

STAT 5304

Introduction to Statistical Computing

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Course Description:

This course is intended for students interested in statistical computing. SAS (Statistical Analysis System), a widely used statistical language for research and industry, will be used throughout the course. The goal of this course is to enable students to do essential computations and statistical analysis using SAS statistical software.

Prerequisites: STAT 1301, STAT 2301, STAT 2331 or equivalent.

Course Objectives:

The goal of this course is to enable students to do essential computations and statistical analysis using commonly used statistical software.

Student Learning Outcomes:

After this course, the student should be able to . . .

- use SAS software, the most extensively used data analysis software tool worldwide
- access information from a variety of data sources
- combine, transform, and manipulate data sets
- summarize, and interpret information from small to very large data sets
- create informative graphs
- analyze data using standard statistical technique

May Term Tentative Class Schedule

Class	Topics
1	Course introduction Introduction to using the SAS software program / interface
2	Commands and Procedures in SAS Getting Data into SAS
3	Working with Data Sorting and Printing Data: (PROC SORT, PROC PRINT)
4	Summarizing Data (PROC MEANS, PROC UNIVARIATE, PROC FREQ)
5	Graphics in SAS Modifying and Combining SAS Data Sets and ODS
6	SAS Statistical Procedures Procedures for analyzing continuous/quantitative data by
7	SAS Statistical Procedures Procedures for analysis count /qualitative data by group
8	SAS Statistical Procedures Procedures for analysis correlation and regression
9	SAS Statistical Procedures PROC NPAR1WAY, Logistic, Tabulate
10	SAS Statistical Procedures PROC Power, Dealing with Messy Data
11	REVIEW, Choosing A SAS Procedure Exam

Method of evaluation

Labs are incorporated into the class time with exercises designed to evaluate the student's learning for each concept. The final class will contain a hands-on computer exam consisting of a data analysis problem.

Grading criteria:

50% in-class Daily Exercises

50% in-class final data analysis exam

Required Text

Text will be provided.

Other References

Bailer, A. J. (2010). *Statistical Programming in SAS* Cary, NC: SAS Institute Inc.

Delwiche, L. and Slaughter, S. (2008). *The Little SAS Book: A Primer, Fourth Edition*. Cary, NC: SAS Institute Inc.

SAS Institute Inc. (2011). *SAS Inc. 9.3 Language Reference: Concepts*. Cary, NC: SAS Institute

SAS Institute Inc. (2011). *Base SAS 9.3 Procedures Guide*. Cary, NC: SAS Institute Inc.