

**University of Florida College of Public Health and Health Professions**  
**[Fall 2009] PHC 6937: SAS for Public Health - Analysis**

**Instructor:**

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**Class meeting time:** Tuesday Period 9

**Office hours:** Period 7 – MTWH  
Period 5 – H

**Co requisite:** Students must be currently enrolled in or have already completed PHC 6937: SAS for Public Health - Data (or equivalent).

**Prerequisites:** PHC 6052: Introduction to Biostatistical Methods (or equivalent). Students must have prior experience with basic data entry and analysis in SAS. Students must also have access to a laptop with **SAS version 9.2** for in-class use. (Other computing requirements are found at <http://www.mph.ufl.edu/students/onlinecomputer.htm>.)

**Description:** This is a one credit course which covers using SAS to analyze public health data. Students will learn how to use common SAS procedures to conduct common statistical analyses. Although we will discuss results, this course does NOT teach statistical methods.

**Course Objectives:** Upon completion of this course, students will be able to use common SAS procedures to analyze data. In addition, students will use many resources for learning SAS, resulting in skills that promote independent SAS programming, the ultimate goal of the course.

**Textbook:** The Little SAS Book: A Primer 4<sup>th</sup> ed., by Lora Delwiche and Susan Slaughter

**E-Learning:** An E-Learning site will be available for the course. Grades, discussion boards, and possibly other information will be available in the E-Learning system. E-learning is accessible at [lss.at.ufl.edu](http://lss.at.ufl.edu) or through [my.ufl.edu](http://my.ufl.edu). You must have a valid Gatorlink ID and password. For assistance, call the UF Help Desk at 392-HELP.

**Grading:** Your grade in this course will be based on “exams”, homework, and class participation. Total points earned will be based on the following:

- Class Participation (10%)
  - Homework (50%)
  - Exam I (20%)
  - Exam II (20%)
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- Homework will consist of assignments which will require independent SAS programming to complete a specified task regarding analyzing a given dataset.
  - Exams will consist of a SAS programming assignment which you must complete during our scheduled class time. Exams will test comprehension of programming required for homework assignments.
  - Class participation assessment will include attendance/tardiness, preparation for class, and participation in discussions.

The grading scale for this course consists of the standard scale, including minus grades, below. The conversion factors for grade point values assigned to each grade are also included (in parentheses):

|                       |                       |
|-----------------------|-----------------------|
| 93% - 100% = A (4.00) | 73% - 76% = C (2.00)  |
| 90% - 92% = A- (3.67) | 70% - 72% = C- (1.67) |
| 87% - 89% = B+ (3.33) | 67% - 69% = D+ (1.33) |
| 83% - 86% = B (3.00)  | 63% - 66% = D (1.00)  |
| 80% - 82% = B- (2.67) | 60% - 62% = D- (0.67) |
| 77% - 79% = C+ (2.33) | Below 60% = E (0.00)  |

**Class Attendance:** Class attendance is mandatory. Excused absences follow the criteria of the UF Graduate Catalogue (e.g., illness, serious family emergency, military obligations, religious holidays), and should be communicated to the instructor prior to the missed class day when possible. UF rules require attendance during the first two course sessions. Regardless of attendance, students are responsible for all material presented in class and meeting the scheduled due dates for class assignments. Finally, students should read the assigned readings prior to the class meetings, and be prepared to discuss the material except for the first class session.

**Classroom etiquette:** Please come to class on time and be prepared to stay until the time scheduled as the end of class. Pagers and cell phones should not be used in class. The use of cell phones, text messaging, and pagers is a common complaint from students. Please turn them off. Or, if you expect urgent calls, set them to “vibrate.” Another common complaint is “side” conversations among students. Please consider that your conversation may interrupt the attention of someone seated near you. Generally, you should be speaking to the class as a whole or participating in group discussions as directed by the instructor. I welcome in-class questions. Your question will nearly always be one that other students also have.

**Policy on Make-Up Work:** Students are allowed to make up work ONLY as the result of illness or other unanticipated circumstances warranting a medical excuse and resulting in the student missing a homework or project deadline, consistent with College policy. Documentation from a health care provider is required. Work missed for any other reason will receive a grade of zero.

**Academic Integrity:** At the University of Florida, each student is bound by the academic honesty guidelines of the University and the student conduct code printed in the Student Guide and on the University website. The Honor Code states: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” Cheating or plagiarism in any form is unacceptable and inexcusable behavior.

