

## **EDLD 608 WORKSHOP: QUANTITATIVE METHODS IN EDUCATIONAL RESEARCH**

4 Credits – CRN 26251  
University of Oregon – College of Education - Educational Leadership Area

### **2006 WINTER Term Syllabus**

Meeting Days/Time: **Tuesdays 5:00-8:50 pm** (1700-2050)

Location: **Education 151**

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### **COURSE DESCRIPTION AND OBJECTIVES**

EDLD 608 is an experimental course being offered winter term, 2006 only. The purpose of the course is to provide students with exposure to several quantitative techniques used in educational research in a seminar style format. Four topics will be covered in the course during winter, 2006: 1) Meta-analysis, 2) Multiple Regression, 3) Multilevel Modeling (HLM), and 4) the Analysis of Change (longitudinal research). Emphasis in the course is on the mastery of concepts and principles and in the development of critical analysis skills in understanding research using the covered techniques.

### **TEXTBOOKS & READING MATERIALS**

There are no required texts for the course, however several texts are recommended for purchase. There are packets of readings that are required for each of the four topics and additional resources are listed in the bibliography below.

#### **Recommended Texts:**

Pedhazur, E. J. (1997). *Multiple regression in behavioral research*, 3rd Ed. Orlando, FL: Harcourt Brace College Publishers.

Raudenbush, S. W., & Bryk, A. S. (2001). *Hierarchical linear models: Applications and data analysis methods* (2<sup>nd</sup> ed.). Newbury Park: Sage.

Rosenthal, R. (2001). *Meta-analytic procedures for social research*. Beverly Hills, CA: Sage.

## Bibliography

### **General:**

- Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric Theory*. New York: McGraw-Hill, Inc.
- Dillon, W.R., & Goldstein, M. (1984). *Multivariate analysis: Methods and applications*. New York: John Wiley & Sons.
- Grimm, L. G., & Yarnold, P. R. (1995). *Reading and Understanding Multivariate Statistics*. APA books.
- Grimm, L. G., & Yarnold, P. R. (2000). *Reading and Understanding MORE Multivariate Statistics*. APA books.
- Harris, R.J. (2001). *Primer of multivariate statistics*. Mahwah, NJ: Erlbaum.
- Hays, W. L. (1981). *Statistics*. New York: Holt, Rinehart, and Winston.
- Norušis, M.J. (2001). *SPSS® 11.0 guide to data analysis*. Pearson Education.
- Pedhazur, E. J., & Schmelkin, L. P. (1991). *Measurement, Design, and Analysis*. Hillsdale, NJ: Erlbaum.
- Rosenthal, R., & Rosnow, R. L. (1991). *Essentials of behavioral research: Methods and data analysis*. New York: McGraw-Hill.
- Stevens, J.P. (2001). *Applied Multivariate Statistics for the Social Sciences* (4<sup>th</sup> ed.). Mahwah, NJ: Erlbaum.
- Tabachnick, B.G., & Fidell, L.S. (1996). *Using multivariate statistics* (3<sup>rd</sup> ed.). New York: Harper Collins College Publishers.

### **Meta-analysis:**

- Cooper, H., & Hedges, L. V. (1994). *The handbook of research synthesis*. New York: Russell Sage Foundation.
- Hedges, L. V., & Olkin, I. (1985). *Statistical methods for meta-analysis*. San Diego, CA: Academic Press.
- Hunter, J. E., & Schmidt, F. L. (1990). *Methods of meta-analysis: Correcting error and bias in research findings*. Newbury Park, CA: Sage.

### **Multiple Regression:**

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park: Sage.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2<sup>nd</sup> Ed.). Hillsdale, NJ: Erlbaum.
- Darlington, R. B. (1990). *Regression and linear models*. New York: McGraw-Hill.
- Fox, J. (1991). *Regression diagnostics*. Thousand Oaks: Sage.
- Jaccard, J., Turrisi, R., & Wan, C. K. (1990). *Interaction effects in multiple regression*. Thousand Oaks: Sage.
- Neter, J., Wasserman, W., & Kutner, M. H. (1989). *Applied linear regression models* (2<sup>nd</sup> Ed.). Homewood, IL: Irwin.

