

Revised on 9/19/7 (Revised topics in red)
Fall 2007 PSYCHOLOGY 510-001/511-001 Syllabus

INSTRUCTOR

Mike Biderman;

Holt Hall 350; 423-425-4268. Let it ring at least four times to leave message. OGM gives home #.
840 Fort Wood Street; Chattanooga, TN 37403 423-267-2289 (9 AM - 9 PM). OGM gives mobile #.
Home phone: 423-267-2289; Mobile number: 423-316-9504 Cabin: 837-6338
Michael-Biderman@utc.edu; www.utc.edu/Michael-Biderman

REQUIRED TEXT/MATERIALS

- *Minium, E. W., Clarke, R. C. & Coladarci, T. (1999). Elements of Statistical Reasoning. ISBN: 0-471-19277-5. New York: Wiley. We've used this for several years. Used copies should be available.
- *Goodwin, C. J. (2002). Research in Psychology, 4th Ed.. New York: Wiley.
- *Green, S.B & Salkind, N.J. (2005). Using SPSS for Windows and Macintosh: Analyzing and Understanding Data, 5th Ed. . Upper Saddle River, NJ: Prentice-Hall.
- *Email account with ability to receive and open attachments that are Microsoft Office documents and SPSS files.
- *Microsoft Office 2000 or later. I'll be using Office 2007.
- *SPSS V15. In the past, a copy of this program has been provided by the University of Tennessee.
It is my understanding that the program will available for such distribution this year.
I do **not** recommend purchase of the "Student" version of SPSS.
- * I may hand out chapters from texts other than the above if I feel they'll add to your understanding of the material.

THIS COURSE

REVIEW AND EXTENSION OF BASIC STATISTICS

BASIC PSYCHOLOGICAL RESEARCH METHODS CONCEPTS

COMMON RESEARCH DESIGNS AND THE STATISTICAL ANALYSES APPROPRIATE FOR THEM

INTRODUCTION TO COMPUTER ANALYSIS OF PSYCHOLOGICAL DATA USING SPSS.

EXPECTATION

The course has a high difficulty level. It requires a lot of out of class work involving reading the textbooks, reviewing notes, and doing homework assignments. It requires a paper submitted at the end of the semester.

The course is not a cookbook. You will be expected to discover much of the information needed for successful performance in the course with minimal guidance from your instructor. The lectures can cover only part of the required material. You will be held accountable for **all** reading material whether it is covered in lecture or not.

You are encouraged to form study groups and to exchange information on lecture, readings, and homework assignments. However, all documents you submit to me must have been created by you. They cannot be copied in whole or in part from the work of others.

You are expected to do your own work on tests. Alternate forms of multiple choice tests may be used.

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Psychology 510/511 Order of Topics

Week	Minium, et. al. Chapter	Goodwin Chapter	Green, et. al. Unit/Lesson
1 8/21	Describing Data 1: Introduction 2: Frequency Distributions 3: Graphic Representation		Read all this to learn about SPSS. Unit 1: Getting Started with SPSS Unit 2: Creating and Working with Data files
2 8/28	Summarizing Data Numerically 4: Central Tendency		Unit 5: Creating Variables and Computing Descriptive Statistics
3 9/4	5: Variability Distributions 6: Normal Distribution and Standard Scores		
4 9/11	Relationships 7: Correlation	9: Correlational Research	Lesson 31: The Pearson Product Moment Correlation Coefficient Lesson 33: Bivariate Regression
5 9/18	Regression 8: Regression and Prediction		
6 9/25	Test 1: About 50 points.5:30-7:00 Probability & Hypothesis Testing 9. Probability & Probability Dists 10. Sampling Dists		
7 10/2	Hypothesis Testing & Estimation 11: Testing Hypotheses: Z t tests 12: Estimation 13: Testing Hypotheses: t-test		Lesson 22: One-Sample t test Lesson 23: Paired-Samples t Test Lesson 24: Independent-Samples t
8 10/9	Comparing Two Groups; Tests on Pearson r 14: Independent Samples t-Test 15: Dependent Samples t-Test 20: Chi-Square 21: Assumption-Free Tests (21.1-21.5 only)		Unit 6: T-Test Procedures Lesson 41: Two-Way Contingency Tables Analysis Using Crosstabs Lesson 42: The Mann-Whitney U Test Lesson 43: K Independent-Samples Tests: The Kruskal-Wallis and the Median Tests
9 10/16	16: Inferences about Pearson r Research Design issues	5: Introduction to Experimental Research 6: Control Problems in Experimental Research 9: Correlational Research	
10/23	Fall Break		
10 10/30	Power and Choosing Sample size 17: Power		
11 11/6	Test 2: About 50 points.5:30-7:00 Ethics	2: Ethics in Psychological Research	
12 11/13	Single Factor Designs 18: One-Way Analysis of Variance	7: Experimental Design I: Single-factor Designs	Lesson 25: One-Way Analysis of Variance
13 11/20	Factorial Designs 19: Factorial Analysis of Variance	8: Experimental Design II: Factorial Designs	Lesson 26: Two-Way Analysis of Variance
14 11/27	Quasi-Experimental Designs Meta-analysis; Paper due	10: Quasi-Experimental Designs	

