**STA5067, Advanced Data Management and Analysis with SAS**

**Instructor:** Dr. Dan McGee ( dmcgee@fsu.edu )

All contact Info on course Canvas page (people tab).

**Introduction:** This is an online course. The materials covered and work required are

the same as for the face-to-face sections of the course that are offered on campus.

**Course Materials**: All course materials are online, see course Canvas page for links.

**Important Dates:** The due dates for all homework as well as the dates of the tests are posted on the course Canvas page.

**Prerequisites:** **STA 5066 is a required prerequisite.** All material from that course is assumed known.

**Course Objectives**: Students will conduct advanced data management in SAS using the SQL language with simple and complex queries and joins. Student will write macros using the macro facility in SAS including using macro variables, macros and macro programming. Students will conduct simulations of statistical processes using the SAS DATA step and PROC IML.

**Textbook:** There is no required text. The following books are good resources:

SAS Certification Prep Guide, Advanced Programming for SAS 9, Third Edition.

Prairie K: The Essential PROC SQL Handbook for SAS Users. SAS Publishing.

Burlew M: SAS Macro Programming Made Easy. Third Edition. SAS Publishing.

Wicklin R: Statistical Programming with SAS/IML Software. SAS Publishing

**Accessing SAS Software:** For this course we will use SAS On Demand for Academics. Students who have taken STA 5066 should already have a SAS profile and be familiar with the use of SAS Studio. Details are provided in the first lecture.

**NOTE:** Cloud maintenance is occasionally done and the software may unavailable for part of the time. So **do not wait until the last day** **to do homework assignments**. “The cloud was unavailable,” is not an acceptable reason for late submission.

**Homework:** All homework must be uploaded to the course Canvas. Unless otherwise noted, assignments require that you submit only the programs that produce the output included in the assignment. **All homework materials must be assembled into a single file and this** **single file should be submitted** to the assignment posted on the course page**.**

**Details of homework submission are included in the first lecture.**

**The homework may be discussed among students. But, each student is required to write and assemble the programs required for the homework assignment on their own, no collaborative writing of submitted code is allowed.**

**Questions about homework prior to submission should be posted to the discussion group for the appropriate week.**

**Questions about homework grades should be addressed to the course TA**.

**Homework:** Homework is assigned each week as topics are completed. It is due no later than 11:59pm on Sunday of the week of assignment. For example, Week 1 homework is due on Sunday of week 1.

**Homework Grading**:

 **Late homework will be penalized 20% and no homework will be accepted more than two weeks and no homework will be accepted after the last day of classes.**

**Course Description:** This course provides an overview of advanced topics for managing and analyzing data using SAS. It will focus on SAS’s “other languages”. We will the following topics:

1. Proc SQL -- the language of the relational data model.
2. The Macro Facility in SAS.
3. Simulation in SAS

**Grading:** The final course grade will be based on homework (60%), and tests (two midterms (20% each) Letter grades are based on the following scale.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| A | A- | B+ | B | B- | C | D | F |
| 95+ | 90-<95 | 85-<90 | 80-<85 | 75-<80 | 70-<75 | <70 | <60 |

**Tests:** There will be two tests, one on Proc SQL and one on the Macro Facility. **The tests are computer generated, online, and involve multiple choice, single answer, etc.**

**Discussion Groups:** A separate discussion group will be implemented for each week’s topics. All questions should be posted to the discussion for the appropriate week. Questions may include those about homework.

**University Attendance Policy:**
Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

**Academic Honor Policy:**
The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "...be honest and truthful and...[to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at <http://fda.fsu.edu/Academics/Academic-Honor-Policy>)

**Americans with Disabilities Act:**
Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from the Student Disability Resource Center has been provided. This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the: Student Disability Resource Center 874 Traditions Way 108 Student Services Building Florida State University Tallahassee, FL 32306-4167 (850) 644-9566 (voice) (850) 644-8504 (TDD) sdrc@admin.fsu.edu [http://www.disabilitycenter.fsu.edu](http://www.disabilitycenter.fsu.edu/)

**Syllabus Change Policy:**

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.

**Some online resources:**

Numerous blogs covering different aspects of SAS are available at:

<http://blogs.sas.com/content/>

A good resource for many SAS topics is the UCLA web site:

<http://www.ats.ucla.edu/stat/sas/>

SAS Online Documentation:

A complete listing of documentation for SAS 9.4:

<http://support.sas.com/documentation/94/>

Documentation SAS formats and informats:

<http://support.sas.com/documentation/cdl/en/leforinforref/64790/HTML/default/viewer.htm#titlepage.htm>

Documentation, SAS Procedures:

<http://support.sas.com/documentation/cdl/en/allprodsproc/67392/HTML/default/viewer.htm#titlepage.htm>

Documentation, SAS Functions and Call Routines:

<http://support.sas.com/documentation/cdl/en/lefunctionsref/67398/HTML/default/viewer.htm#titlepage.htm>

SAS Macro Language Reference (Online Book)

<http://support.sas.com/documentation/cdl/en/mcrolref/68140/HTML/default/viewer.htm#titlepage.htm>

SAS IML Users Guide:

<http://support.sas.com/documentation/cdl/en/imlug/67502/HTML/default/viewer.htm#titlepage.htm>