### **Multilevel Modeling:**

Goldstein, H. (1995). *Multilevel Statistical Models* (2<sup>nd</sup> ed.). London: Edward Arnold. Available in electronic form at <http://www.arnoldpublishers.com/support/goldstein.htm>.

Hox, J. J. (1994). *Applied Multilevel Analysis*. Amsterdam: TT-Publikaties. Available in electronic form at <http://www.ioe.ac.uk/multilevel/amaboek.pdf>.

Kreft, I. G., & de Leeuw, J. (2002). *Introducing multilevel modeling*. Thousand Oaks, CA: Sage.

Raudenbush, S., Bryk, A., Cheong, Y.F., & Congdon, R. (2000). *HLM5: Hierarchical linear and nonlinear modeling*. Lincolnwood, IL: Scientific Software International.

Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. London: Sage.

### **Analysis of Change:**

Collins, L. M., & Sayer, A. G. (2001). *New methods for the analysis of change*. Washington, DC: American Psychological Association.

Collins, L. M., & Horn, J. L. (1991). *Best methods for the analysis of change*. Washington, DC: American Psychological Association.

Gottman, J. M. (1995). *The analysis of change*. Mahwah, NJ: Erlbaum.

Singer, J. D. & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. Oxford: Oxford University Press.

## **COURSE STRUCTURE**

EDLD 608 Workshop is organized in a seminar format. The major activities consist of a combination of lectures and group discussions. The course will cover four major topics. For each topic there will be readings describing the relevant methods/techniques and providing background. For each topic there will also be articles that allow a "case-study"-type examination of the technique in application. Lectures will allow the instructor to introduce and explain technical material. Discussions will elaborate readings and allow the group to engage assigned reading materials, software, and interpretation.

## **COURSE REQUIREMENTS**

There will be no traditional quizzes or exams. Four reaction papers and a final critique paper are required as well as regular participation and discussion in the class.

**Reaction Papers:** Four reaction papers will be required. Each reaction paper will be type-written and 1-2 pages in length. Each reaction paper will detail student reactions, comments, and questions in response to the assigned reading. For complete credit, students will need to turn in their response to the assigned reading during the class meeting in which the readings are to be discussed. Reaction papers will be scored on a credit/no credit basis.

**Critique Paper:** Each student is required to submit a type-written review of issues surrounding one of the four topics considered in the class. The critique paper should be a 5-10 page summary paper describing the technique and issues in the proper use and interpretation of the technique. The critique paper is due on March 14<sup>th</sup>.

Additional procedures and grading rubrics for the reaction papers and critique paper will be provided in class.

Late work will be penalized a minimum of 10% after the due date. Work is due at the beginning of the class on the due date. Each student is responsible for submitting his/her own original work. Any instance of academic dishonesty (e.g., plagiarism) will result in a minimum of a score of zero for the assignment.

### GRADING POLICY

Final grade for this course will be determined based on 1) class participation, discussion, and engagement 20%; 2) reaction papers 45%; and 3) the critique paper 35%. Grading is pass/fail only.

**COURSE INCOMPLETES** will be offered only very rarely and in unusual circumstances that truly prevent the student from completing course work during the regular quarter schedule. Please see <http://interact.uoregon.edu/pdf/sas/AIncGrdCon.pdf> for university policy and procedure on incompletes.

### SCHEDULE OF TOPICS AND ASSIGNMENTS (schedule may change depending on our pace)

WEEK	TOPIC / ASSIGNMENT	READ BEFORE CLASS
<b>1 Jan. 10</b>	Introduction, Overview of topics and course structure	
<b>2 Jan. 17</b>	Meta-Analysis, Reaction paper 1	All M-A readings in packet
<b>3 Jan. 24</b>	No class or guest speaker TBA	
<b>4 Jan. 31</b>	Multiple Regression, Reaction paper 2	All MR readings
<b>5 Feb. 7</b>	Multiple Regression	
<b>6 Feb.14</b>	Multilevel Models, Reaction paper 3	All multilevel readings
<b>7 Feb. 21</b>	Multilevel Models	
<b>8 Feb. 28</b>	Multilevel Models	
<b>9 Mar. 7</b>	Analysis of Change, Reaction paper 4	All analysis of change readings
<b>10 Mar. 14</b>	Analysis of Change Critique Papers Due	
<b>11 Mar. 21</b>	Group Discussion of Critique Papers	

### ATTENDANCE POLICY

Attendance is required to succeed in this course and master the course material. If a student does miss class, it is the student's responsibility to get class notes, and handouts or other distributed materials. Contact the instructor in case of illness or emergencies that preclude taking quizzes as scheduled or attending class sessions. Messages can be left on the instructor's voice mail or e-mail at any time of the day or night, prior to class. If no prior arrangements have been made before class time, the absence will be unexcused.

