

# Psychological Research Design and Analysis (Psych 302)

## Syllabus

BYU Motto: The Glory of God is Intelligence

Class Motto: Seek ye out of the best books words of wisdom; seek learning, even by *study* and also by *faith* (D&C 88:118). Faith is a principle of *action* and of *power* (Bible Dictionary). Arouse your faculties, even to an *experiment* upon my word, and *exercise* a particle of faith (Alma 32:27).

Class Quotes: “To be able to understand what something is you have to be able to use it.” Plato

“The best way to learn the truth of the Gospel of Jesus Christ is to test it.” Gordon B. Hinckley

“The time will come when no man or woman will be able to endure on borrowed light. Each will have to be guided by the light within himself.” Heber C. Kimball

“We have never been encouraged to be blindly obedient; it is an intelligent obedience that characterizes members of the church.” L. Tom Perry

“The problems of this world cannot be solved by the level of thinking that created them.”

Albert Einstein

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### **REQUIRED PACKET:**

Steffen, P.R., & Haslam, M. (2008). *A Student Guidebook for Conducting Research in Psychology: A Step-by-Step Guide for Conducting your own Research Project*. Provo, UT: BYU Academic Publishing.

### **REQUIRED TEXT:**

American Psychological Association (2001). *Publication Manual of the American Psychological Association* (5<sup>th</sup> ed.). Washington, DC: American Psychological Association.

### **IMPORTANT POINTS:**

**1. This is a time intensive class that will require a lot of work.** The BYU undergraduate catalog states that “The expectation for undergraduate courses is three hours of work per week per credit hour for the average student who is appropriately prepared; much more time may be required to achieve excellence (p. 48).” **This is a three credit class so the expectation is at least 9 hours per week out of class spent in reading and assignments.**

**2. PSYCHOLOGY 301 (PSYCHOLOGICAL STATISTICS) OR THE EQUIVALENT IS A PREREQUISITE FOR THIS CLASS**

## CLASS OVERVIEW

### RESEARCH PROJECT

The goal of the class is to learn how to conduct research. Perhaps not surprisingly the best way to learn how to conduct research is by conducting research. Class members will be divided into research teams that will select a research topic, develop testable hypotheses after reviewing the research literature, design a study capable of adequately testing the hypotheses, conduct the study carefully following the planned methods and analyze the resulting data, and then communicate those results via poster and PowerPoint presentations and turning in a final paper.

The class is divided into four phases that correspond to the four phases of conducting research: beginning the research process (Madman phase); designing the study (Architect phase); conducting the study and analyzing the data (Engineer phase); and communicating the results of the study to others (Communicator phase).

Basic knowledge and principles of research methods will be tested via four multiple choice reading quizzes, a midterm exam, and a final exam. The multiple-choice reading quizzes are given to encourage reading the relevant chapters before coming to class. The quizzes will be administered on blackboard and must be completed before class time. The midterm and final examinations will contain essay, short answer, and multiple choice questions.

### TWO KEY FACTORS TO GETTING A GOOD GRADE IN THIS CLASS

COME PREPARED TO PARTICIPATE. Bring the class packet and research team materials to each class. Everything discussed in class is directly relevant to helping you conduct your research project. You will usually also be given some time in class to work as a team on your project. The research packet has been written to help you through the research process in a step-by-step fashion. Reading the packet carefully will significantly help you in your project.

TEAM PARTICIPATION AND EVALUATION. Each week you will meet as a research team and work on your experiment. This will give you the chance to apply the principles that are being discussed in class and will let you gauge your understanding of research principles. Your peers on your research team will rate the amount of effort you have put into the team assignments. The rules you establish as a team will also be used to judge your team participation. Attendance will also factor into your peer rating score (if you are not attending team meetings, you are not helping complete the team project).

