STAT 541, Advanced SAS Programming -- Spring 2016

Instructor:
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Course Web Page: http://people.stat.sc.edu/hitchcock/stat541.html

Class Meeting Times: Mondays and Wednesdays 2:20 pm - 3:35 pm, WMBB Nursing 409
or via distance by streaming video

Office Hours: Mon-Tue-Wed-Fri 1:05-2:05 p.m. or by appointment

Textbook: *SAS Certification Prep Guide: Advanced Programming for SAS 9* (3rd edition), by
SAS Institute. (4th edition is fine too if you have that one)

Required Computing Resources: You will need to create a student account in **SAS OnDemand
for Academics** in order to access (for free) SAS Studio or SAS Enterprise Guide. Instructions
are given on the course web page. You will receive an enrollment link in an email from the
course instructor. In addition, SAS is available in some of the labs around campus.

Course Outline:

PROC SQL (Queries, joins, table creation and management, indices and views)	4 weeks
Macro variables, macro programs and macro storage	4 weeks
Creating and combining data	1 week
Lookup tables; formatting data and modifying data sets	3 weeks
Efficient SAS Programming and best practices; efficient sorting and queries	2 weeks

Purpose: To help students learn advanced SAS computing programming skills, including SQL
queries; data management, modification and formatting; and SAS macro programming. To help
students learn efficient methods of SAS programming.

Learning Outcomes: Students should be able to
  - Perform SQL queries and data management using PROC SQL
  - Interpret and write complex SAS macro programs
  - Manage, combine, modify, and format data sets in SAS
  - Write SAS code that runs efficiently
  - Sort and query SAS data sets efficiently

Class Lectures:
You may attend the lectures live on Mondays and Wednesdays in Nursing 409, or you may watch
them online via Adobe Connect or streaming video. Adobe Connect generally gives a clearer
video picture. Information about how to access online lectures has been emailed to you. In
addition, you may can look at the "Online Viewing" link on the course web page. The details for
viewing the lectures either: (1) live through Adobe Connect, (2) recorded through Adobe
Connect, or (3) recorded via streaming video, are listed under "Accessing Online Lectures". The
call-in number for the studio and technical support contact information are also given there.

Homework:
Homework exercises will be assigned on the course web page. Due dates will be given on the course web page. Late homework will be penalized. The homework will typically involve writing some programs/code in SAS.

        Each student's homework must be done independently. You may ask each other informal questions about the homework, but everyone is to do his/her own work. If homework is found to be copied, all students involved will receive a 0. Of course, you may always ask me questions about the homework. [To be clearer, students can ask each other informal ORAL questions about homework, but **cannot look at or copy each other's homework papers or code**. All submitted homework must be their own work.]

For Graduate Students:
Since 500-level courses are required to contain more rigor for graduate students than for undergraduates, there will be an extra project required for graduate students. Undergraduate students may do this project for extra credit. The project will be due near the end of the semester. More information will be given out later in class.

Exams:
There will be two midterm exams and a final exam. All these exams will consist of multiple-choice questions about the concepts studied in the class. The midterm exams will be given in the classroom during the regularly scheduled class time. If you are not able to come to campus for the quizzes, you must contact the distance education office to set up a proctor. If you are on campus and not able to attend class live, you may either contact the distance education office to set up a proctor, or may arrange with me to take it at some other time. More information will be provided about these options closer to the test dates.

Grading:
For **undergraduate students**, the course grade will be based on tests (48%, i.e., 16% each) and homework (52%). For **graduate students**, the course grade will be based on tests (45%, i.e., 15% each), homework (50%), and the required project (5%). The overall course average will result in the following grades: 90-100 = A, 87-89 = B+, 80-86 = B, 77-79 = C+, 70-76 = C, 67-69 = D+, 60-66 = D, 59 and below = F.

Tentative Course Schedule: MW, January 11 through April 25, except:
No class (MLK Day): January 18 (Monday)
No class (Spring Break): March 7, 9 (Monday, Wednesday)

Wednesday, Feb. 17 (tentative): Exam 1
Wednesday, April 6 (tentative): Exam 2
Friday, April 29 - 12:30 p.m.: final exam

** Homework Due Dates will be posted on the course web page with each homework assignment.