SOFTWARE TOOLS FOR DATA ANALYSIS
STA 9750
Course Description, Requirements & Syllabus

Professor: Victor Peña
Office: 11-273 VC
Office hours: M&W 1pm-2pm and by appointment
Email: Victor.Pena@baruch.cuny.edu

COURSE DESCRIPTION

This course provides an understanding of the principles and concepts of using computer tools for data analysis. Students will learn to use the SAS to data, and an introduction to the statistical software R will be provided. The students will gain experience in analyzing both quantitative and qualitative data, as well as repeated measure data. Written projects will prepare students for clear communication of their analysis in professional settings. This course is designed primarily for statistics and quantitative methods and modeling (QMM) majors, PhD candidates, and those interested in carrying out sophisticated statistical analyses of data using statistical software.

Course Learning Objectives

- Use SAS to manipulate and describe data
- Use SAS to perform an analysis of the data
- Applying appropriate statistical SAS tools, techniques, and procedures for data analysis
- Basic data analysis with R
- Critical thinking about business problems in quantitative terms
- Making decisions about business problems based on quantitative findings
- Adopting codes of ethical use of statistical methods in the presentation and analysis of data
- Applying appropriate statistical tools, techniques, and procedures to real datasets.
- Mastery of fundamental descriptive and inferential statistical concepts and procedures proficiently

MBA Program Learning Goals

Quantitative Analysis
Students will effectively use quantitative techniques to describe and analyze business phenomena and help develop solutions to business problems.

Ethical Awareness
Students will be sensitive to ethical issues in business, understand the importance of behavior and their responsibilities as business people to uphold ethical principles in their dealings.

Technology Literacy
Students should understand the role of information technology in organizational decision making and strategy.

Teamwork and Leadership
Students will gain conceptual knowledge and analytical skills helpful to functioning effectively in teams. Students will experience opportunities to understand and develop leadership competencies.

Knowledge Integration
Students will have working knowledge of all functional areas in business and apply them in a holistic, analytical, and integrative manner to effectively understand and recommend solutions to business problems

Written Communication
Students will be effective written communicators, as leadership and teamwork in business is dependent on developing shared meaning and commitment to action fostered through communication.

Global Awareness
Students will be sensitive to differences in perspectives, institutions, and practices among business people from around the world as our global economy puts a premium on global business relationships.

Course Materials

Recommended:

The little SAS book, by Delwiche and Slaughter, 5th edition

Evaluation Criteria

SAS, 75% of the grade **(or % of Lectures that are based on SAS, if changed)**:
- Homework assignments: 30%
- Take-home midterm: 30%
- Data analysis project: 40%

R, 25% of the grade **(or % of Lectures that are based on R, if changed)**:
- Homework: 40%
- Data analysis project: 60%

The letter grade scale can be found here: https://www.baruch.cuny.edu/registrar/faculty-and-staff/non-traditional-grade.html (graduate).

Late homework policy: You can turn in one of the HW assignments up to one week late with no penalty. After that, you can turn in a HW assignment late with 25% penalty if it is turned in up to 3 days late, and with 50% penalty if it is turned in more than 3 days late up to 7 days late. Any assignments that are more than 7 days late will have a 100% penalty.

Academic Integrity:
Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the college's educational mission and the students' personal and intellectual growth. Baruch students are expected to bear individual responsibility for their work and to uphold the ideal of academic integrity. Any student who attempts to compromise or devalue the academic process will be sanctioned. Please see the Baruch College Website for Further Information:
http://www.baruch.cuny.edu/academic/academic_honesty.html

Counseling and Student Health:
Students may occasionally have personal issues that arise in the course of pursuing higher education that may interfere with academic performance. If you are facing problems affecting your coursework you are encouraged to seek confidential assistance at the Baruch College Counseling Center 646–312-2158 or contact the Office of Graduate Programs 646-312-1300.

Students with Disabilities:
To qualify for special accommodation you must first register with the Baruch College Disability Services office 646-312-4590.

ALL DUE DATES FOR HOMEWORKS, THE PROJECT AND THE EXAMS CAN BE FOUND ON THE BLACKBOARD WEBSITE CALENDAR.

Projects: Students will carry out projects involving applications of the SAS and R procedures covered in the course to problems of their own choosing. The students will formulate a research question, obtain the data, determine the appropriate method of analysis and use SAS and R to perform the analysis.	➢ Applying appropriate statistical tools, techniques, and procedures to real datasets. ➢ Mastery of fundamental descriptive and inferential statistical concepts and procedures proficiently ➢ Use SAS software proficiently ➢ Basic knowledge of R.	Quantitative Analysis Technology Literacy Ethical Awareness Written Communication Teamwork and Leadership Knowledge Integration
Exams: Take-home midterm	➢ Mastery of manipulating data and programming in SAS ➢ Applying appropriate statistical SAS tools, techniques, and procedures for data analysis	Quantitative Analysis Technology Literacy Written Communication