Quantitative Skills in International Relations
PAI 704
Fall 2013

Professor: Shena Ashley, PhD
Email: shashley@syr.edu
Office: 316 Eggers Hall
Class Meetings: Tuesdays 3:30-6:15pm
Class Location: Hall of Languages
Office hours: Thursdays

Review Session Schedule
Sept 20 4:00--5:30 Computer Lab
October 18 4:00-5:30 Computer Lab
November 15 4:00-5:30 Computer Lab

Course Description

Many students in the social sciences enter a quantitative methods course with apprehension and dread. However, when students are taught quantitative methods using an applied approach that addresses some of the most important issues in their field, they soon begin to realize the transformative power of quantitative skills for enhancing understanding and improving decision-making. This is that kind of course.

Like most basic statistics courses this course covers the essential topics of statistical analysis using descriptive and inferential techniques. However, it is an applied course with a focus on utilizing statistical analysis to inform decision making in the field of international relations. By the end of the semester, a student should expect to be competent in developing, understanding, evaluating and critiquing basic statistical analysis for description and explanation. These are essential skills for management or analytical positions that can be applied in any field or sector. But because this course is designed for MAIR majors, we will highlight the unique analytical questions, challenges and scenarios one might encounter in an international relations based career and the proper application of the statistical concepts and approaches in those settings. (Besides, what’s the use of knowing how to calculate a mean if you don’t know when it’s useful or when it may be completely biased?)

We will focus on statistical analysis that is relevant to many of the most important global issues. We will examine: the distribution of income using several measures including the Gini coefficient, the nature of poverty using the Sen Index, health inequities using illness concentration curves and human rights using the human rights index.

The combination of lectures, discussions, assignments and exams are designed to develop students’ statistical literacy, statistical reasoning and statistical thinking.

Statistical literacy: involves understanding and using the basic language and tools of statistics: knowing what statistical terms mean, understanding the use of statistical symbols, and recognizing and being able to interpret representations of data.

Statistical reasoning: is the way people reason with statistical ideas and make sense of information. Statistical reasoning may involve connecting one concept to another or may combine ideas about data and chance. Reasoning means understanding and being able to explain statistical processes, and being able to fully interpret statistical results.

Statistical thinking: involves an understanding of why and how statistical investigations are conducted. This includes recognizing how, when and why existing inferential tools can be used, and being able to understand and utilize the context of a problem to plan and evaluate investigations and to draw conclusions.
What you can expect in this class?
This course is designed around a combined pedagogy of individual learning, group review and in-class practical applications. My approach is to coach and guide you through the basic statistical concepts and prepare you for real-world application. So, you can expect interesting and practically relevant class sessions and lots of practice outside of class.

Two Things Students Must Do to be Successful in this Course:
1. Read, Read, Read
2. Practice, Practice, Practice

I’ve assigned readings and practice questions for each week that cover a range of topics.

What I expect from you:

1. Have a good understanding of the assigned reading material and have your practice questions completed (I will randomly collect practice questions to monitor your completion of the assignments. I will also ask students to discuss the process and methods for answering the practice questions in class, so be prepared).
2. Attend review sessions and office hours with the teaching assistant to ask questions about the concepts from the reading you don’t understand and practice question concepts you did not grasp.
3. Actively participate in class discussions (don’t be afraid to say the wrong thing, it’s better to say it and be corrected than to make that error on your exam)

Learning Objectives

Students will be able to:

• Calculate, present and interpret statistical charts, graphs and tables
• Calculate and interpret three measures of central tendency (the mode, the median, and the mean) and three measures of dispersion (the range, the variance, and the standard deviation).
• Understand the basic law of probability
• Understand the normal probability distribution
• Calculate, interpret, and explain hypothesis tests for means and differences of means
• Understand the relationship between two variables using bivariate statistical techniques
• Interpret regression coefficients on interval-level and dummy independent variables in bivariate regression.
• Understand assumptions and limitations of regression analysis
• Manage a dataset in SPSS
• Evaluate a statistical report in a short briefing memo.

Textbooks:

Required Text

A note about this book: I know textbooks are expensive so I don’t take assignment of texts lightly. I have carefully selected this book because it is focused on practical skill building, it is easy to read and highly approachable for students who are new to the language and practice of statistics. This is a book you will definitely want to keep as a reference book for your next job.

For students who want exposure to the mathematics and theories related to the concepts we will cover in this course, I refer you to the following texts
Assignments and Exams

Due dates for all assignments and exam dates are listed in the class schedule portion of this syllabus. You will have three exams and one final assignment to test your comprehension of material throughout the course. The final assignment will require you to critically review a research report and write a two-page memo with your assessment of the data analysis and conclusions drawn from the analysis.

