

1. **FOUN 7970**
Special Topics
3 credit hours
Prerequisite:

2. **Summer Semester 2007**
Meeting Time: Monday and Wednesday noon to 3:45 PM
Room: Haley Center
Instructor: Margaret E. Ross
4018 Haley Center
(334) 844-3084
rossma1@auburn.edu (the first 1 = one)
Office Hours: Monday and Wednesday mornings or by appointment

3. **Resources**

Publication manual of the American Psychological Association (any recent edition). Washington D.C., American Psychological Association. (recommended)

HLM 6: Hierarchical Linear and Nonlinear Modeling, SSI Scientific Software International, URL: <http://www.ssicentral.com>, ISBN: 0-89498-054-8

4. **Course Description**

This course is designed to provide students an in-depth understanding of both parametric and non-parametric repeated measures designs and an introduction to hierarchical (multilevel) linear modeling designs for nested data.

5. **Course Objectives**

Students will:

- Gain an understanding of parametric repeated measures designs.
- Apply knowledge of parametric repeated measures procedures by analyzing research problems and making decisions about the appropriate use of these procedures.
- Gain an understanding of non-parametric repeated measures designs
- Apply knowledge of non-parametric repeated measures procedures by analyzing research problems and making decisions about the appropriate use of these procedures.
- Apply knowledge of repeated measures analyses using SPSS. (Technology)
- Apply knowledge of repeated measures designs by interpreting results of statistical analyses.
- Gain an understanding of multilevel (nested) designs.
- Apply knowledge of multilevel (nested) designs procedures by analyzing research problems and making decisions about the appropriate use of these procedures.
- Apply knowledge of multilevel (nested) designs using HLM software. (Technology)
- Apply knowledge of multilevel (nested) designs by interpreting results of statistical analyses.

6. Tentative Course Content and Schedule

Class 1 May 21, 2007

- Syllabus
- Review of ANOVA using a Models Comparison Approach

Class 2 May 23, 2007

- Repeated Measures ANOVA with two levels and t-test
- Repeated Measures ANOVA with three levels
- Pairs/Groups (set up hypothesis/research question, generate data, and discuss possible group research project)
- Lab
 - Repeated Measures Sample using SPSS
 - Group generated data
 - Literature

No Class May 28 (Memorial Day)

Class 3 May 30, 2007

- Discussion of Repeated Measures Literature
- Mixed Model Repeated Measures ANOVA
- Two-Way Repeated Measures ANOVA
- Pairs/Groups (hypothesis/research question, generate data and further discussion of group research project)
- Lab
 - Mixed Model Sample (SPSS)
 - Two-way Sample (SPSS)
 - Group Generated Data (SPSS)
 - Literature (examples and problems)
- Assignment
 - Repeated Measures Problems Paper from AERA (if available)

Class 4 June 4, 2007

- Assumptions and Data Problems in Literature
- Discussion of AERA paper
- Introduction to Non-parametric repeated measures
- Walsh test
 - Pairs/Groups set up examples of different designs
- Review/practice for Quiz/mini-test
- Lab
 - Literature – Use of Walsh

Class 5 June 6, 2007

- Discussion of Literature (use of Walsh)
- **Quiz/mini-test**
- McNemar
- Cochran
- Lab
 - Class Data
 - Literature

Class 6 June 11, 2007

- Discussion of Literature
- Sign test
- Friedman
- Wilcoxon
- Review for mini-test (practice)
 - Lab
 - Run Data from Class
- Assignment
 - Literature

Class 7 June 13, 2007

- **Mini-test**
- Review of Regression and ANOVA through Regression (coding)
- Introduction to HLM
- Applications
- Estimation and Terms
- Centering
- Random Effects
- Random Effects ANOVA
- Lab
 - Download HLM
 - Run Data
 - Literature

Class 8 June 18, 2007

- Regression with Means-as-Outcomes
- Random-Coefficient Model
- Intercept and Slopes as Outcomes Model
- Lab
 - Run Data
 - Literature

Class 9 June 20, 2007

- Discussion of Literature
- Repeated Measures HLM
- Rank Order HLM paper (if available)
- Preparation for test
- Lab
 - Run Data
 - Literature
 - Round Table Preparation

Class 10 June 25, 2007

- Discussion of Literature
- **Test**
- Round Table Preparation (lab)

Class 11 June 27, 2007

- Round Table Presentations

7. Course Requirements/Evaluation

Learning Methods

Lectures, discussions, readings, class exercises, and lab assignments.