### KEY ASSIGNMENTS IN THIS CLASS

RESEARCH STATEMENT AND ANNOTATED REFERENCE LIST. The end result of the first phase of the research process (Madman Phase) is the research statement and annotated reference list. The research statement presents what specifically you will be studying, namely your theory and hypotheses. The annotated reference list presents a brief review of the relevant research articles that have been done regarding your topic.

RESEARCH PROPOSAL. The end result of the second phase of the research process (Architect Phase) is the research proposal. The research proposal builds off of the research statement and annotated reference list so you have really already begun working on the proposal. The IRB proposal will be completed as a team and will receive a grade. A copy of the proposal forms you will need can be obtained from the BYU IRB (institutional review board) at <http://orcadev.byu.edu/>. Each student is also required to go through the IRB tutorial and turn in the certificate of completion with the IRB proposal. This training exercise is found at the same web address. Research projects require previous approval from Dr. Steffen and the Institutional Review Board (IRB) before beginning.

SPSS DATASET AND STATISTICAL ANALYSES. The end result of the third phase of the research process (Engineer Phase) is a completed SPSS dataset and statistical analyses of your obtained data. This tends to be a more complex undertaking and significant time and attention will be given in class to using SPSS, creating a dataset, and analyzing data.

POSTER AND POWERPOINT PRESENTATIONS, FINAL PAPER. The end result of the fourth phase of the research process (Communicator Phase) is the creating and presenting of poster and PowerPoint presentations and writing up the final paper. In the second to last week of class, you will present a poster of your experimental findings. In the last week of class, you will present your experiment using PowerPoint. For the final paper, the first complete draft of the final paper is due at the beginning of the 12<sup>th</sup> class (two weeks before the last class). The final team experiment paper is due at the beginning of the last class- **no exceptions**.

### **READING QUIZZES AND EXAMS**

For each phase of the research process there will be a beginning quiz on Blackboard. The class packet is organized around conducting your own experiment. It is therefore helpful for you to read the material before beginning the given phase of the research process and the quizzes are provided as an encouragement to do so. Quizzes will consist of 25 multiple choice questions and you will be given 45 minutes to complete the quiz. It is highly recommended that you read the material before starting the quiz. The midterm and final exams will be in the testing center and will consist of multiple choice, short answer, and short applied essay questions.

### **OTHER INFORMATION**

#### **LATE ASSIGNMENTS**

Late assignments will be docked one full grade for each day (or fraction thereof) late. If an assignment is late by 3 days or more, the maximum possible grade is a C-. There will be **no** exceptions.

#### **PLAGIARISM, ACADEMIC HONESTY, AND THE HONOR CODE**

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact be your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university. It is an act of plagiarism to "borrow" ideas or quotes from former students' old papers and from the papers of students presently taking the course with you. Plagiarism also includes quoting or paraphrasing passages from any of your references without giving proper credit to the real authors (i.e., an APA-style citation), because doing so implies that this information came from you. Presenting the ideas of others as one's own is called plagiarism. Plagiarism, as defined by the BYU Honor Code, is a form of intellectual theft. It is an act of fraud; it is dishonest, deceitful, unethical, and can lead to serious and lasting negative consequences for your academic and professional career.

Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and my own expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 422-2847 if you have questions about those standards

#### **PREVENTING SEXUAL HARASSMENT**

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education and pertains to admissions, academic and athletic programs, and university-sponsored activities. Title IX also prohibits sexual harassment of students by university employees, other students, and visitors to campus. If you encounter sexual harassment or gender-based discrimination, please talk to your professor; contact the Equal Employment Office at 801-422-5895 or 1-888-238-1062 (24-hours), or <http://www.ethicspoint.com>; or contact the Honor Code Office at 801-422-2847.

#### **STUDENTS WITH DISABILITIES**

Brigham Young University is committed to providing a working and learning atmosphere that reasonably accommodates qualified persons with disabilities. If you have any disability which may impair your ability to complete this course successfully, please contact the Services for Students with Disabilities Office (422-2767). Reasonable academic accommodations are reviewed for all students who have qualified, documented disabilities.

