

**Research Design & Analysis**  
**PSY 3392.0U1**  
**50708**  
**Summer, 2016**  
**Lecture: Tuesdays & Thursdays 10:00am-12:15pm**  
**Location: GR 4.204**

**Professor Contact Information**

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**Course Pre-requisites**

You must have completed PSY 2317 or STAT 1342 in order to take this course.

**Course Description**

Rigorous research practices are what define psychology as a scientific discipline. This course covers the scientific processes used by research psychologists to reach sound conclusions about the mind and behavior. Strategies for identifying meaningful hypotheses, implementing research practices, and interpreting and communicating research findings will be discussed.

**Student Learning Objectives/Outcomes**

Students will learn how to 1) evaluate the scientific merits of psychological studies 2) identify and frame a testable research question, 3) design an appropriate study to address this question, 4) implement statistical analysis strategies for examining generated data and 5) report study findings in APA format.

This course is designed to assist you in becoming a critical consumer of research. Students will be able to identify components of the scientific method, differentiate sampling procedures, research designs and analytical approaches, interpret methods and findings from assigned research articles and discuss ethical considerations in psychological research.

Students should come away from this course with the ability to formulate research hypotheses, describe appropriate research designs, interpret research reports and utilize APA style.

### Required Textbooks and Materials

1. Martin, D.W. (2008). *Doing Psychology Experiments* (Seventh Edition). Belmont, CA: Thomson Wadsworth.
2. McBride, D.M. and Cutting, J.C. (2013). *Lab Manual for Psychological Research* (Third Edition). Sage Publishers.

### Recommended Texts (Not Required):

1. Perrin, Robert. (2009). *Pocket Guide to APA Style* (Fourth Edition). Boston: Houghton Mifflin Company.
2. Publication Manual of the American Psychological Association (Sixth Edition)

### Assignments & Academic Calendar

We will cover the following topics in the order below. Dates are approximate and subject to change, as announced in class. You will want to bring both the Lab Manual and the Martin text to each lecture.

DATE	TOPIC	CHAPTER & ASSIGNMENT
<b>Week 1:</b>		
5/24/16	Course Introduction; Pre-Course Questions; Experimental Ideas;  In-class group activity;  Research Journal Handout;  Article Critique Assignment Handout	Martin Chap. 3
5/26/16	Experimental Ideas;  Scientific Method & Designs	Martin Chap. 3; Martin Chap. 1
<b>Week 2:</b>		
5/31/16	Scientific Method & Designs;  True vs. Quasi Experiment in-class activity	Martin Chap. 1;  <b>Due: Homework Lab Manual - Page 2 'Knowledge Exercise: What Do We Know and How Do We Know It?'</b>
6/02/16	Library Search Demonstration  APA Style- Assignment Lab Manual- Pages 86-104 'Sample APA Paper' & APA Style	

<b>Week 3:</b>		
6/07/16	How to do Experiments; Experiment set up in-class activity	Martin Chap. 2;  Due: Homework Lab Manual - Page 15 'Research Design Exercise'
6/09/16	<b>Exam 1</b>	<b>Exam 1- Chapters 1, 2, &amp; 3</b>  Scantron # 229630
<b>Week 4:</b>		
6/14/16	Activity-Naturalistic Observation In-Class Group Assignment  Scientific Ethics & Pseudoscience;  In-class ethics activity	Martin Chap. 5
6/16/16	Measuring and Manipulating Variables;  Operationally Defining Variables in-Class Activity (p. 18 of lab manual)	Martin Chap. 7;  <b>Due: Homework Lab Manual - Page 9 'Reading Journal Articles Exercise'</b> <i>(Note: as part of your assignment you will need to search the library data base for the accompanying article).</i>
<b>Week 5:</b>		
6/21/16	Between & Within Subject Designs;  Within vs. Between Subjects Exercises;	Martin Chap. 8;  <b>Due: Homework Lab Manual - Pages 28-29 'Learning Check-Ethics'</b>  <b>Due: Homework Lab Manual - Page 25 'Ethics Exercise Paper'</b>
6/23/16	Experimental Design: Single & Multiple Variable (Factorial Designs);  Factorial Designs in-class exercise	Martin Chap. 9

<b>Week 6:</b>		
6/28/16	Experimental Design: Single & Multiple Variable (Factorial Designs);  Factorial Designs & Graphing in-class exercise	Martin Chap. 9  <b>Due: Homework Lab Manual - Page 57 'Describing Main Effects and Interactions Exercises'</b>
06/30/16	<b>Exam 2</b>	<b>Exam 2- Chapters 5, 7, 8, &amp; 9</b>
<b>Week 7:</b>		
7/05/16	P-values, Power, Effect Sizes, Null Hypothesis Testing, Plotting Data;  In-class exercise Null & Alternative Hypothesis Testing	Martin Chaps. 12 & 13
7/07/16	P-values, Power, Effect Sizes, Null Hypothesis Testing, Plotting Data;  Graphing & Inferential Statistics in-class exercise (pages 33-35 of lab manual)	Martin Chaps. 12 & 13
<b>Week 8:</b>		
7/12/16	In-class Hypothesis Generation Exercise;  Lab Manual in-Class work pages 48-60	<b>Due: Article Critique Assignment</b>
7/14/16	<b>Exam 3</b>	<b>Exam 3- Chapters 12 &amp; 13</b>  <b>Due: Homework Lab Manual - Pages 31-32 'Describing Main Effects and Interactions Exercises';</b>  <b>Due: Homework Lab Manual - Pages 42-43 'Statistics With Excel Exercise'</b>
<b>Week 9:</b>		
7/19/16	Survey Research;  In-Class Activity 'Survey Research Exercise'	Martin Chap. 10
7/21/16	Single-Subject Designs, Non-experimental Designs	Martin Chap. 10
<b>Week 10:</b>		
7/26/16	Participant-Experimenter Interactions, Biases and Controls	Martin Chap. 4  <b>Research Journal Due</b>
7/28/16	<b>Exam 4 (Cumulative)</b>	<b>Chapters 1, 2, 3, 5, 7, 8, 9, 12 &amp; 13</b>

