Course Change Request

Indiana University

Check Appropriate Boxes: Undergraduate credit □ Graduate credit [x] Professional credit □

1. School/Division: Medicine / Public Health
2. Academic Subject Code: PRHL
3. Current Course Number: P651
4. Current Credit Hours: 3
5. Current Title: Biostatistics for Public Health I
6. Effective Semester/Year for changes listed below: Fall 2009
7. Instructor: Nyhuis

Type of Change Requested (Check appropriate boxes and indicate changes)

X 8. Change course number to: P551 (must be cleared with University Enrollment Services)
□ 9. Current course title:
□ Change to:

Recommended abbreviation (optional) (Limited to 32 Characters including spaces)

□ 10. Current credit hours fixed at: 3 or variable from: ______ to ______
□ Change to credit hours fixed at: ______ or variable from: ______ to ______

□ 11. Current lecture contact hours fixed at: ______ or variable from: ______ to ______
□ Change to lecture contact hours fixed at: ______ or variable from: ______ to ______

□ 12. Current non-lecture contact hours fixed at: ______ or variable from: ______ to ______
□ Change to non-lecture contact hours fixed at: ______ or variable from: ______ to ______

X 13. Is this course currently graded with S-F (only) grades? Yes ___ No [x]
□ Change to S-F (only) grading? Yes ___ No ___

X 14. Does this course presently have variable title approval? Yes ___ No [x]
□ Is variable title approval being requested? Yes ___ No ___

□ 15. Is this course being discontinued? For all campuses ______ or for this campus only ______
X 16. Current course description: This course introduces the basic principles and methods of data analysis in public health biostatistics. Emphasis is placed on concepts such as sampling, study design, descriptive statistics, probability, hypothesis testing, chi-square tests, t-tests, analysis of variance, linear regression and correlation. An introduction to SAS statistical software is part of this course.
□ Change course description to (not to exceed 50 words)

□ 17. Justification for change: This is a 500-level first year course.
□ (Use additional paper if necessary)

18. Are the necessary reading materials currently available in the appropriate library?

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of this course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by: Carole Kacisz
Department Chairman/Division Director
Date 3/11/09

Approved by: __________________________ Date __________
Dean
______________________________ Date __________
Chancellor/Vice-President
______________________________ Date __________
University Enrollment Services

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.

University Enrollment Services Final—White; Chancellor/Vice-President—Blue; School/Division—Yellow; Department/Division—Pink; University Enrollment Services Advance—White

UPS 725
P551
BIOSTATISTICS FOR PUBLIC HEALTH - I
Spring Semester
Thursday Evenings: 6:00-8:40pm
Room Number: DS 115

PRIMARY INSTRUCTOR: Allen Nyhuis, MS
Office: 433-8058 (9am-5pm), For short questions only!
Home: 273-1957 (call up to 11:30pm)
E-mail: anyhuis@hotmail.com

SUPPORTING INSTRUCTOR: Gregory Steele, DrPH
Office: 274-3174
E-mail: gsteele@iupui.edu

TEACHING ASSISTANTS: Joe Haddix and Debbie Morrison
Office Hours and Location: TBA
Phone: 698-2502 (Joe); 670-4658 (Debbie)
E-mail: johaddix@insightbb.com (Joe);
proecllc@aol.com, deemorri@iupui.edu (Debbie)

by Mendenhall, Beaver, & Beaver.

The Little SAS Book: A Primer (Third Edition)
by Lora D. Delwiche and Susan J. Slaughter

REQUIRED SOFTWARE: SAS (provided and sold to you by PH Dept)

COURSE DESCRIPTION: This course introduces the basic principles and methods of data analysis in public health biostatistics. Emphasis is placed on public health examples as they relate to concepts such as sampling, study design, descriptive statistics, probability, statistical distributions, estimation, hypothesis testing, chi-square tests, t-tests, analysis of variance, linear regression and correlation. An introduction to SAS statistical software is now a part of this course.

PREREQUISITE: One semester of undergraduate mathematics.

