Quantitative Research Methods I
16:300:511
Fall Semester, 2014
Room 208, GSE

Instructor: Gregory Camilli

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Office Hours: Tuesdays 2:30 to 4:30 *and by appointment* (best for sufficient time)

Office Location   GSE building, Room 325

Meeting Details: Classes will meet Wednesdays from 4:50 to 7:30 PM in the computer lab (room 208) of the Graduate School of Education building. Course runs from 9/3 to 12/10; I will be available after 12/8 by email only. We will be conducting class the week of Thanksgiving.

Texts and Materials:
        This is not an online course, but the course material *Statistical Reasoning* is offered through the Open Learning Initiative (OLI) at Carnegie-Mellon University. It costs $25 to register. Directions for creating your own student account are given on the second page of the syllabus. Required reading material for the course will also be loaded to saikai.

Software:
        Microsoft Excel (required); SPSS (required)

        Both are available for use in the GSE computer lab (room 208 of the GSE). Alternatively, you can obtain the IBM® SPSS® Statistics Standard GradPack from http://www.studica.com or other online retailers. It's best to get the latest version (V22), but any recent version will suffice. While you can choose to use different software, you should keep in mind two points: (1) I will provide support only for excel and SPSS, (2) it is my experience that most students using alternative software have encountered difficulties. Some support for the software package R is provided on the course website at OLI.

        We will often be downloading excel files from OLI and reading those files into SPSS. It's important to become familiar with both SPSS and excel even if there is overlap in the procedures and functions they provide.

Overview:
        This course provides an introduction to statistical methods. No mathematical knowledge beyond basic algebra is required. An introduction to research design will also be provided.

Course Goals:
1.   To develop the conceptual and statistical knowledge needed to analyze data from experiments up to one-way ANOVA.
2.   To learn about research design and threats to internal and external validity.
3.   To develop the language and concepts necessary for interpreting and reporting results from statistical studies.
4.   To gain facility with SPSS software.

Creating a Student Account for OLI

Follow the steps below to register for academic course materials offered by the Open Learning Initiative.

1. Go to the Open Learning Initiative (OLI) website: http://oli.cmu.edu. In the upper right hand corner of the site, click "Register" and fill out the form.

2. On the **"Confirm Your Account Information"** page, review the account information you entered. If everything is correct, click the "Confirm Account" button. If not, click "Edit Account" to make your changes.

Important Note: the only account setting that can't be changed after you confirm your account is your Account ID.

3. Read the statements in the **"Online Consent Form"** and select "I Agree" or "I Do Not Agree" then select "Submit."

4. Under "My Academic Courses" enter your Course Key and click "Go."

Your Course Key is 16-300-511

5. Review the course details to make sure that you are registering for the correct course, and click "Register."

6. You will reach the **"Payment Required"** page. Click on the "pay by credit card" button.

7. On the Carnegie Mellon credit card payment page enter your billing information and click "Submit." If your transaction is successful, you will see a receipt page. Save this page for your records.

8. Click the return link at the bottom of the receipt page and you will be taken back to your OLI home page.

9. Under **"My Courses"** you will see your registered course. You can double-check to make sure the correct course appears by confirming that the correct Course Key and instructors are listed.

10. Each course has its own unique content and therefore unique technical components. It is important for you to perform the System Test and Configure (under course materials under syllabus).

Course Outline:

Class	Date	Module	Topic	Assignment	AAO
1	9/3		Review syllabus; OLI course registration	No	2-5
2	9/11	1	Examining Distributions	Yes	6-9
3	9/17	2	Examining Relationships	Yes	10-12
4	9/24	3	Sampling	Yes	16-17
5	10/1	4	Designing Studies	Yes	14-15
6	10/8		Cronbach's UTOS (readings on sakai)	Yes	18
7	10/15	5	Probability	Yes	19
8	10/22	6	Random Variables	Yes	20
9	10/29	7	Sampling Distributions	Yes	22
10	11/5	8	Inference, Estimation	Yes	24
11	11/12	9	Estimation	Yes	25
12	11/19	10	Hypothesis Testing, Readings	Yes	26-27
13	11/26	11	Inference for Relationships	Yes	28-29
14	12/3	12	Inference for Relationships (cont.)	Yes	30
15	12/10		Final Examination	No	31

Attendance:

Your attendance at class meetings is very important, particularly because we'll meet only once per week. Please bring any necessary planned absences to my attention ahead of time. My policy is that if you miss class, your homework is still due prior to the next class meeting.

Evaluation:

Your performance in this course will be evaluated based on the homework, and one final examination.

Homework	50%
Final Examination	50%

Due dates for homework are given on the OLI website. You can choose to complete homework problems early, but late assignments will not be accepted. For the final examination, 25% of the questions will be selected randomly form the homework problems and given verbatim; another 25% will be based closely on homework problems. The remainder of the exam will consist of one essay question.

The final exam must be taken in class on December 10. It cannot be taken earlier or later.

Policy on Academic Integrity:

Please refer to the Policy on Academic Integrity for Undergraduate and Graduate Students at http://teachx.rutgers.edu/integrity/policy.html. I will follow this policy without exception. It is your responsibility to be familiar with the terms of this policy. As graduate students you are held to a higher standard than undergraduates. Any unauthorized help on assignments or examinations is a serious violation of academic integrity.