<b>Week 11:</b>		
8/02/16	Putting it all together- what we have learned	
8/04/16	Review of exams, material, questions	

### **Research Exposure Credits:**

All students enrolled in this core class must earn research exposure credits. Details about this requirement appear on the separate handout distributed on the first day of class and are posted at <http://bbs.utdallas.edu/undergraduate/rec.html> and in the BBS Information Center on eLearning. Students who fail to complete this requirement by the last day of classes will receive a grade penalty for one of the core courses in which they are enrolled.

### **Grading Policy**

1. Lectures. Lectures will provide you with a framework for understanding the reading. Lectures will generally NOT repeat the reading material; therefore, it is vital that you do the assigned readings on time AND attend class. It is advised that you read the chapters before lecture as this will help aid in your understanding of the presented material. Exams will cover material presented in lecture, readings, and assignments.
2. Assigned Readings (textbooks, journal articles, assigned readings, lab manual work).
3. Exams. You will have 3 non-comprehensive exams and a cumulative 4<sup>th</sup> exam. These exams will be in class.
4. Assignments. Includes homework assignments, in-class assignments & activities, group work, quizzes, an article critique, and a research journal. The details of these will be further discussed in lecture.
  - This course will include a fair amount of group work. Groups will be assigned by the professor and rotated throughout the semester. An integral component to being a researcher is being able to collaborate with others, discuss ideas, and propose solutions.

Your grade is based on the following, totaling a maximum of 540:

Exam 1	75 points
Exam 2	75 points
Exam 3	75 points
Exam 4	150 points
In-Class Quizzes	20 points
Homework Assignments	43 points
In-Class Activities	37.5 points
(Each in-class group activity is worth 2.5 points, totaling the above 37.5 points)	
Article Critique	15 points
Research Journal	30 points
Participation	19.5 points

The total points-to-grade conversion is listed below.

- A range  $\geq$  486 points (90-93% = A-, 94-96% = A, 97%-100% = A+)
- B range  $\geq$  432 points (80-83% = B-, 84-86% = B, 87-89% = B+)
- C range  $\geq$  378 points (70-73% = C-, 74-76% = C, 77-79% = C+)
- D range  $\geq$  324 points (60-63% = D-, 64-66% = D, 67-69% = D+)
- Anything  $\leq$  319 points (59%) is a failing grade

## Course Policies

### *Make-up exams:*

Make-up exams/assignments are only possible if you have a written medical excuse and in such cases make-ups will only be given for a one-week period after the exam/due date.

### *Extra Credit:*

Extra credit assignments will not be offered.

### *Late Work:*

Papers/homework turned in late will have 10% deducted for each day late (this counts weekend days). No work will be accepted after one week beyond the due date.

**Please note: Computer/printer/disk failures are not acceptable reasons for turning in assignments late. You are responsible for backing up anything you are working on.**

### *Assignments:*

All assignments and papers are required to be turned in via paper copy on the due date.

**E-mail copies will not be accepted unless otherwise specified.**

### *Class Attendance:*

Lectures will provide you with a framework for understanding the reading. Lectures will generally NOT repeat the reading material; therefore, it is vital that you do the assigned readings on time AND attend class. It is advised that you read the chapters before lecture as this will help aid in your understanding of the presented material. Exams will cover material presented in lecture, readings, and assignments.

### *Classroom Citizenship:*

Class participation is strongly encouraged and helps us adjust the pace of the course. If you don't understand something, then it is likely that many other students are confused too. Do ask questions during class to clarify confusing material. If a question occurs to you after class, or if you need help with any aspect of the course, don't hesitate to contact Dr. Miller or the TA's. I am available after class, by appointment, and you can also email questions and I will reply promptly.

Please turn off cell phones during class time. Students using laptops, remember that those seated behind you can see what is on your screen – no web surfing during lecture.

**Plagiarism** = taking credit for work done by someone else. This refers to (1) turning in a paper that includes work written by another student, or downloaded from the internet; or (2) including portions of previously published work without proper referencing. In this course you will learn how to properly refer to previously published papers. *Plagiarism is the intellectual equivalent of forgery, and it is never permissible. Any assignment that includes plagiarized material will automatically receive a grade of 0 (zero) - no exceptions.*

### **Comet Creed**

*This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:*

“As a Comet, I pledge honesty, integrity, and service in all that I do.”

### **UT Dallas Syllabus Policies and Procedures**

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

***The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor. The instructor reserves the right to alter the schedule, grading policies, office hours, etc. as necessary. If alterations must be made, students will be notified in advance.***

### **Student Conduct & Discipline**

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations, which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part I, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and

regulations (SU 1.602, 972/8836391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

### **Academic Integrity**

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details).

### **Email Use**

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

### **Withdrawal from Class**

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.



## **Student Grievance Procedures**

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

## **Incomplete Grade Policy**

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of F.

## **Disability Services**

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is: The University of Texas at Dallas, SU 22 PO Box 830688 Richardson, Texas 75083-0688

(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled

students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.