Student Assessment

Three Tests	65% (15% test 1, 25% test 2, 25% test 3)
Group Proposal	20% (see next page of syllabus for more information)
Presentation	5%
Lab & Assignments	10%

Attendance

Points are not attached to attendance directly. However, excellent class attendance is required to earn an A and to earn lab or other in-class points. I will note absences. If you need to be absent for school or work-related requirements, illness, or an emergency, you are allowed to make up points for no more than two classes. Students are responsible for initiating arrangements for missed work.

Proposal and Presentations

The following is the outline that will be used for this assignment. You will turn in your paper (4 to 6 pages double spaced excluding cover page and references) and present the research in round table session format. You must use a correlation/regression design taught in this class. If you do not use a correlation/regression design, I will not accept the paper.

Use the following major sections:

Introduction Section of 1 to 1 ½ pages (use title at top of page and DO NOT use "introduction" as a heading, the following information should be included in this major section)

- Argument of worth or purpose of the study
- Literature - Integrated by themes/points made
- Hypothesis or research question - written first but presented at the end of the literature section

Methodology Section (Methodology is the major heading and participants, measures, and procedures are all subheadings - information to include is in parentheses)

- Participants (descriptive statistics)
- Measures (Validity and Reliability important here! - describe scale(s), composite scores, how scores are used in the study)
- Procedures (detailed description of what you did step by step, data processing and analysis - how will you analyze the data and why)?

Results Section (Results is the major heading and no subheadings are needed, the following information should be included in this major section)– If you don't have data, make it up.

- Are **all** appropriate statistics clearly stated in APA style?
- Are tables or graphs appropriately used?

Discussion Section (Discussion is the major heading, the following information should be included in this major section)

- State results in words
- Discuss Limitations, including statistical assumptions

A more detailed rubric will be handed out closer to the time the proposal and presentation are due. The paper is to be written in APA style.

Grading Scale

- A: 90 – 100% and excellent class attendance (absent no more than two classes)
B: 80 – 89% and good class attendance (absent no more than three classes)
C: 70 – 79%
D: 60 – 69%
F: below 60%

8. Class Policy Statements

Class Attendance (see attendance requirements under section 7 above)

Late Assignments Policy

- Assignments turned in late will receive a 3% reduction in earned points per day. The only exception will be in the case of emergency.
- Except for work requiring calculations, all work must be typed or it will **not** be graded. Late penalty will be applied to work completed in writing and then turned in late in typed format for a grade.

Incompletes and Withdrawals

Grades associated with incomplete course work or withdrawal from class will be assigned in strict conformity to University policy (see Auburn University Bulletin). If you wish to drop this course you may do so by the 10th class day with no grade assignment. From the 10th class day to mid-quarter a W (withdrawn-passing) grade will be recorded in your transcripts. After this period withdrawal from the course will only be granted under unusual circumstances and must be approved by the Dean of the College of Education.

Academic Misconduct

The Department of EFLT recognizes university policy regarding academic misconduct. Violations include, but are not limited to: plagiarism, unauthorized assistance during examinations, submitting another's work product as your own, using another's words as your own without appropriate citation, sharing unauthorized materials with another that contain questions or answers to examinations, altering or attempting to alter assigned grades. In accordance with University policy regarding academic misconduct, students may be subject to several sanctions upon violations of the Student Academic Honesty Code. See the Tiger Cub publication for the current year for specifics regarding academic misconduct as well as student's rights and responsibilities associated with the Code.

Disability Accommodations

Students who need accommodations are asked to arrange a meeting with me as soon as possible. If you have a conflict with my office hours, an alternate time can be arranged. To set up this meeting, please contact me by e-mail. Bring a copy of your Accommodation Memo and an Instructor Verification Form to the meeting. If you do not have an Accommodation Memo but need accommodations, make an appointment with The Program for Students with Disabilities, 1244 Haley Center, 844-2096.