CLM 405, New Course

The Senate Council approved and forwards to the University Senate with a positive recommendation. The course description should be adjusted to include this statement at the end of the last sentence: "…as appropriate for an upper division undergraduate course". The addition of this wording will differentiate this course from the CSC 605 course with the same description until the program is able to provide a more thorough and detailed description of CLM 405.

UNIVERSITY OF KENTUCKY

Undergraduate Council
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Lexington, Kentucky 40506-0054
(859) 257-3027
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April 25, 2005
Senate Transmittal

The Undergraduate Council has reviewed and approves the following proposals:

CLM 405 Epidemiology and Biostatistics

APPLICATION FOR NEW COURSE

1. Submitted by College of HEALTH SCIENCE Date 4/20/2005

   Department/Division offering course HEALTH SCIENCES EDUCATION AND RESEARCH

2. Proposed designation and Bulletin description of this course

   a. Prefix and Number CLM 405 b. Title* EPIDEMIOLOGY AND BIOSTATISTICS

   *NOTE: If the title is longer than 24 characters (including spaces), write A sensible title (not exceeding 24 characters) for use on transcripts EPI AND BIOSTATS

   c. Lecture/Discussion hours per week 3 d. Laboratory hours per week 0

   e. Studio hours per week 0 f. Credits 3

   g. **Course description:** This course will provide a foundation in the principles and methods of the epidemiological investigation of disease with special emphasis on the distribution and dynamic behavior of disease in a population. Etiologic factors, modes of transmission and pathogenesis will be examined. Topics to be covered include epidemics and the spread of infectious disease, epidemiological aspects of non-infectious disease; rates of morbidity and mortality, sensitivity, specificity, and predictive values, strategies used in epidemiological studies to include measures of disease effect, validity, reliability, sampling methods and computer-based biostatistical analysis that emphasize the generalized linear mode and forms of SEM

   h. Prerequisites (if any) Admission to the Clinical Leadership and Management Program or consent of instructor

4. To be cross-listed as _____ _____
   Prefix and Number Signature, Chairman, cross-listing department

5. Effective Date SPRING 2006 (semester and year)

6. Course to be offered ☐ Fall **X Spring** ☐ Summer

7. Will the course be offered each year? **Yes**
   (Explain if not annually)

8. Why is this course needed? CLM 405 will be a core course in the BHS Degree Program in Clinical Leadership and Management. A foundation in epidemiology and biostatistics will enable health care professionals to understand disease behavior and interpret results of empirical health studies. This information will aid students in their clinical work experiences.

9. a. By whom will the course be taught? Elizabeth D Schulman, PhD, Associate Professor

   b. Are facilities for teaching the course now available? **Yes**
   If not, what plans have been made for providing them?

10. What enrollment may be reasonably anticipated? 20

11. Will this course serve students in the Department primarily? **Yes**

    Will it be of service to a significant number of students outside the Department? **Yes**
    If so, explain. It may serve as an upper division health care elective.

    Will the course serve as a University Studies Program course? **No**

12. Check the category most applicable to this course
    - X traditional; offered in corresponding departments elsewhere;
    - ☐ relatively new, now being widely established
    - ☐ not yet to be found in many (or any) other universities

13. Is this course applicable to the requirements for at least one degree or certificate at the University of Kentucky? **Yes**

14. Is this course part of a proposed new program: **Yes**
    If yes, which? This course is part of a program revision – i.e., revising the BHS Degree Program in Health Services Management to a BHS in Clinical Leadership and Management

13. Is this course applicable to the requirements for at least one degree or certificate at the University of Kentucky? X Yes ☐ No

14. Is this course part of a proposed new program? If yes, which? X Yes ☐ No
This course is part of a program revision – revising the BHS in Health Services Management to a BHS in Clinical Leadership and Management

15. Will adding this course change the degree requirements in one or more programs?* ☐ Yes X No
If yes, explain the change(s) below

16. Attach a list of the major teaching objectives of the proposed course and outline and/or reference list to be used.

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

18. If the course is 400G or 500 level, include syllabi or course statement showing differentiation for undergraduate and graduate students in assignments, grading criteria, and grading scales. **X Check here if 400G-500.**

19. Within the Department, who should be contacted for further information about the proposed course?

Name Elizabeth D Schulman, PhD Phone Extension 323-1100, x80565

*NOTE: Approval of this course will constitute approval of the program change unless other program modifications are proposed.