FINAL EXAM:: Tuesday, December 11

75 Points, comprehensive with 30-40 points devoted to material covered since last exam.

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TESTS

About 175 points

Tests will be multiple choice and may contain short answer essay. The final may be all multiple choice.

HOMEWORK ASSIGNMENTS

Regular (Memo) Assignments About 30 Points total Due: End of class Late submissions: -0.5 pt/school day

There will be 8-10 regular assignments. Most of these will involve your analyzing data and then writing the results of that analysis in the form of a memo to a supervisor. Most are worth 4 points each. Some of these "regular" homework assignments may include end-of-chapter exercises or data from Green, et. al. These assignments will involve computer use.

Your grade on these homework assignments will depend as much on the quality of your writing as on the correctness of the analysis. All responses to test questions, homework assignments, etc., will be graded for writing quality and presentation quality. Points will be deducted for poorly written or poorly presented (e.g., illegible, unreadable) submissions.

Drill and Practice Homework: 8 Points (10 possible) Due: End of class Late submissions: -0.5 pt.

These problems are end-of-chapter exercises from Minium and Green, et. al. They are due at the beginning of class in the week we cover the assigned material with the exception of the first week of class. The Minium assignments must be done "paper and pencil". No computerized or copied submissions of the Minium assignments will be acceptable. Assignments are listed on the last page. There will be 10 such assignments, although only 8 are required. Each is worth 1 pt. This means you can skip 2 without slipping below 100%. Points greater than 8 will count and won't deduct from the extra-credit limit described below. If an assignment consists of both Minium and Green, et. al. material, each counts .5 point. Late submissions are worth .5 pt. max.

Research Proposal - 20 Points Due: Last day of class Late submission: -1 pt/school day

Propose a research project. The proposal must include sections analogous to the Introduction and Method sections of a research paper. The Introduction must contain a short literature review of at least 4 papers, a rationale for the proposed research, and hypothesized results. The Method section must contain specification of participants, power, instruments, procedures, and proposed analyses. Your paper must be original with this program. You may not drag out an undergraduate project, dress it up, and submit it for this project. You may, however, submit a paper based on the same literature as a paper in another course (e.g., PSY 506) in the program. These papers must have a different focus, however.

Homework assignments and tests will be identified with PIN's only.

Specifically, put your PIN on the back of last page of written homework.

Put no identifying information on the front of any page of homework - put only your PIN on the back.

Assignments submitted with name or identifying information other than the PIN may lose points.

You get ONE 3-day pass for regular homework: 1 HA can be up to 3 days late without penalty.

EXTRA CREDIT

10 Points max

There may be an opportunity to earn extra credit from participation by 1) grading PSY 101 tests, 2) participating in research conducted by faculty or students or 3) other projects assigned by me. **Limit on the number of points worth of extra credit is 10. In all cases you must have prior approval from me for each project in which you participate.** Extra credit points are added to your point total prior to computing the percentage of required points used to determine your grade. Extra credit will typically be earned at **1 point per 1/2 hour participation**. A fraction of a 1/2 hour will be worth 1 point. In the past, much of this extra credit has been earned helping grade the essay portion of PSY 101 tests.

GRADING SCALE

Grades in the course are based on the percentage of required points. The points you receive in all required and extra credit projects are totaled. That total as a percentage of the total required points is computed. The percentages for each letter grade are as follows. A percentage at the division between two grades will receive the higher grade.

