

Math475: Statistical Computation Using SAS

Fall 2012

Instructor: Dr. Nan LIN
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Email: nlin@wustl.edu
Time and location: 2:30pm-4pm (Tue and Thur), Room 218, Cupples I
Office hours: Mon 3-4pm and Wed 4-5pm
Grader information: Yao XIE (yxie@math.wustl.edu)

General information

Textbook: Ronald Cody and Jeffrey Smith, *Applied Statistics and the SAS Programming Language*, 5th edition, Pearson Prentice Hall, 2004, ISBN: 0-13-146532-5

Reference 1: *SAS for Mixed Models*, Second Edition, SAS Publishing, 2006, ISBN: 1590475003

Reference 2: *Categorical Data Analysis using the SAS System*, Second Edition, SAS Publishing, 2000, ISBN: 1580257100

Class webpage: All homework assignments, handouts, and other information will be available on Blackboard (<http://bb.wustl.edu/>). Students should check the class webpage frequently for updates.

Course Description

This is an advanced undergraduate/master level course on statistical analysis using the software SAS. Topics include descriptive statistics, linear regression, t-test, nonparametric tests, power analysis, analysis of variance (ANOVA), mixed-effect models, repeated measures/longitudinal data analysis, contingency table analysis, logistic regression, Poisson regression and some basic multivariate analysis. This class will also cover the programming side of SAS, such as data management and writing SAS macro.

Prerequisite

Probability and statistics at the level of Math3200 or Math493. Students may take Math493 concurrently.

Computing

Students are **required** to use SAS to complete all assignments. SAS is available on computers in the Computing Center in Eads Hall. SAS supports Windows and Unix (or Linux), but **NOT** Mac OS. In this class, all teaching is performed under the Windows operating system.

SAS, as a programming language, is very different from most other languages, such as C, Matlab, R, etc.. Students experienced in other languages should expect a big transition. However, the basic programming concepts, such as writing a function and writing a loop, are always helpful.

Homework

There will be approximately five homework assignments. The grader will grade homework and assign a score for each homework set. Late homework submitted **within 2 days of due date will receive 25% penalty** for each day late. Any homework late by more than 2 days will not be graded and receive zero point.

Examinations

There will be one midterm exam and one take-home final exam. The midterm exam is closed book and closed notes and will be held in the regular class time. However, one two-sided 8.5 by 11 inch “cheat sheet” is allowed for the midterm exam. Students can bring a calculator to the exam, but sharing calculators is not allowed. The take-home final exam is accumulative and will be released at the beginning of Monday December 18 via Blackboard.

Make-up exams will **NOT** be given under any circumstances. If verifiable documentation is given for a legitimate absence, then your final exam grade will be reweighted. If a student misses the midterm exam, her/his final will count 50% of the final grade, instead of the usual 30%. However, no reweighting will be given if the final exam is missed.

Exam time and location:

- Midterm: 1pm-2:30pm, Thursday October 25, 2012, at Room 218, Cupples I
- Take-home Final: due 4pm, Tuesday December 19, 2012, at Room 100, Cupples I

Grading

Grades will be based on the homework sets (50%), the midterm (20%), and the final exam (30%). Cr means D or better if you elect “Credit/No Credit.” The letter grade is determined as follows. The A range will be (90, 100], the B range will be [80, 90), the C range will be [70, 80), and the D range will be [60, 70), with plus and minus grades at the top and bottom 10% of each of these ranges. (If you are registered pass/fail, you must average at least 70 to pass.)

Learning Tips

1. Try to show up in all the lectures. Make good notes.
2. Ask questions in class. Your questions may be others’ as well. No questions are too elementary, and all deserve to be answered.
3. Discuss with your classmates about your questions. It is perfectly acceptable to work together on homework assignments.
4. Finish homework in time.

Class Policies

1. Late homework: Late homework submitted **within 2 days of due date will receive 25% penalty** for each day late. Any homework late by more than 2 days will not be graded and receive zero point.
2. Exam conflicts: Prior permission and arrangement only.
3. Collaboration: I encourage discussion of homework in broad, conceptual terms where one student is trying to educate another without giving away the answer, but **all work turned in must be your own**. For example, each student must write his/her own programs in entirety.
4. Academic Integrity: All students are expected to adhere to the university’s academic integrity policy. Any student who is found to have cheated on an assignment or exam will receive a zero score for that work, regardless of the extent of the offense.