

# QUANTITATIVE RESEARCH METHODS

## SPRING 2012

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Office Hours: Mon, Wed, & Frid, 3-4pm (please sign up on my online calendar)

### Course Overview

This course introduces students to a variety of quantitative research methods used to address questions about the social world. Students will assist with a class project involving survey techniques. Students will create their own individual research projects, conduct literature reviews, gather/analyze quantitative data, and present formal presentations on their projects. Students will also engage in hypothesis testing (using chi-square, t-test, anova, and correlation tests). Through these assignments students develop research and critical analysis skills that are invaluable for those planning to engage in social advocacy, policy-making, or graduate studies.

### Course Requirements

- 1) Class participation (15% of final grade). Students are expected to actively engage in classroom discussions. Attendance will also be reflected in this grade.
  - 2) Reading quizzes (10% of final grade). Frequent online quizzes will test student comprehension of the assigned readings.
  - 3) Research activities associated with class project (10% of final grade). Students will work together on a class project that involves survey research (creating, administering, and analyzing results from the *LC Independent Student Survey*).
  - 4) Homework assignments (40% of final grade). Unless otherwise stated, homework assignments are to be done by students individually
  - 5) Oral presentation (10% of final grade). Students are required to give an oral presentation on the highlights of their research projects.
  - 6) Final exam (15% of final grade). Students will take an in-class, closed-book final exam that tests their capacity to use critical reasoning to interpret quantitative information.
- \*Additional instructions on all these assignments will be provided.

### Required Course Texts

- 1) *Course Reader*, provided by Campus Bookstore.
- 2) *Everything is Obvious*, by Duncan Watts.
- 3) *Statistics With Microsoft Excel*, by Beverly Dretzke (Fifth Edition).
- 4) *Happiness Around the World*, by Carol Graham.

## Homework Assignments

The following is an overview of the homework assignments that are due during the term. For each assignment, students must submit a 3-4 page analysis (word document) of the results, as well as any other relevant documentation related to the assignment. Students must work individually on these assignments.

1) Engaging in comparative research methods.

Students learn basic techniques of comparative research, including how to use boolean algebra to identify conjunctural causation.

2) Conducting an effective, quantitatively-oriented literature review.

Students are taught how to conduct quantitative-oriented searches on research databases, how to distinguish between information of various qualities, and how to create and present meta-analyses of arenas of research.

3) Examining patterns in quantitative data using tables and graphs.

Students are taught how to generate and interpret frequency distributions and graphs using Excel.

4) Testing relationships using statistical techniques.

Students are taught how to examine relationships between variables using Chi-Squares, T-Tests, ANOVA, & Correlation tests using Excel.

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Wed, Jan. 18      **Course Introduction**

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Frid, Jan. 20      **An Overview of Social Research Methods**

An Overview of Social Research Methods

Potential Benefits of Utilizing Quantitative Research Methods

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Mon, Jan. 23      **The Comparative Method**

Ragin, "The Comparative Method."

Wickham-Crowley, "Toward an Integration of Revolutionary Theories."

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Wed, Jan. 25      **The Scientific Method**

Crotty, "Positivism: The March of Science."

A Summary of the Scientific Method

Defining a Research Project Topic

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Frid, Jan. 27      **Critiques of the Scientific Method**

Crotty, "Critical Inquiry."

Crotty, "Feminism."

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Mon, Jan. 30      **Recapturing the Scientific Method for Engaged Research**

Haack, Susan. "Replies to Some Reservations About Science."

Greenwood and Levin, "Action Research, Diversity, and Democracy."

**Homework #1 due: A critical analysis of two sources that use comparative methods.**

Wed, Feb. 1      **Putting Together a Quantitative Research Project**  
Model for a Quantitative Research Project

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Frid, Feb. 3      **Conducting a Quantitatively-Oriented Literature Review**  
Strategies for Conducting a Quantitative Data Search  
About the General Social Survey

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Mon, Feb. 6      **Survey Methodology**  
Survey Research.  
Maier, "Public Opinion Polling."  
The Gallup Organization, "How Polls/Surveys are Conducted."  
Saletan, Kenner, and Thomas, "A Consumer's Guide to the Polls."  
Associated Press, "Cell Phone-Only Crowd May Alter Polling."  
**Research Project Proposal Due.**

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Wed, Feb. 8      **The Central Limit Theorem and Probability**  
The Central Limit Theorem, the Normal Distribution, and the Laws of Probability

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Frid, Feb. 10     **Work on Class Survey Project**  
"Want Data? Ask Students, Again and Again."

