UNIVERSITY OF KENTUCKY
APPLICATION FOR NEW COURSE

1. Submitted by College of Medicine
   Department/Division offering course School of Public Health
   Date February 26, 2002

2. Proposed designation and Bulletin description of this course
   a. Prefix and Number SPH 631
   b. Title* Design and Analysis of Health Surveys
      *NOTE: If the title is longer than 24 characters (including spaces), write
      A sensible title (not exceeding 24 characters) for use on transcripts Stats for Health Surveys
   c. Lecture/Discussion hours per week 2
   d. Laboratory hours per week 2
   e. Studio hours per week 0
   f. Credits 3
   g. Course description
      Students will learn design and analysis issues associated with well-known national health surveys, including reliability
      and validity of measurements, instrument validation, sampling designs, weighing of responses, and multiple imputations.
      Students will learn how to use statistical software to analyze data from complex survey designs.
   h. Prerequisites (if any)
      STA 580 or equivalent.
   i. May be repeated to a maximum of N/A (if applicable)

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

5. Effective Date Fall 2003 (semester and year)

6. Course to be offered
   ☒ Fall ☒ Spring ☐ Summer

7. Will the course be offered each year?
   ☒ Yes ☐ No (Explain if not annually)

8. Why is this course needed?
   This is one of four selectives in the Biostatistics track of the MPH degree program. Students must complete three selectives.
   The health survey selective covers the currently accepted methods for designing and analyzing surveys commonly encountered in public health.

9. a. By whom will the course be taught? Richard Kryscio, Ziyad Mahfoud
   b. Are facilities for teaching the course now available?
      If not, what plans have been made for providing them?
      ☐ Yes ☒ No
10. What enrollment may be reasonably anticipated?  7 students per offering

11. Will this course serve students in the Department primarily?  
   Will it be of service to a significant number of students outside the Department?
   If so, explain.
   
   Although primarily serving SPH students, some graduate students in the Biomedical and Social Sciences may find this course useful.

12. Check the category most applicable to this course

   ☒ 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 part of a proposed new program?
   If yes, which?
   
   ☐ Yes  ☒ No

14. Will adding this course change the degree requirements in one or more programs?*
   If yes, explain the change(s) below
   
   This course is needed to meet the existing requirements of the Biostatistics track in the MPH degree program.
   
   ☐ Yes  ☒ No

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

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

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

   Name  Richard J. Kryscio  Phone Extension  7-4064

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

______________________________  ______________________________
Department Chair  Date

______________________________  ______________________________
Dean of the College  Date

______________________________  ______________________________
Date of Notice to the Faculty

______________________________  ______________________________
*Undergraduate Council  Date

______________________________  ______________________________
*University Studies  Date

______________________________  ______________________________
*Graduate Council  Date

______________________________  ______________________________
*Academic Council for the Medical Center  Date

______________________________  ______________________________
*Senate Council (Chair)  Date of Notice to University Senate

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

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ACTION OTHER THAN APPROVAL

Rev 11/98
Proposed Course: **SPH 631 Design and Analysis of Health Surveys**

Prerequisite: STA580 or equivalent

**Course Description:**

Students will learn design and analysis issues associated with well known national health surveys, including reliability and validity of measurements, instrument validation, sampling designs, weighting of responses, and multiple imputations. Students will learn how to use statistical software to analyze data from complex survey designs.

**Major Teaching Objectives:**

1. Students will learn elementary sampling designs including simple random sampling, stratified random sampling, and cluster sampling.

2. Students will become familiar with more advanced sampling designs including multistage sampling, sampling proportional to size, and random digit dialing.

3. Students will become familiar with quantitative issues involved in evaluating survey data, including nonresponse, imputation, poststratification, weighting of responses.

4. Students will learn statistical software used in survey data analysis, including survey procedures in SAS, the statistical package SUDAAN, and the statistical package SOLAS.

5. Students will become familiar with at least three of the following health surveys: Current Population Survey (CPS), National Health and Nutrition Examination Survey (NHANES), National Hospital Discharge Survey (NHDS), National Maternal and Infant Health Survey (NMIHS), and National Mortality Followback Survey (NMFS).

**Course Topics:**

1. **Basic Survey Methodology: Design and Analysis**  
   - Simple random sampling  
   - Stratified random sampling  
   - Cluster sampling

2. **Introduction to Intermediate Survey Methodology**  
   - Sampling proportional to size  
   - Multistage sampling  
   - Random Digit Dialing

3. **Introduction to Analysis of Survey Data**  
   - Nonresponse  
   - Imputation  
   - Poststratification  
   - Weighting of responses  
   - Variance estimation

4. **Statistical Software for Survey Data Analysis**  
   - SOLAS for imputation  
   - Procedure surveymeans and surveying for analysis (SAS)  
   - Procedure surveysselect for design (SAS)  
   - SUDAAN for survey data analysis

5. **Introduction to U.S. National Health Surveys**  
   - CPS  
   - NHDS  
   - NHANES  
   - NMIHS
References:


* denotes likely text

Course Grading Criteria:

Grades will be based on two exams (midterm and final) and a lab grade, all equally weighted. Weekly lab assignments will emphasize computations using specialized software and data analytic strategies. The midterm exam will cover concepts and interpretation for all items listed under topics 1-3 above. The final exam may be written, in which case it will determine mastery of statistical software as tools in survey sampling and a working knowledge of the content in the various national health surveys listed under topic 5 above. Alternatively, at the discretion of the instructor, the final exam may be replaced by a paper which will ask the student to do an in-depth review of a national health survey, and to use the survey to solve a novel problem in public health. In that case, the final exam will also involve presentation of the paper to the class.

Course Instructors:

Richard Kryscio, Ziyad Mahfoud