

**COURSE SYLLABUS
FOR
RESEARCH CONSULTING AND STATISTICAL COMPUTING
(STA 569) – SPRING 2007
CLASS LOCATION: LDB-407 – MEETING TIME: 3:00 – 4:30 MW**

TITLE: Research Consulting and Statistical Computing

INSTRUCTOR: Dr. Cecil Hallum

OFFICE: LDB 420C

OFFICE HOURS: 10:00—11:00 MW
2:00--3:00 MW
9:30--11:00 TTh
& by appointment

PHONE: 294-3706

TEXT: *Learning SAS by Example, 2007*, by
Ronald P. Cody, SAS Institute, Inc. (ISBN: 1599941651).

SAS Functions by Example, 2004, by Ron Cody,
SAS Institute, Inc. (ISBN: 1590473787)

Professional SAS Programmer's Pocket Reference, 2005, by Rick Aster,
Breakfast Communications. (ISBN: 1891957120).

Handouts will be provided from a) *Proceedings of the SAS Users Group
International Conference (SUGI)*, b) *The American Statistician*, and c) other sources

DESCRIPTION: This course introduces the fundamentals of research consulting and statistical computing. Emphasis is given to coverage of key material from the SAS (Statistical Analysis System) package to make each student proficient in the SAS programming language, particularly as relates to SAS programming specifics. Coverage includes the following SAS modules: SAS Basics, SAS Statistics, SAS IML (Interactive Matrix Language), SAS/GRAPH (i.e., the high resolution, color graph component), SAS Macros, SAS/EIS (Enterprise Information System), AF Frame (the object oriented programming component that permits the creation of graphical user interfaces (GUI's)), SAS/INSIGHT and SAS/ASSIST (i.e., the “point-and-click” part of SAS). The additional coverage (approximately 20% of the semester) will emphasize the critical components of statistical consulting. The latter includes specifics related to the ways and means a statistical consultant should handle a client beginning with the first session up through the closure period (i.e., the “pricing for work” phase). Actual consulting situations will be discussed and critical statistical issues addressed in this type of environment.

OBJECTIVES: There are two primary objectives of this course:

- To become proficient in the use of key components of the SAS package.
- To become cognizant of appropriate ways and means for conducting statistical research and consulting in the workplace.

APPROACH:

1. Lectures over concepts and applications.
2. Assigned problems for experience and familiarity with techniques.
3. Classroom discussions on applications --- appropriate usage and value.
4. Examinations to demonstrate understanding and ability to utilize methods.

APPRAISAL:

Exam I.....	25%
Exam II.....	25%
Final Exam.....	25%
Homework.....	25%

TOTAL	100%

SPECIAL NOTE: Performance on exams is directly related to homework performance --- all homework is to be kept current, neatly together, in sequence, and ready to be handed in upon request. It should be noted that homework in this course includes not only assigned programming homework but presentations made in class as well.

POLICIES:

1. Make-up Exams --- **DO NOT MISS AN EXAM!!** Make-up exams are to be avoided; however, if you miss an exam (and have a authentic excuse -- i.e., a doctor's or other professional's written excuse), a day will be set aside at the end of the semester for all make-ups.
2. Withdrawal --- University policy will be followed: the last day for drop/withdrawal is October 10, 2007. It is your personal responsibility to initiate and complete the drop/withdrawal process.
3. Homework --- Since topics in the course sequence build upon preceding topics, it is expected that you will remain current in all assignments; also you should have your homework neatly assembled together at all times and be ready to hand it in upon request.
4. Incomplete --- A grade of "X" or "Incomplete" is not appropriate for this

course.

- 5. Attendance --- Since lectures and in-class discussions are for your benefit, you are expected to be in attendance at all classes.**
- 6. Class Behaviour -- Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Cellular telephones and pagers must be turned off before class begins. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.**
- 7. Academic Honesty --- All work that is handed in for evaluation is to reflect solely your individual performance. All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.**

COURSE

SEQUENCE

- Exam I will be given approximately one-third into the semester (see below).
- Exam II will be given approximately two-thirds into the semester (see below).
- The final exam will be given at the time advertised in the schedule of classes. It will be a comprehensive exam.

WEEK-BY-WEEK COVERAGE

WEEK 1: The Basics Component of SAS

WEEK 2: a) The Basics Component of SAS (continued)

b) Consulting Specifics

WEEK 3: SAS INSIGHT and SAS ASSIST (i.e., the ready-built, “point-and-click” aspects of SAS).

WEEK 4: a) SAS/Statistics – The statistics component of SAS

b) Consulting Specifics (continued)

WEEK 5: a) Review for Exam I

b) Exam I

WEEK 6: SAS Macros

WEEK 7: a) SAS/GRAPH – The high- resolution component of SAS

b) Consulting Specifics (continued)

WEEK 8: SAS IML (Interactive Matrix Language)

WEEK 9: SPRING BREAK

WEEK 10: SAS/EIS (Executive Information System)

WEEK 11: a) Wrap-up of EIS

b) Review for Exam II

WEEK 12: a) Exam II

b) Consulting Specifics (continued)

WEEK 13: SAS AF Frame – Developing GUI’s

WEEK 14: Wrap-up of SAS AF Frame

WEEK 15: Review for Final Exam

WEEK 16: a) Review Wrap-up

b) Final Exam

HAVE A FANTASTIC SEMESTER!!