### ACADEMIC MISCONDUCT POLICY

All students are subject to the regulations stipulated in the UO Student Conduct Code (<http://www.uoregon.edu/~conduct/>). This code represents a compilation of important regulations, policies, and procedures pertaining to student life. It is intended to inform students of their rights and responsibilities during their association with this institution, and to provide general guidance for enforcing those regulations and policies essential to the educational and research missions of the University.

## **CONFLICT RESOLUTION**

The mission of the College of Education is to “Make educational and social systems work for all.” Several options, both informal and formal are available to resolve conflicts for students who believe they have been subjected to or have witnessed bias, unfairness or other improper treatment. Within the College of Education, you can contact: Bill Young, COE Ombudsperson at 346-1401 or [wdyoung@uoregon.edu](mailto:wdyoung@uoregon.edu) or <http://education.uoregon.edu/ombuds>

Outside the College, you can contact:

UO Bias Response Team: 346-1139 or <http://darkwing.uoregon.edu/~brt/>

UO Conflict Resolution Services 346-0617 or <http://darkwing.uoregon.edu/~crs/>

UO Affirmative Action and Equal Opportunity 346-3123 or <http://aaeo.uoregon.edu/>

## **DIVERSITY**

It is the policy of the University of Oregon to support and value diversity. To do so requires that we:

- respect the dignity and essential worth of all individuals.
- promote a culture of respect throughout the University community.
- respect the privacy, property, and freedom of others.
- reject bigotry, discrimination, violence, or intimidation of any kind.
- practice personal and academic integrity and expect it from others.
- promote the diversity of opinions, ideas and backgrounds which is the lifeblood of the university.

## **DOCUMENTED DISABILITY**

Appropriate accommodations will be provided for students with documented disabilities. If you have a documented disability and require accommodation, arrange to meet with the course instructor within the first two weeks of the term. The documentation of your disability must come in writing from the Disability Services in the Office of Academic Advising and Student Services. Disabilities may include (but are not limited to) neurological impairment, orthopedic impairment, traumatic brain injury, visual impairment, chronic medical conditions, emotional/psychological disabilities, hearing impairment, and learning disabilities. For more information on Disability Services, please see <http://ds.uoregon.edu/>

## **EXPECTED CLASSROOM BEHAVIOR**

Classroom expectations include:

- Participating in class activities
- Respecting the diversity of cultures, opinions, viewpoints in the classroom
- Listening to fellow students, professors, and lecturers with respect
- Arriving on time, prepared for class
- Attending for the duration of class; not reading other materials, books, newspapers
- Turn off cell phones and other electronic devices
- Racist, homophobic, sexist, and other disrespectful comments will not be tolerated.

## **GRIEVANCE**

A student or group of students of the College of Education may appeal decisions or actions pertaining to admissions, programs, evaluation of performance and program retention and completion. Students who decide to file a grievance should follow the student grievance procedure, or alternative ways to file a grievance outlined in the Student Grievance Policy (<http://education.uoregon.edu/feature.htm?id=399>) or enter search: student grievance.

## **INCLEMENT WEATHER**

In the event the university operates on a curtailed schedule or closes, UO media relations will notify the Eugene-Springfield area radio and television stations as quickly as possible. In addition, a notice regarding the university's schedule will be posted on the UO main home page (in the “News” section) at <http://www.uoregon.edu>.

If an individual class must be canceled due to inclement weather, illness, or other reason, a notice will be posted via email. During periods of inclement weather, please check your email rather than contact department personnel. Due to unsafe travel conditions, departmental staff may be limited and unable to handle the volume of calls from you and others.