Grade Calculations

Each assignment/exam will be graded on a scale of 0-100. Your overall grade for the course will be computed by the following formula. Overall score = (.20)(exam 1) + (.25) (exam 2) + (.35)(exam 3) + (.20)(final assignment)

The final grade will be calculated as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Overall score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93.00-100.00</td>
</tr>
<tr>
<td>A-</td>
<td>90.00-92.99</td>
</tr>
<tr>
<td>B+</td>
<td>86.00-89.99</td>
</tr>
<tr>
<td>B</td>
<td>83.00-85.99</td>
</tr>
<tr>
<td>B-</td>
<td>80.00-82.99</td>
</tr>
<tr>
<td>C+</td>
<td>77.00-79.99</td>
</tr>
<tr>
<td>C</td>
<td>73.00-76.99</td>
</tr>
<tr>
<td>C-</td>
<td>70.00-72.99</td>
</tr>
<tr>
<td>D</td>
<td>60.00-69.99</td>
</tr>
<tr>
<td>F</td>
<td>&lt;60.00</td>
</tr>
</tbody>
</table>

Note: when calculating final grades, I do not round numbers up or down, for example a 92.98 is always an A-

Students with Disabilities

If you have a condition that makes it difficult to complete the work described in this syllabus, please notify the Disabled Student services Office and the instructor within the first two weeks of class in order to develop alternative arrangements. All information and documentation of the disability will be confidential.

Plagiarism and Academic Honesty

Syracuse University requires students to “exhibit honesty in all academic endeavors. Cheating in any form is not tolerated, nor is assisting another person to cheat. The submission of any work by a student is taken as a guarantee that the thoughts and expressions in it are the student’s own except when properly credited to another. Violations of this principle include giving or receiving aid in an exam or where otherwise prohibited, fraud, plagiarism, or any other deceptive act in connection with academic work. Plagiarism is the representation of another’s words, ideas, programs, formulae, opinions, or other products of work as one’s own, either overtly or by failing to attribute them to their true source” (Syracuse University Bulletin 2003-2004: p. 2). For university rules and regulations go to http://www.syr.edu/publications/gradcat/. If you have any questions about what constitutes plagiarism, or how to cite sources, see references on writing, such as The Elements of Style or http://www.essex.ac.uk/sociology/course_materials/doc_down/PhD_handbook.pdf.

Students are allowed to work in small groups to discuss the pre-class practice problems and develop solutions together. HOWEVER, each student must write-up the solutions that he/she submits independently. Failure to write-up your solutions independently will be considered a breach of the academic integrity. Students are not
allowed to consult each other on exams.

Religious Observance Policy

SU’s religious observances policy, found at http://supolicies.syr.edu/emp_ben/religious_ob servance.htm, recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice/Student Services/Enrollment/My Religious Observances from the first day of class until the end of the second week of class.

Any student requiring religious holiday accommodations will need to meet with me during office hours before the end of the third week of class to handle schedule adjustments in advance.

Policy on Absences and Late Assignments

Attendance is strongly recommended. Students are responsible for getting class notes from classmates when absent. There are no make-up exams unless arranged under religious observance policy.

Communication Policy

The best way to communicate with me is via email at shashley@syr.edu. However, you should expect a 24 hour delay for a response during weekdays and no response over the weekend. I do not return phone calls, so please do not leave messages on my office voicemail.

Software Requirements

Copies of the SPSS software that we will utilize in class are located on the computers in Eggers 040 and the Academic Village. ICT has copies of the SPSS software for sale. You should purchase a copy for class.
Course Schedule and Assignments

Week 1: August 27
LECTURE: Introduction to Quantitative Analysis

I. Descriptive Statistics

Week 2: September 3
LECTURE: Central Tendency and Variation
Readings for class: Chp 1-3
Pre class Practice Chp 2: Q2-Q8 Chp 3: Q1, 4, 6, 8

Week 3: September 10
LECTURE: GRAPHS and the Visual Display of Quantitative Information
Readings for Class: Chp 4
Pre class Practice Chp 4: Q1-Q4

II. Relationships Between Two Variables

Week 4: September 17
Lecture: Correlation
Readings for class: Chp 5
Pre class practice Chp 5: Q2a&b, Q7, Q8

Week 5: September 24-EXAM 1

III. Probability Theory

Week 6: October 1
LECTURE: Hypothesis Testing, Normality and Probability
Reading for Class Chp 7 & 8
Pre Class Practice: Chp 7 Q4 & 9 Chp 8 Q4-7

IV. Inferential Statistics

Week 7: October 8
LECTURE: Statistical Significance & Z-tests
Reading for Class Chp 9-10
Pre Class Practice: Chp 9 Q2-4, & 9; Chp 10 Q1-4
Week 8: October 15

LECTURE: T-TESTS

Readings for Class Chp 11-12

Pre Class Practice: Chp 11 Q 2, 4, 5; Chp 12 Q 1, 2 & 4

Week 9: October 22-Exam 2

Week 10: October 29

LECTURE: ANALYSES OF VARIANCE

Readings for Class Chp & 13-14

Pre Class Practice: Chp 13 Q 1 & 3; Chp 14 Q 1-3

Week 11: November 5

LECTURE: Testing Relationships: Correlations and Regression

Readings for Class: Chp 15-16

Pre Class Practice: Chp 15 Q 1, 2, 4; Chp 16 Q 1, 3 &4

Week 12: November 12

LECTURE: Multivariate Regression

Reading: posted on blackboard

Week 13: November 19-Exam 3

Week 14: November 26-Holiday; No Class

Week 15: December 3

LECTURE: How to Review an Article (Preparation for Final Assignment)

Final Assignment due December 6 by 5:00pm in PAIA office 215 Eggers

This Syllabus is Subject to Change with Advanced Notice