Signatures of Approval:

Louis J. Gooley Department Chair	9 Sept 2004 Date
Louis Gooley Dean of the College	9-20-04 Date
	9.20.04 Date of Notice to the Faculty
UNDERGRADUATE COUNCIL *Undergraduate Council	4-25-05 Date
*University Studies	Date
*Graduate Council	Date
TONJA *Academic Council for the Medical Center	10/19/04 Date
*Senate Council (Chair)	Date of Notice to University Senate

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

CLM 505 Approved

ACTION OTHER THAN APPROVAL

Rev 3/04

APPLICATION FOR NEW COURSE

COURSE OUTLINE FOR CLM~~505~~ 405: EPIDEMIOLOGY AND BIOSTATISTICS

Major Objectives

Upon completion of this course, the student will be able to:

- Through examinations and class discussion, demonstrate comprehension of the principles and methods of the epidemiological investigation
- Explain the dynamics behind the spread of infectious and non-infectious disease
- Describe the concepts of morbidity and mortality rates, sensitivity, specificity and predictive values
- Demonstrate comprehension of concepts and strategies used in epidemiological studies including measures of disease effect, cohort analysis, validity and reliability, sampling methods, analysis of longitudinal and case- control studies, bias, interaction and adjustment
- Describe randomized comparative studies and quantitative design parameters (e.g. sample size and power)
- Evaluate the design and analysis *of* cue studies
- Create graphical and tubular displays *of* research information
- Use computer programs to analyze data from laboratory, clinical, observational and experimental clinical studies
- Design a randomized comparative study of other epidemiological study, using appropriate quantitative design, parameters and statistical analytical techniques and evaluate that design and analysis

Outline

I Disease in a Population
- A. Primary Cause
- B. Contributing Factors

II Etiologic Factors, Modes of Transmission and Spread of Infectious Disease
- A. Infectious Agents
- B. Agent-Host Interaction Contributing Factors Immunizations
- C. Human Behavior
- D. Environmental Factors Patterns of Disease Occurrence

III Vital Statistics
- A. Morbidity and mortality Rates
- B. Fertility Rates
- C. Death Rates
- D. Sensitivity
- E. Specificity
- F. Prevalence
- G. Predictive Values
- H. Other Measures of Disease Effect

IV Epidemiological Studies
- A. Validity
- B. Reliability
- C. Sampling Methods
- D. Types of Studies

V Statistical Analysis
- A. Descriptive Statistics Probability
- B. Inferential Statistics
- C. Estimation
- D. Hypothesis Testing

VI Multivariate Statistics
- A. The General Linear Model Statistical Modeling
- B. Non-Parametric Measures

VII Using Computers in Biostatistical Analyses
- A. Retrospective (Case-Control) Studies
- B. Prospective (Cohort) Studies
- C. Randomized Clinical Trials
- D. Survival Analysis

COURSE EXPECTATIONS FOR UNDERGRADUATES

1. Assigned readings
2. 2 exams
3. Critique and oral presentation of a scholarly article concerning an epidemiological study – detailing the study design and the potential pitfalls associated with that study design, methodology, principle findings, and a critical analysis of the author(s) conclusions and implications
4. A written descriptive study and oral presentation of a current health problem – including the disease distribution in the population, causes, treatment, preventive strategies, major issues (data sources required)

COURSE EXPECTATIONS FOR GRADUATES

1. Assigned readings
2. 2 exams
3. **TWO** critiques and oral presentations of two scholarly articles concerning epidemiological studies – detailing the study design and the potential pitfalls associated with that study design, methodology, principle findings, and a critical analysis of the author(s) conclusions and implications
4. A written descriptive study and oral presentation of a current health problem – including its distribution in the population, causes, treatment, preventive strategies, major implications (data sources required)

GRADING SCALE

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
> 60	E

GRADING WEIGHTS
UNDERGRADUATE

2 Exams (exam 1 – 20%, exam 2 – 25%)	45%
Journal Critique (10%) and oral presentation (10%)	20%
Current Health Concern Term Paper (25%) and oral presentation (10%)	35%

GRADUATE

2 Exams (exam 1 – 20%, exam 2 – 25%)	45%
2 Journal Article Critiques (5% each) and oral presentation (5%)	20%
Current Health Concern Term Paper (25%) and oral presentation (10%)	35%