

UNIVERSITY OF PENNSYLVANIA
School of Social Policy & Practice

MSSP 630: Quantitative Reasoning

Fall 2011, Tuesdays 12:00 – 2:30 PM
McNeil Building, Room 108-109

Dr. Jessica Taylor Piotrowski
jtaylor@asc.upenn.edu

Annenberg Public Policy Center (APPC)
202 S. 36th Street
Office Phone: 215.746.6336
Office Hours: Tuesdays, 2:30 – 3:30 in Caster B18 or by
appointment at APPC

** APPC building security requires all visitors to have a scheduled
appointment with me. All visitors must sign-in and provide identification.*

Teaching Assistant: Maayan Schori
mschori@sp2.upenn.edu

School of Social Policy & Practice
3815 Walnut Street, Office # 305
Office Phone: 484.417.2877
Office Hours: 11:00 – 12:00 or by appt.

COURSE DESCRIPTION

The primary goals of this are (1) to provide students with a solid understanding of the logic of social science research as well as (2) to provide students with an introduction to a broad range of statistical methods commonly used in social science research. The first portion of the semester concentrates on defining research problems, research design (including sampling, measurement, and causal inference), and assessing research quality. The latter portion of the semester focuses upon data analysis including descriptive statistics, measures of association for categorical and continuous variables, introduction to t-tests, ANOVA and regression, and the language of data analysis. Students will learn how to choose and apply statistical tools to data sources, how to interpret quantitative studies, and will gain experience using *SPSS* - a statistical software package.

COURSE MATERIALS

Required Books (available in Penn Bookstore)

- Schutt, R. K. (2009). *Investigating the social world: The process and practice of research* (6th ed.). Boston: Sage.
- Salkind, N. (2011). *Statistics for people who (think they) hate statistics* (4th ed.). Thousand Oaks: Sage.

Optional Materials

- SPSS Software. In this course, you will be using SPSS to learn and conduct data analyses. As a student in the MSSP program, you may access the McNeil computer lab at any time with your Penn ID. If you would prefer to purchase a personal copy of SPSS, Computer Connection sells a grad-pack with a multi-year license at a discounted rate. You can also purchase a 6-month license for \$35.00 (academic discount) online at <http://www.onthehub.com/>.

Additional Readings

- Additional course readings will be made available on the course Blackboard page.

COURSE POLICIES AND OTHER INFORMATION

Attendance

Students are expected to attend all classes, be prepared to discuss assigned readings, and participate fully in class activities. Attendance will be considered in the determination of overall achievement of class learning objectives. If you anticipate missing a lecture in its entirety or leaving a lecture early, please inform me ahead of time and arrange to speak with a fellow classmate about the material that you missed.

Class Participation & Expectations

Classroom learning is a group activity that depends upon everyone's full participation in order to succeed. Students are expected to: be prepared to begin class on time, silence cell-phones and refrain from texting during class, read and be prepared to discuss assigned readings, submit assignments on time, participate fully in class activities, and assist your classmates. In return, you can expect that I will: be on time and prepared for every class, be available via office hours, email, and appointments to answer questions and help you with assignments, make every class engaging and valuable, and respect your contributions to class.

Electronic Communication

This course has an accompanying Blackboard website (<https://courseweb.library.upenn.edu>). Please check this website frequently as all announcements, assignments, lectures, and additional readings will be posted here.

In addition to posting all course information on the class website, primary means of communication outside of regular class hours is email. It is important that you check your Penn email account regularly. If you do not use your Penn email address as your primary email account, please arrange to have Penn email forwarded to your preferred account.

I respond to most email messages within 48 hours Monday- Friday. If there is an urgent situation that requires immediate attention, please include the word "URGENT" in your subject line.

Readings and Assignments Submission

All assignments and due dates will be posted on the class blackboard site. Assignments are due at the beginning of class in hard copy. Make/keep a copy of anything that you submit. The attached course calendar indicates an approximate timeline, but the exact due dates may change as per our progress. Any changes will be announced in class and on blackboard.

