

Course Change Request

Indiana University

XXXX INDY

Campus

Check Appropriate Boxes: Undergraduate credit [] Graduate credit [X] Professional credit []

1. School/Division Medicine / Public Health
2. Academic Subject Code PBHL 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)

- 8. Change course number to: P551 (must be cleared with University Enrollment Services)
9. Current course title:
Change to:
Recommended abbreviation (optional)
10. Current credit hours fixed at: 3 or variable from:
Change to credit hours fixed at:
11. Current lecture contact hours fixed at:
Change to lecture contact hours fixed at:
12. Current non-lecture contact hours fixed at:
Change to non-lecture contact hours fixed at:
13. Is this course currently graded with S-F (only) grades? Yes No X
Change to S-F (only) grading? Yes No
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
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.
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 Kacius Date 3/11/09
Department Chairman/Division Director
John Legman Date 3/18/09
Dean of Graduate School (when required)

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

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.

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: joehaddix@insightbb.com (Joe);
proecllc@aol.com, deemorri@iupui.edu (Debbie)

REQUIRED TEXT: Introduction to Probability & Statistics (12th Edition)
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.

<u>DATE</u>	<u>TOPICS & READINGS</u>
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)