Services are coordinated with the student and instructor by the SSD Office. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures by contacting the Equal Employment Office at 422-5895, D-285 ASB.

### **LEARNING OUTCOMES**

Each program at BYU has developed a set of expected student learning outcomes. These will help you understand the objectives of the curriculum in the program, including this class. To learn the expected student outcomes for the programs in this department and college go to <<http://learningoutcomes.byu.edu>> and click on the College of Family, Home and Social Sciences and then this department. We welcome feedback on the expected student learning outcomes. Any comments or suggestions you have can be sent to <[FHSS@byu.edu](mailto:FHSS@byu.edu)>.

### **FLU POLICY**

As are all large communities, BYU is preparing for the potential of the H1N1 influenza virus to spread rapidly throughout the campus during the coming winter. Details of BYU's preparation, and advice on what you can do to prepare, can be found at [flu.byu.edu](http://flu.byu.edu). Please read it! In order to contain any possible infection, the administration has advised course instructors to ask any student who is feeling sick with flu-like symptoms (fever with either sore throat or cough) to remain home, away from class and away from all large gatherings. Sick students should remain at home until at least 24 hours after the fever has gone away. Students should also call their doctor or the student health center for advice as soon as possible.

The administration has asked course instructors to provide adequate make-up opportunities for all work missed during a flu-like illness. Accordingly, I will allow all time as needed to miss class during an illness and to make up work at a reasonable time afterward, provided the student provides a doctor's note to document the illness. ALL students who feel sick with fever and sore throat or cough should call the doctor and visit if so advised. If advised to visit the doctor, please obtain a note whether or not you are diagnosed with the flu! When you are ill please call or email your TA or the instructor as soon as possible, and *continue to communicate* with us until you are well. You should also be in contact as much as possible with one or two class members, in order to keep up on what you miss. We will try to facilitate class communication from the beginning of the semester.

For your protection, your instructors will follow the same rules! If your instructor is sick he or she will try to find a replacement to carry the class forward, else will notify students as soon as possible about a class cancellation.

## GRADING

	<b>TOTAL POINTS</b>	<b>GRADE</b>
<b><u>PHASE I: MADMAN</u></b>		
READING QUIZ 1	50	_____
TEAM GRADE AND APPLICATION ACTIVITIES	25	_____
RESEARCH STATEMENT AND ANNOTATED REFERENCE LIST	50	_____
<b><u>PHASE II: ARCHITECT</u></b>		
READING QUIZ 2	50	_____
TEAM GRADE AND APPLICATION ACTIVITIES	25	_____
RESEARCH PROPOSAL	50	_____
<b>MIDTERM EXAMINATION</b>	200	_____
<b><u>PHASE III: ENGINEER</u></b>		
READING QUIZ 3	50	_____
TEAM GRADE AND APPLICATION ACTIVITIES	25	_____
SPSS DATASET AND STATISTICAL ANALYSES	50	_____
<b><u>PHASE IV: COMMUNICATOR</u></b>		
READING QUIZ 4	50	_____
TEAM GRADE AND APPLICATION ACTIVITIES	25	_____
POSTER AND POWERPOINT PRESENTATIONS	50	_____
FINAL PAPER	100	_____
<b>FINAL EXAMINATION</b>	200	_____
<b>TOTAL POINTS</b>	1000	_____
<b>FINAL GRADE</b>		_____