Late Assignments. Late assignments will not be accepted unless you have an approved extension from me. Requests for extensions must be made as early as possible.

Penn Policy on Academic Integrity

Evidence of cheating will be taken seriously. Students are expected to conduct themselves in a manner consistent with the University of Pennsylvania's Code of Academic Integrity, which presents standards regarding plagiarism, multiple submissions and other actions. Students are expected to be familiar with the Code, which can be found at www.upenn.edu/academicintegrity.

COURSE GRADING

Your final course grade will be based on a percentage score reflecting your performance on the course assignments, the final exam, and the final group project. Students have to pass ALL components of the course assignments to attain a passing grade.

The grading scale for this class is as follows:

A+	97 and higher
A	93 to 96
A-	90 to 92
B+	87 to 89
B	83 to 86
B-	80 to 82
C+	77 to 79
C	73 to 76
C-	70 to 72
D	60 to 70
F	Under 60

Assignments

Throughout the semester, there will be 4 individual assignments. Each assignment is worth 10% of your final grade. The assignments are typically exercises that correspond to the topic of instruction. In most instances, you will be given one week to complete an assignment. **40%**

Final Group Project (FGP)

For the final group project, students will conduct an empirical analysis on a topic of their choosing. Students are expected to present their findings from their analyses to class, as well as submit a 10-12 page single-spaced report (including graphics and tables embedded in the text). The report must contain empirical analyses in the form of tables, graphs, and hypothesis testing. The objective of the report is to communicate, in an accessible manner, statistical information about a policy issue. Students will work in teams and use SPSS to conduct statistical analyses. Each team will select their own topic and dataset. A proposal memo outlining the data analysis report and the dataset to be used is due on November 8, 2011. More detail will be given later in the semester **30%**

- The written report will constitute 20% of your final course grade.
 - Class presentation will constitute 5% of your final course grade.
 - Peer assessment will constitute 5% of your final course grade.
-

Final Exam

There will be a take-home final exam at the end of the semester. The exam is cumulative. Material is based on lectures, readings, and assignments. You will be expected to have access to SPSS to complete the exam. **30%**

Course Schedule / Information

Week	Date	Topic	Readings	Assignments
Week 1	Sept. 13	Introduction Scientific Approach to Research	Schutt: Ch.1 Article # 1	---
Week 2	Sept. 20	Designing Research Questions & Hypotheses Variable Conceptualization and Operationalization Research Ethics	Schutt: Ch.2 Schutt: Ch. 3(67-88) Salkind: Ch. 7	---
Week 3	Sept. 27	Measurement Sampling	Schutt: Ch. 4 Article# 2, 3, & 4 Schutt: Ch. 5	<i>Assignment 1 Posted</i>
Week 4	Oct. 4	Research Design & Causation Experiments Surveys	Schutt: Ch. 6 Schutt: Ch. 7 (221-237) Schutt: Ch. 8	Assignment 1 Due
Week 5	Oct. 11	Evaluating Validity of Research Designs (IV, EV, CV)	Schutt: Ch. 7 (237-254) Article # 5 & 6	<i>Assignment 2 Posted</i>
Week 6	Oct. 18	Descriptive Statistics & Data Displays FGP Discussion	Salkind: Ch. 2, 3, and 4 Article # 7 & 8	Assignment 2 Due <i>FGP: Posted & Discussed</i>
Week 7	Oct. 25	Introduction to Inference <ul style="list-style-type: none"> • Probability, normal curves, z scores • Statistical Significance 	Salkind: Ch. 8 & 9 Article # 9	---
Week 8	Nov. 1	SPSS Lab: Introduction to SPSS <i>Taught by M. Schori</i>	Salkind: Appendix A (up to p. 346) <i>Additional Reading Possible</i>	---