A: 90-100% B: 80-90% C: 65-80% D: 50-65% F: 0-50%

PERSONAL HABITS

If you have any personal habits that may offend or bother other class members or me, please keep them in check. Such habits include but are not limited to snapping your gum, chewing ice or chips loudly in class, incessantly shuffling your notes, talking with other class members during lecture, and wearing noisy jewelry. **Do not use cell phones during class and during tests.**

EMAIL / WEB PAGE

Much information about the course will be distributed via Email. **You must have an Email account with the capability of receiving and opening Microsoft Office and SPSS attachments.** Course information may be available on my web page. It is now www.utc.edu/Michael-Biderman

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Drill and practice homework assignments

Submit handwritten responses to all exercises. Writing must be legible.

Minium, et. al. Exercises

Green, et. al. Exercises.

Due Topic

Lecture 2. Summarizing Data Numerically	
Minium Ch. 4 – 4, 5, 6, 8, 11	4-Lesson 19/5-Lesson 20 – 1 - 4
Minium Ch 5 – 2, 4, 5, 7, 10, 12	4-Lesson 20/5-Lesson 21 - 1,3,4
Lecture 3. Distributions	
Minium Ch 6 – 3, 6, 8, 9, 12, 15	
Lecture 4. Relationships and Regression	
Minium Ch 7 – 5, 6, 7 9, 10	Lesson 30 - 1 – 4
Minium Ch 8 – 1, 3, 9, 12	Lesson 32 – 5-7
Lecture 5. Probability and Hypothesis Testing	
Minium Ch 9 – 2, 6, 8, 10, 11, 12, 16, 20	
Minium Ch 10 – 5, 6, 7, 10, 11, 12, 16	
Lecture 7. Hypothesis Testing & Estimation	
Minium Ch 11 – 4, 8, 9, 13, 17, 18	
Minium Ch 12 – 4, 9, 10	
Lecture 8. t tests	
Minium Ch 13 – 2, 5, 8, 9, 13, 15, 19	
Minium Ch 14 – 4, 8, 11, 13, 14, 20	Lesson 23 – 1 - 5
Minium Ch 15 – 2, 5, 6, 8, 15	Lesson 22 – 6 – 8
Lecture 9. Comparing Two Groups; Pearson r	
Minium Ch 16 – 4, 5, 6, 9, 11, 14, 16	
Minium Ch 20 – 5, 8, 9, 13,	Lesson 40 – 1-3
Minium Ch 21 – 2, 3, 4, 7,	Lesson 41 – 1-4
Lecture 10. Power	
Minium Ch 17 - 2, 3, 4, 8, 10	
Lecture 12. Single-Factor Designs	
Minium Ch 18 – 1, 2, 3, 6, 9, 11, 14, 18, 23	Lesson 24 – 4-6
Lecture 13. Factorial Designs	
Minium Ch 19 – 3, 4, 8, 9, 13, 14, 16	Lesson 25 – 1-4

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PSY 510/511 Guidelines for Research Proposal

Specific Guidelines

1. The paper should be written using the recommendations of the APA Publication Manual 5th Edition.
2. Form of the proposal should be as follows . . .
 - A. Title / Abstract page. Title and abstract. Abstract must be double-spaced, no longer than 100 words. 1 page maximum length.
 - B. Proposal body. Proposal must be double-spaced. It must be single-sided 8 ½ x 11 pages of text. Margins must be 1 inch on each side. Must begin on a new page. Use 10 or 12 point Times font.

Body must include the following sections:

Introduction – 3 pages maximum,
Method – 2 pages maximum,
Results – 2 pages maximum.

Results should include analyses you would conduct and interpretation of desired results. See the publication manual for more details on these sections.

C. References, Appendices, Figures.

D. Filled-out IRB form. Download the appropriate form from the UTC IRB website.

3. The proposal must be of research that could actually be carried out by someone with resources such as those available at UTC. It need not necessarily be something you would want to do, although if you plan to do a thesis, this proposal represents a chance to begin the research process associated with the conduct of a thesis.

4. **The paper (most likely the Method section) must address the issue of power of the analysis, with a rationale for choice of sample size taking power and effect size into account.**

5. Grading will be on 1) completeness, 2) physical appearance, 3) writing quality, 4) appropriateness of proposed analyses and hypothesized results, 5) appropriateness of relationship of articles referenced to proposed research.

6. I will keep the original that you submit. I will return copies of those sheets I have marked up. You should make a copy of the complete proposal prior to submitting it to me.

7. Put only your PIN on the back of last sheet of the proposal. **Do not put any identifying information on the front of any sheet. If you feel compelled to put a name on the front, it must be a fake name.**

8. Submit only paper, stapled in the upper left hand corner. Don't put your submission in a folder or envelope or binder.