page)

The study should be approved by me. You must have your study selected by October 7. The written paper is due on November 25, 2002. You should plan to make a 10 minute presentation regarding your study during class on 11/25, 12/02, or 12/09.

Please include a bibliography at the end of the paper rather than footnotes. Reference studies in the paper by name and date (e.g., Fleming et al., 2002) rather than by number.