BIOSTAT 522
Biostatistical Analyses of Health Related Studies
Winter 2016 Syllabus

Lectures: Tues/Thu: 8:30-10:00
SPH II Auditorium (1020, SPH II)

Instructor: Hyungjin Myra Kim, ScD
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SPH office M3039 (rarely here)

Graduate Student Instructors:
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Website: Canvas; Notes will be posted by midnight Sunday (for Tues lectures) and by midnight Tuesday (for Thu lectures)
Most notes will be posted.

Description: A second course in statistics and first course in regression analysis, focusing on regression methods commonly employed in the health sciences. The primary objective of the course is to provide students with the skills necessary to carry out regression analyses. The course is intended for students who will subsequently take BIOSTAT 560 the following Fall semester. Statistical software will be used to manipulate data into an analyzable form, fit regression models and perform model diagnostics. The focus will be on linear regression and logistic regression. The statistical computing language used throughout will be SAS.

Pre-requisite: BIOSTAT 521 (or 501, with permission of instructor).
Co-requisite: None.

Topics (approximate time spent):
Review (1 lecture); simple linear regression (3 lectures), multiple linear regression (10 lectures: main effects models, interactions, ANOVA, categorical covariates, transformations, collinearity, model selection, residual diagnostics, influence diagnostics); logistic regression (11 lectures)

Office Hours: Instructor: Tuesdays and Thursdays: 10:00-10:30 (in lecture room or M3039)
GSIs Office Hours: Refer to GSI Office Hours under the first module.


“Statistical Methods in Cancer Research: Volume II: The Design and Analysis of Cohort Studies” by NE Breslow and NE Day, IARC Scientific Publication

“Regression and ANOVA: An Integrated Approach Using SAS Software” by Muller and Fetterman

Computing

SAS

Exams:

There will be three tests. Tentative dates are:
- Test #1: Tue, February 9, 8:30 – 10:00 am
- Test #2: Tues, March 15, 8:30 – 10:00 am
- Test #3: Thurs, April 14, 8:00 – 10:00 am
Tests will be in-class and closed book. A formula sheet will be permitted.

Grading:

Lab attendance: 5%
Homework (due on Tuesdays in class): 25%
Three Tests: 70% (22%, 23%, 25%)

See Note 1 for letter grade assignments.

Course Schedule

For course topics/reading list, please check the Course Schedule regularly.

Core Competencies (Biostatistics):

1. Describe the roles biostatistics serves in the discipline of public health.
2. Describe basic concepts of probability, random variation, and commonly used statistical probability distributions.
4. Distinguish among the different measurement scales and the implications for selection of statistical methods to be used based on these distinctions
5. Apply descriptive techniques commonly used to summarize public health data.
7. Apply descriptive and inferential methodologies according to the type of study design for answering a particular research question.
9. Interpret results of statistical analyses found in public health studies
Academic Integrity:

The faculty and staff of the School of Public Health believe that the conduct of a student registered or taking courses in the School should be consistent with that of a professional person. Courtesy, honesty, and respect should be shown by students toward faculty members, guest lecturers, administrative support staff, community partners, and fellow students. Similarly, students should expect faculty to treat them fairly, showing respect for their ideas and opinions and striving to help them achieve maximum benefits from their experience in the School.

Student academic misconduct refers to behavior that may include plagiarism, cheating, fabrication, falsification of records or official documents, intentional misuse of equipment or materials (including library materials), and aiding and abetting the perpetration of such acts. Please visit http://sph.umich.edu/student-resources/mph-mhsa.html for the full Policy on Student Academic Conduct Standards and Procedures.

Student Well-Being:

SPH faculty and staff believe it is important to support the physical and emotional well-being of our students. If you have a physical or mental health issue that is affecting your performance or participation in any course, and/or if you need help connecting with University services, please contact the instructor or the Office of Academic Affairs. Please visit http://sph.umich.edu/student-life/wellness.html for information on wellness resources available to you.

Student Accommodations:

Students should speak with their instructors before or during the first week of classes regarding any special needs. Students can also visit the Office of Academic Affairs for assistance in coordinating communications around accommodations.

Students seeking academic accommodations should register with Services for Students with Disabilities (SSD). SSD arranges reasonable and appropriate academic accommodations for students with disabilities. Please visit https://ssd.umich.edu/topic/our-services for more information on student accommodations.

Students who expect to miss classes, examinations, or other assignments as a consequence of their religious observance shall be provided with a reasonable alternative opportunity to complete such academic responsibilities. It is the obligation of students to provide faculty with reasonable notice of the dates of
religious holidays on which they will be absent. Please visit http://www.provost.umich.edu/calendar/religious_holidays.html#conflicts for the complete University policy.