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Mon, Feb. 13     **Work on Class Survey Project**

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Wed, Feb. 15     **The Scientific Analysis of Social Phenomena I**  
Watts, *Everything is Obvious*, pp. Viv-134.

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Frid, Feb. 16     **The Scientific Analysis of Social Phenomena II**  
Watts, *Everything is Obvious*, pp. 135-266.

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Mon, Feb. 20     **An Introduction to Excel**  
Dretzke, *Statistics With Microsoft Excel*, pp. 1-48.  
**Homework #2 due: Results of your quantitatively-oriented literature review.**

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Wed, Feb. 22     **Social Network Analysis I**  
Reading to be announced.

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Frid, Feb. 24     **Social Network Analysis II**  
Reading to be announced.

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Mon, Feb. 27     **Work on LC Independent Student Survey Project**

Wed, Feb. 29     **Work on LC Independent Student Survey Project**

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Frid, Mar. 2     **Generating Frequency Distributions and Graphs with Excel**  
Dretzke, *Statistics With Microsoft Excel*, pp. 45-78.

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Mon, Mar. 5     **Generating and Interpreting Cross-Tabulations with Excel**  
Dretzke, *Statistics With Microsoft Excel*, pp. 233-249.  
Example of a Crosstab Analysis (in course reader).  
**Update on your research project due.**

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Wed, Mar. 7     **Hypothesis Testing and Measures of Association I**  
Hypothesis Testing, Type I and Type II Errors, Variable Types (Levels of Measurement)

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Frid, Mar. 9     **Hypothesis Testing and Measures of Association II**  
Selecting the Correct Bivariate Test to Use  
Directionality of the Relationship Between Variables & Measures of Association

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Mon, Mar. 12    **Generating and Interpreting a Chi-Square Analysis**  
Example of How the Chi-Square Statistic is Calculated.  
Dretzke, *Statistics With Microsoft Excel*, pp. 249-255.  
**Homework #3 due: Tables and graphs that are relevant to your research project.**

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Wed, Mar. 14    **Generating and Interpreting a T-Test for Independent Samples**  
T-Test for Independent Samples.  
Dretzke, *Statistics With Microsoft Excel*, pp. 155-163.

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Frid, Mar. 16    **Generating and Interpreting an ANOVA Test**  
Analysis of Variance (ANOVA)  
Dretzke, *Statistics With Microsoft Excel*, pp. 171-175.

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Mon, Mar. 19    **Generating and Interpreting a Correlation Analysis**  
Example Using Pearson's Correlation  
Attitudes About Expenditures on the Environment  
Dretzke, *Statistics With Microsoft Excel*, pp. 189-199, 205-210.

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Wed, Mar. 21    **Causation and Experimental Designs**  
Exploring Causation

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Fri, Mar. 23     **No Class**  
Bruce available for individual consultations in his office.

**Spring Break (March 24-April 1)**

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Mon, Apr. 2      **Multiple Regression**  
Basic Components of a Multiple Regression Equation  
Creating and Interpreting Regression Lines

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Wed, Apr. 4      **Interpreting and Critiquing Articles that Use Quant Methods I**  
Pan. "Evaluating and Interpreting Research Literature."  
Harris, et al. "A Randomized, Controlled Trial of the Effects of Prayer."

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Frid, Apr. 6      **Interpreting & Critiquing Articles that Use Quant Methods II**  
Rice. "Religious and Other Paranormal Beliefs in the United States."

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Mon, Apr. 9      **Results of the 2012 LC Independent Study Survey**  
**Homework #4 due: Testing relationships using statistical techniques.**

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Wed, Apr. 11     **Interpreting & Critically Evaluating Quantitative Research on Happiness I**  
Graham, *Happiness Around the World*, pp. 1-115.

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Frid, Apr. 13     **Interpreting & Critically Evaluating Quantitative Research on Happiness II**  
Graham, *Happiness Around the World*, pp. 116-231.

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Mon, Apr. 16     **Using Quantitative Data to Improve Your Life**  
Agger, "Data for a Better Planet."  
Wolf, "The Data-Driven Life."

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Wed, Apr. 18     **Preparing Power Point Slide Shows**

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Frid, Apr. 20     **Student Presentations**

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Mon, Apr. 23     **Student Presentations**

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Wed, Apr. 25     **Student Presentations**

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Wed. May 2      **Final Exam**  
1-4pm in regular classroom.