**My personal expectations and comments regarding academic integrity:** Students will often be encouraged to discuss the material with other members of the class on homework and other assignments. I believe we learn best when individual learning and group cooperation are present. However, I expect that no student will ever do any of the following:

- Have another person complete any assignment in this course
- Copy another student’s work on any assignment in this course
- Use materials provided by a previous student in the course for any purpose
  - Do not seek to obtain or accept offers of such materials (delete any materials you obtained prior to the beginning of the course)
  - I will often provide exactly the same information (unless I have changed it for the better)
  - I will provide any information from past semesters that I feel will help you

I believe that one of the reasons academic integrity is becoming a large issue in colleges and universities is that, for whatever reason(s), students tend to be more concerned about the grade they will obtain in the course than they are interested in learning the material. I want to stress that in this class, if you focus on learning the material and worry less about the grade you will receive, you will be rewarded with knowledge that will be much more useful to you in the future than the difference between an A, B, or even C in this class.

**Course Outline:** Each session will be designed to do one or more of the following

- Instruct students on concepts regarding analyzing data and creating output in SAS. This usually involves discussing example SAS code and output. This can also involve presentations of material via power-point or online video.
- Discussion of SAS concepts among the members of the class as a whole or in groups. This can be an impromptu discussion generated by a question or a planned discussion to facilitate learning of specific material.
- Allow students time to practice SAS programming on homework assignments. Many sessions will be spent on SAS programming. For homework assignments, students must create their own program; however, discussion of necessary SAS topics is encouraged.
- EXAMS. There will be two “exam” sessions where, at the beginning of the class, you will be provided with a task to complete in SAS during the session. You will be required to work entirely on your own with no assistance from myself or other students.

**Topics:** Specific topics covered in the course are listed below. Lectures and discussions are designed to introduce a single topic or group of related topics. EVERY homework assignment and exam requires understanding and application of multiple topics.

- Specific Analysis Procedures
  - UNIVARIATE, FREQ, MEANS
  - TTEST, POWER, NPAR1WAY
  - REG, CORR, GLM
  - GENMOD
  - LOGISTIC
  - SURVEYFREQ, SURVEYMEANS
  - SURVEYREG, SURVEYLOGISTIC
  - LIFETEST, LIFEREG, PHREG
- Specific Graphics Procedures
  - BOXPLOT
  - GPLOT
  - SGPLOT
- Other procedures if possible/necessary
- Using ODS
  - Saving output to files (multiple types)
  - Using ODS select and exclude
  - Creating new datasets with ODS output
  - Working with ODS graphics
- Use and write SAS Macros

**Schedule:** Adjustments to this schedule are possible during the semester. The instructor will strive to be informative and fair regarding any changes.

| <b>Week</b> | <b>Activity</b>      | <b>Major Topics</b>   |
|-------------|----------------------|---|
| 1           | Lecture & Discussion | Introduction to course; Syllabus; SAS review and discussion   |
| 2           | Homework 1           | Boxplots; Histograms; T-Tests and Confidence Intervals; Non-Parametric Tests; ODS RTF; ODS Graphics |
| 3           | Homework 2           | ODS Graphics with TTEST, NPAR1WAY, GLM, REG, and CORR   |
| 4           | Lecture & Discussion | Review Solutions to Homework Assignments 1 and 2  |
| 5           | Homework 3           | Preliminary Analysis of Survey Results; ODS SELECT; ODS EXCLUDE; and ODS OUPUT                      |
| 6           | Homework 3 (Con't)   | Logistic Regression Model   |
| 7           | Exam 1               | Topics covered will be discussed in class prior to the exam session                                 |
| 8           | Homework 4           | Using Survey Procedures in SAS  |
| 9           | Lecture & Discussion | Topics of Student Interest  |
| 10          | Homework 5           | Survival Analysis; ODS Graphics   |
| 11          | Lecture & Discussion | PROC POWER  |
| 12          | Homework 6           | Using PROC POWER  |
| 13          | Homework 7           | Miscellaneous Analysis Topics   |
| 14          | Exam II              | Topics covered will be discussed in class prior to the exam session                                 |
| 15          | Homework 8           | Student Presentations of Homework 8   |

**Accommodations for Students with Disabilities:** Students requiring accommodations must first register with the Dean of Students' Office. The Dean of Students' Office will provide documentation to the student who must then provide this documentation to the faculty member when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their coursework. We all learn differently; however, if you have experienced problems in university classes with writing, in-class exams, understanding or concentrating in class; please talk to us or access a learning or education testing resource at the University or in another professional setting. For your assistance, should you need them, please consider either of the following:

University Counseling Services

<http://www.counsel.ufl.edu/services.asp>

P301 Peabody Hall – 392-1575

Student Mental Health Services in the Student Health Care Center

<http://www.health.ufl.edu/shcc>

Room 245, Infirmary Bldg.- 392-1171