EDUCATIONAL OBJECTIVES: At the conclusion of this course, students will be able to:
1. understand basic descriptive statistics and be able to calculate (by hand or by calculator) these statistics for small datasets.
2. be able to identify the different types of research data, and thus determine which statistical techniques should be used in various situations.
3. be able to interpret the results of the statistical tests and methods used in this class.
4. be able to use statistical software (SAS) to run simple statistical analyses on small datasets.
5. have a basic understanding of the many steps of a Public Health research project. These steps should include study design, data collection, data entry, statistical analysis, interpretation, and writing a report of the results.
MPH PROGRAM COMPETENCIES: This course will address aspects of the following MPH Program Competencies:

1. Demonstrate analytic and assessment proficiency when formulating hypotheses, evaluating the integrity and comparability of data, and identifying gaps in data resources.
2. Understand appropriate uses and limitations of both quantitative and qualitative data, and make relevant inferences from such data.
3. Make presentations in support of a particular public health proposal using demographic, statistical, programmatic and scientific information.

STUDENT EVALUATION: Students will demonstrate knowledge and understanding of biostatistics in public health practice by the following activities:

- Exams (best 2 of 3) = 50%
- Research Project = 20%
- Homework & Quizzes = 30%

1. Exams and quizzes will be open-book, open-notes (your notes!).

2. I will use observed motivation (i.e. high classroom attendance, participation, and interest) to elevate "borderline" grades.

3. While I allow (and even encourage) students to work together on assignments, I expect that each student will do his or her own work.

4. Homework turned in late will receive "late penalty points". No late homework will be accepted after that assignment has been graded and returned to the class.

5. The required "Public Health Statistical Research Project" should be an analysis of data that you choose and collect, with prior approval from me. The subject matter should be something you are interested in and related to public health. I will be looking for your enthusiasm for the subject. The analysis must include statistical methods (and SAS computer work) that we cover in class. I will provide a handout with more information on this.
<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPICS &amp; READINGS</th>
</tr>
</thead>
</table>
| January 10 | Introduction, Describing Data (w/ Graphs, Numbers)  
Mendenhall, Beaver, & Beaver-Chapters 1-2                                                                                                          |
| January 17 | Descriptive Statistics (Numeric Measures, Bivariate Data)  
Mendenhall, Beaver, & Beaver-Chapter 2-3                                                                                                           |
| January 24 | Probability and Probability Distributions  
Mendenhall, Beaver, & Beaver-Chapter 4 (not 4.7)  
Brief Introduction to SAS                                                                                                                               |
| January 31 | Binomial & Normal Probability Distributions  
Readings: Mendenhall, Beaver, & Beaver  
Chapters 5 (5.1-5.2) & 6 (not 6.4)                                                                                                                   |
| February 7 | Sampling Distributions  
Mendenhall, Beaver, & Beaver-Chapter 7 (not 7.7)                                                                                               |
| February 14| SAS Programming (setting up datasets, etc.)  
Questions about the Public Health Statistical Research Project                                                                                      |
| February 21| EXAM 1 (Covers Mendenhall, Beaver, & Beaver - Chapters 1-7)                                                                                         |
| February 28| Large Sample Estimation  
Mendenhall, Beaver, & Beaver-Chapter 8                                                                                                                    |
| March 6    | Large Sample Tests of Hypotheses  
Mendenhall, Beaver, & Beaver-Chapter 9                                                                                                                   |
| March 13   | SPRING BREAK - NO CLASS                                                                                                                             |
| March 20   | Inference from Small Samples  
Mendenhall, Beaver, & Beaver-Chapter 10                                                                                                                  |
| March 27   | Linear Regression and Correlation of Public Health Data  
Mendenhall, Beaver, & Beaver-Chapter 12                                                                                                                |
| April 3    | Analysis of Categorical Public Health Data  
Mendenhall, Beaver, & Beaver-Chapter 14                                                                                                                  |
| April 10   | EXAM 2 (Covers Mendenhall, Beaver, & Beaver -Chaps 8-10, 12)                                                                                          |
| April 17   | The Analysis of Variance  
Mendenhall, Beaver, & Beaver-Chapter 11                                                                                                                   |
| April 24   | Multiple Regression Analysis of Public Health Data  
Mendenhall, Beaver, & Beaver-Chapter 13                                                                                                                |
| May 1      | FINAL EXAM (Cumulative)                                                                                                                             |