

Fall, 2013 -- Course Information Sheet -- RESCH-GE.2003

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Prerequisites: RESCH-GE.2001-2002 or the equivalent

Meeting Times/Location: Tuesdays, 3:30 pm to 6:10 pm in GCASL Room 365

Lab Section Meeting Times/Rooms: Attendance in lab is strongly recommended and encouraged. Lab meets on Thursdays from 3:30 pm to 4:45 pm in Tisch, LC19. The lab provides additional SPSS and STATA demonstrations of what is discussed in class, and hands-on guidance for homework assignments.

Course Goals: This course extends the material covered in RESCH-GE.2001-2 by examining more deeply multiple regression/correlation as a general and flexible system for analyzing data in the behavioral, social, and health sciences. In addition to covering more advanced topics related to traditional multiple regression/correlation, the course examines ANOVA and ANCOVA as special cases of the general linear model. Logistic regression also is covered. Logistic regression does not fall under the general linear model heading as it applies when the dependent variable is categorical, not continuous. The software packages, SPSS and STATA, are used to give students hands-on experience with topics covered. The course aims to provide graduate students with foundational skills and knowledge for analyzing quantitative data.

Course Orientation: A conceptually oriented, nonmathematical approach is used. The course is not appropriate for students seeking to learn the mathematical theory underlying these techniques.

Course Materials:

Website: Handouts, lecture notes, readings, homework assignments, and general information will be posted under *Resources* on our My Classes course website. Lecture notes will be posted on our class website for each lecture under *Resources*. You are advised to download these notes prior to each lecture and bring a copy of them to class, either as hard or soft copies to facilitate note taking. Along with lecture notes, all data sets used in a lecture also will be posted under *Resources* so that you may review and replicate on your own whatever analyses have been carried out in class.

Texts: The course lecture notes serve as the primary text for the course; the following textbooks, available at the NYU Bookstore, are useful as an additional source of information and future reference:

Cohen, P., Cohen, J., West, S.G., & Aiken, L.S. *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*, 3rd edition, Lawrence Erlbaum Associates. [C]

Warner, R. M. *Applied Statistics: From Bivariate Through Multivariate Techniques*, 2nd edition, Sage Publications, Inc. [W]

Computer Labs (Virtual and Actual):

NYU offers a *Virtual Computer Lab* (VCL) to all NYU degree-seeking students with active e-mail accounts. Students who qualify will see the VCL channel on the **Academics** tab in NYUHome. To access the VCL: Log into NYUHome (home.nyu.edu); Select the **Academics** tab, then scroll down until you see the "Virtual Computer Lab" channel; Click **VCL Log In**; Once on the VCL page, click **Log Into the VCL Now!**; Enter your **NetID** and **password**; Click **Log In**. **Note:** The first time you log into the VCL, you will be prompted to install the Citrix ICA plug-in.

Both SPSS (version 20) and STATA (version 11) are available through the VCL, and also through the *Actual Computer Labs*.

SPSS version 20 is available at the following Actual Computer Labs:

Kimball Hall, 3E (Windows) [This lab does not require swiping your ID]
Fourth Street Academic Technology Center (Mac and Windows)
Washington Place Technology Center (Mac and Windows)
Third Avenue (Mac and Windows)
Kimmel Center (Mac and Windows)

STATA (version 11) is available at all of the above computer labs, but for Kimball Hall, and a Mac version is not available at Third Avenue.

For a current list of software available by location, please see the [ITS Software Applications by Location](#) page.

Course Requirements & Grading:

Homework: Practicing what has been covered in class is essential to learning statistics. HW will be assigned, collected, and graded each week. All students are responsible for completing all homework assignments on time and raising related questions in class.

Grading:

10% Class attendance and participation

90% Weekly computer-based homework sets (approx. ten in all)

Syllabus:

FALL, 2013 -- INTERMEDIATE QUANTITATIVE METHODS -- RESCH-GE.2003			
Month	Day	Topic	Reading (C & W)
September	3	Statistical Procedures: A Conceptual Map; Univariate & Bivariate Statistics -- A Review	C -- pp. 2 – 36; W – ch. 1 - 9
	10	Statistical Control: The Two-Predictor Case	C -- pp. 37-62; W -- ch. 10 & 11
	17	The k Predictor Case: Model Building Strategies: Simultaneous, Hierarchical, and Stepwise Approaches; Statistical Inference in Multiple Regression	C -- pp. 64-99 W – ch. 14
	24	Nonlinear Transformations and Regression Diagnostics -- Checking and Addressing Underlying Assumptions	C -- pp. 101-150
October	1	Critiquing an article that uses MR	Okazaki, 1997 (posted on our website)
	8	Interactions -- The Case of a Dichotomous and Quantitative Variable; the Case of Two Quantitative Variables	C – pp. 255-300 W – ch. 15
	15	<i>MIDTERM BREAK--NO CLASS</i>	
	22	<i>Post Hoc</i> Probing of Interactions (using SPSS MODPROBE & STATA commands)	C – pp. 255-300
	29	Mediation (using SPSS INDIRECT); Intro to Path Analysis	Baron & Kenny, 1986; Preacher & Hayes, 2004 (posted on our website) W -- ch. 16
November	5	From Single Predictors to Sets of Predictors: Qualitative Scales using Dummy Coding (Indicator Variables), Quantitative Scales, Analytic Strategies, Proportion of VAF, Tests of Inference	C – pp. 301-342 W – ch..12
	12	Multiple Regression as a General Linear Model -- ANOVA as a Special Case of GLM	C – pp. 343-389 W – ch. 13
	19	Multiple Regression as a General Linear Model -- ANCOVA as a Special Case of GLM; Lord's Paradox	C – pp. 343-389 W – ch. 17
	26	When the DV is logged; Power Polynomials	C – pp. 193-214
December	3	Logistic Regression -- When the DV is Dichotomous (Generalized Linear Equations)	C -- pp. 479-519 W – ch.23
	10	Logistic Regression, Cont'd; Characterizing Differences among Methods Covered; Wrapping Up.	C – pp. 479-519 W – ch. 23