### **College as a Professional Occupation**

I expect all of your class-related behavior to be professional in nature. Work must be turned in on time, appointments must be kept, discussions must be respectful of everyone, etc. Each time you fail to act in a professional manner, your grade will be reduced.

#### **On the Use of Email**

My email tends to get crazy, and plus it is usually best to talk in person. So, let's talk instead of emailing whenever possible. Check my online calendar to see when I'm available and to sign up for a time to talk in person or via the phone. Thanks!

#### **On Class Attendance**

I take attendance right at the beginning of class. If you are late, you may miss important announcements. It is okay to miss two classes during the semester, but every additional absence reduces your participation grade. *Please do not email me about why you miss class or are late, either before or after the fact.* If you wish to minimize the number of points taken off, you can give me documentation (from a health center, sports coach, etc) in class.

#### **Turning Work in on Time**

It is unfair to grant extensions to individual students, when others have turned their work in on time. Therefore, I take points off on any assignment that is turned in late, for whatever reason. *Please do not email me about why assignments are late, either before or after the fact.* If you wish to minimize the number of points taken off, you can attach relevant documentation to the back of your paper.

#### **Getting Assistance and/or Special Accommodation During the Course**

I encourage you to contact me if you are having difficulties with the course material or assignments. Please do not hesitate to let me know if there is anything I can do to make your experience in this course more positive for you. I am also very happy to work with students who are in need of special accommodations. If you anticipate needing special accommodations, contact the Student Support Services Office to discuss your situation. That office will then contact me, and we can take appropriate action to make sure all your needs are accommodated.

#### **Policy on Academic Integrity**

Cheating and plagiarism are very serious infractions, and are dealt with severely in this course! I expect you to abide by all aspects of this academic integrity policy: <http://legacy.lclark.edu/dept/pathfind/academicinteg.html>. This policy prohibits any form of cheating on exams or written assignments. It also prohibits plagiarism, so be certain to properly cite all information that you use in your papers. If you haven't already done so, take the tutorial on how to avoid plagiarism available here:

<http://library.lclark.edu/reference/plagiarism/index.htm>

#### **Inform Me if You Have Worked on Your Paper Topic in Another Course**

It is occasionally acceptable for students to continue exploring a topic that they have written about in another course. However, I must be informed ahead of time if you intend to do this. You must come meet with me, and explain how your paper for me will differ substantially from work you have already gotten credit for. I have given failing grades to students who neglected to contact me about this.

#### **Grading Scale**

On all assignments turned in for my courses, student are given percentage grades that are at the very end of the semester combined to generate a final course percentage grade. The following percentage scores, along with some comments, describe my grading system.

Percent Range	Grade	Comments
100 - 95	A	Given for work that not only meets all expectations, but also contains an impressive level of unique insight and effort.
94 - 90	A-	Given for work that not only meets all expectations, but also contains some level of unique insight and effort. <i>You will</i>

		<i>have to work very hard, and go beyond the stated requirements of the assignment, to receive an A- or higher.</i>
89 - 87	B+	Given for very good work that meets all expectations.
86 - 84	B	Given for work that meets most expectations, but contains some problems.
83 - 80	B-	Given for work that meets some expectations, but contains numerous problems.
79 - 77	C+	Given for work that is passing, yet somewhat problematic.
76 - 74	C	Given for work that is passing, yet quite problematic.
73 - 70	C-	Given for work that is passing, yet very problematic.
69 - 0	D/F	Given for unsatisfactory work.

### **Keep Multiple Copies of all Your Work**

No credit can be given for any course work that is lost (by you or me) or rendered un-retrievable because of computer problems. Always keep a duplicate copy of your paper or any other course work in a safe place (such as Webdisk). Keep extra copies of all your assignments until after the semester ends and you have received your official grades from the Registrar's Office.

### **Keep Track of Papers for Letters of Recommendation**

I am often asked to write letters of recommendation for students. I am able to write a more useful, detailed letter, if you can provide me with titles and brief summaries of papers you wrote in my class. So, I encourage you to keep a permanent record of titles/summaries of papers you wrote in my classes. You will then be able to consult this record years later, when you want a letter of recommendation. This is a good thing to do for your other classes, too.



*"The road to truth is a difficult one...  
You must work hard to walk on it!"  
—Bodhidharma*