Pubhlth740
Mixed Models and Analysis of Longitudinal Data
Spring 2009

Time: Tu/Th 11:15-12:30
Location: Arnold 103
Instructor: Edward Stanek

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Office: Arnold 401
Office Hours: Tu/Th 4:00-5:00 or by appointment
Course Home Page: http://www-unix.oit.umass.edu/~bioep740/

Course Summary and Objectives

The purpose of this course is to introduce researchers to mixed model methods and longitudinal data analysis applications in statistics. The course aims to:

- enable the student to write and interpret mixed models for different study designs (including survey data, designed experiments, observational studies, and longitudinal studies)
- enable the student to critically evaluate and interpret statistical inference for mixed models and longitudinal data
- enable the student to choose, apply, and interact with statistical software for mixed models.

Upon completion of this course, the student should be able to formulate a mixed model, define and interpret possible estimators, and implement a mixed model analysis for a two stage nested study, a repeated measures study, and a factorial experimental study.

Pre-requisites: BioEpi 741 or equivalent course in experimental design, BioEpi 691F or familiarity with PC-SAS, BioEpi 744 or an equivalent course in regression analysis.


Seasons Study: We plan to make extensive use of data from the Seasons study available on the Seasons site http://www-unix.oit.umass.edu/~seasons/

Reserve Readings/References: Will be announced in class.
Grading and Course Policies

**Grading:**
Assignments:  40%
Class Participation/Quiz:  40%
Final Exam (take home):  20%

**Policy on Exams:** The Final Exam will be a take-home exam. The exams will require computer use and will be completed over a 5 day period. All exams are cumulative.

**Policy on Homework:**
Homework and group projects are due in class on the date assigned. Homework is to be typed/word-processed, with programs, output, and statistical notation integrated. The quality of writing and organization, as well as content, will influence the grade. Homework may be turned in early directly to Arnold 401, or placed in the Box labeled for BIOEPI740 on the Fourth Floor of Arnold House.

**Other Procedures:** All graded assignments not picked up in class may be obtained from the slot for graded homework for this section in the box in the kitchenette on the fourth floor of Arnold house. Copies of handouts and assignments not picked up in class may also be obtained from the same box.

**Computer Use**

**Computer Access:**
Email: All students must obtain a PPP account from OIT. This account will enable OIT computer lab use and use of computers in the School of Public Health Micro Computer Resources rooms (Arnold 413 and 417). Hours for OIT labs are posted in the labs. Hours for the SPH lab in Arnold are 24-hours/day, 7 days per week with the account/password and combination provided in the course. However, access to the SPH computers requires access to Arnold House. Arnold House is open from Monday-Friday until 9:30 PM. Late evening and weekend access is possible by obtaining a building key. Public Health students may sign up to get building Keys with their departmental secretary. Non-public health students enrolled in the course may sign up for a building key (see instructor).

Software: This course will make extensive use of SAS (see Resources). This software is available in UMASS computer labs, and can be purchased from OIT.