## **IMPORTANT DATES**

**Week 2 (Sept. 9): Reading Quiz #1 (Introduction and chapters 1 to 3)**

**Week 3 (Sept. 16): Draft of research statement/annotations**

**Week 4 (Sept. 23): Research statement and annotated bibliography due  
Reading Quiz #2 (Textbook chapters 4-6)**

**Week 5 (Sept. 30): Draft of Research proposal (specific aims, background and significance, hypotheses)**

**Week 6 (Oct. 7): Writing fellows conferences**

**Week 6 (Oct. 7-10): Midterm in testing center Thursday, Friday, and Saturday**

**Week 7 (Oct. 14): Research proposal due**

**Week 8 (Oct. 21): Reading Quiz #3 (Textbook chapters 7 to 10)**

**Weeks 8-10 (Oct. 21 to Nov. 4): Collect data (as soon as you receive IRB approval)**

**Week 11 (March 18): Reading Quiz #4 (Textbook chapters 11 to 12)**

**Week 11 (March 18): Experimental data collected and entered into a SPSS dataset and brought to class for analysis**

**Week 12 (March 25): Complete draft of final paper due (bring hard copy to class and email to Dr. Steffen)**

**Week 13 (April 1): Poster due, posters presented in class, writing fellows conferences**

**Week 14 (April 8): PowerPoint due (email PowerPoint to Dr. Steffen), PowerPoint presentations in class**

**Week 14 (April 8): Final Paper (email to Dr. Steffen)**

**Final Exam: during finals week in Testing Center**

# CLASS SCHEDULE

WEEK	Lecture / LAB	QUIZ/EXAM	ASSIGNMENT DUE (PROJECT MILESTONES)
<b>CONSTRUCTING KNOWLEDGE USING RESEARCH</b>			
1 1/7	<b>Developing the skills of an Expert Researcher</b> DEVELOP TEAM AND SELECT TOPIC		<b>Team contract (done in class)</b>
2 1/14	<b>Reading and Evaluating Research Articles</b> EVALUATE AND ANNOTATE ARTICLE	<b>Quiz Intro, 1-3</b>	<b>Topic chosen</b>
3 1/21	<b>Developing Theory and Hypotheses</b> CREATING A LOGICAL OUTLINE		<b>Draft of research statement/annotations</b>
<b>CONCEPTUALIZING AND DESIGNING RESEARCH</b>			
4 1/28	<b>Research Writing</b> THE DRAFT WRITING PROCESS	<b>Quiz 4-6</b>	<b>Research Statement and Annotated Bibliography</b>
5 2/4	<b>Designing your Experiment/ Ethics and the IRB</b> FILLING OUT THE IRB APPLICATION		<b>Draft of specific aims, background and significance, hypotheses</b>
6 2/11	<b>Meeting with Writing Fellows</b>	<b>MIDTERM in Testing Center</b>	<b>Writing fellows conferences</b>
<b>CONDUCTING AND ANALYZING RESEARCH</b>			
7 2/18	<b>The Logic of Experimentation</b> SPSS: ORGANIZING DATA		<b>Research proposal</b>
8 2/25	<b>Evaluating Experimental Manipulations and Data Quality</b> SPSS: DESCRIBING DATA AND <i>t</i> -TESTS	<b>Quiz 7-10</b>	<b>Collect data (as soon as IRB gives approval)</b>
9 3/4	<b>Analyzing Basic Experimental Designs</b> SPSS: GLM		
10 3/11	<b>Analyzing Advanced Experimental Designs</b> SPSS: GLM, INTERACTION AND COVARIANCE		
<b>COMMUNICATING RESEARCH RESULTS</b>			
11 3/18	<b>Writing the Results and Discussion</b> WRITING, EDITING, REVISING, AND APA STYLE	<b>Quiz 11-12</b>	<b>Experimental data entered into SPSS and brought to class</b>
12 3/25	<b>Creating and Presenting Posters and Papers</b> PUTTING IT ALL TOGETHER		<b>Complete Draft of Final Paper</b>
13 4/1	<b>Integration and Review</b> PRESENT POSTER		<b>Poster Presentations Writing fellows conferences</b>
14 4/8	<b>Presenting your Research Findings</b> PRESENT POWERPOINT		<b>PowerPoint Presentations Final Paper</b>
	<b>FINAL EXAM DURING FINALS WEEK</b>	<b>FINAL EXAM in Testing Center</b>	