Week	Date	Topic	Readings	Assignments
Week 9	Nov. 8	Measures of Association <ul style="list-style-type: none"> Categorical Data: Chi Square (χ^2) Continuous Data: Correlation coefficient (r) 	Salkind: Ch. 5 & 15	Assignment 3 Posted FGP: Project Memo Due
Nov. 9 th – Nov. 15 th		<i>Group consultation sessions on final group project (meeting times to be scheduled)</i>		
Week 10	Nov. 15	Comparing Two Means <ul style="list-style-type: none"> Independent Samples t-test Dependent Samples t-test 	Salkind: Ch. 11 & 12	Assignment 3 Due
Week 11	Nov. 22	Comparing Multiple Means <ul style="list-style-type: none"> Analysis of Variance (ANOVA) 	Salkind: Ch. 13 Article # 10	---
Week 12	Nov. 29	Simple Linear Regression	Salkind: Ch. 16 Article # 11	Assignment 4 Posted
Week 13	Dec. 6	SPSS Lab: Data analysis for final project	---	Assignment 4 Due
	Dec. 6 th – Dec. 9 th	<i>Group consultation sessions on final group project (meeting times to be scheduled)</i>		
	Dec. 9 th	<i>Take-Home Final Exam Posted</i>		
Week 14	Dec. 13	Class Presentations Last day of Class!	---	FGP: Written Project & Class Presentation Due
	Dec. 16	Take-Home Final Exam Due by 5 PM		

List of Additional Class Readings

Reading Number	Citation
1	Huston, A. C. (2008). From Research to Policy and Back. <i>Child Development</i> , 79(1), 1-12.
2	Swing, E. L., Gentile, D. A., Anderson, C.A. & Walsh, D.A. (2010). Television and video game exposure and the development of attention problems. <i>Pediatrics</i> .
3	Ferguson, C.J. & Ceranoglu, T.A. (2010, July 8). Poor measurement, poor controls, and spurious results in Swing et al. (2010) [E-letter]. <i>Pediatrics</i> . Retrieved August 26, 2010 from http://pediatrics.aappublications.org/cgi/eletters/peds.2009-1508v1 .
4	Swing, E.L., Gentile, D.A., Anderson, C.A., & Walsh, D.A. (2010, July 19). Re: poor measurement, poor controls, and spurious results in Swing et al. (2010) [E-letter]. <i>Pediatrics</i> . Retrieved August 26, 2010 from http://pediatrics.aappublications.org/cgi/eletters/peds.2009-1508v1 .
5	McKay, M. M., Stoewe, J., McCadam, K., & Gonzales, J. (2006). Increasing access to child mental health services for urban children and their caregivers. In L. B. Alexander & P. Solomon (Eds.), <i>The Research Process in the Human Services</i> (pp. 3-19). Belmont: Thomson Brooks/Cole.
6	Smith, B., & Marsh, J. (2006). Client-service matching in substance abuse treatment for women with children. In L. B. Alexander & P. Solomon (Eds.), <i>The Research Process in the Human Services</i> (pp. 151-170). Belmont: Thomson Brooks/Cole.
7	Bleakley, A., Hennessy, M., & Fishbein, M. (2006). Public opinion on sex education in US schools. <i>Archives of Pediatric and Adolescent Medicine</i> , 160(11), 1151-1156.
8	Snowden, L. R. (2006). Social embeddedness and psychological well-being among African Americans and Whites. In L. B. Alexander & P. Solomon (Eds.), <i>The Research Process in the Human Services</i> (pp. 459-480). Belmont: Thomson Brooks/Cole.
9	McCartney, K., & Rosenthal, R. (2000). Effect Size, Practical Importance, and Social Policy for Children. <i>Child Development</i> , 71(1), 173-180. doi: 10.1111/1467-8624.00131
10	Lapierre, M. A., Vaala, S., & Linebarger, D. L. (2011). The influence of spokes-characters and health cues on young children's subjective ratings of cereal taste. <i>Archives of Pediatric and Adolescent Medicine</i> , 165(3), 229-234. doi: 10.1001/archpediatrics.2010.300
11	Ceballo, R., & McLoyd, V. C. (2002). Social support and parenting in poor, dangerous neighborhoods. <i>Child Development</i> , 73(4), 1310-1321.