

Fall 2015

## PSYC 3300

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PSYC 3300-001 – Experimental Design and Methodology  
Fall 2015  
Monday-Wednesday-Friday 11:00 – 11:50am (labs to 12:30pm)  
GP 2078

Instructor: Dr. Jay Matherne      Office: GP 2044 /Phone: 280-5545    email: [jmathern@uno.edu](mailto:jmathern@uno.edu)  
Office Hours:                      MWF      12:00-1:30pm and by appt.

TA: David Stephenson              Office : GP 2064C                      e-mail : [ddsteph1@uno.edu](mailto:ddsteph1@uno.edu)  
Office Hours : TBA

Required Text: Evans, Annabel N. and Rooney, Bryan J. (2014) Methods in Psychological Research (3<sup>rd</sup> Edition). Thousand Oaks, CA: Sage Publications, Inc.      ISBN: 978-1-4522-6104-1  
(Note: The second edition can be used, but the research examples and data are different)

Prerequisite: PSYC 1310

Course Description: This course is designed to familiarize students with simple and advanced experimental designs, inferential statistics, scientific writing, and psychological research methodology. All students will demonstrate their understanding of experimental methods by conducting a small research project, to be written up in an APA-style paper. The project will also be presented to the class and instructor at the conclusion of the course.

Student Learning Outcomes:

1. To develop an understanding of the characteristics of science.
2. To be able to describe the characteristics of observational, correlational, and experimental research techniques.
3. To be able to choose the appropriate statistical technique to analyze data from each of the above research techniques.
4. To properly format and prepare an APA-style paper.
5. To produce and present simple research findings using a PowerPoint presentation.

Attendance: Attendance will be taken at all classes. Students who miss 0-3 classes will receive a 5 point bonus at the end of the semester. Students who miss more than 6 classes will have 1 point subtracted for each additional lecture missed. Absence excuses must be turned in in writing and no excuse notes will be accepted after the last day of classes.

Conduct: To ensure a quality learning environment, please turn off all cell phones and devices prior to the start of class and exams. Cell phone use, texting, and talking in class, except in the context of in-class discussions, is prohibited. Finally, tardiness is not accepted, especially for exams. Please do not disrupt the lecture/exam by coming in late. The instructor reserves the right to ask a student to leave class if his or her behavior is interfering with the learning process of the other students.

Exams: There will be a total of 3 exams. The exams will be worth 50 points and will typically be 30-35 multiple choice/matching questions and 3-4 short answer questions. All grades will be posted on Moodle. Make up exams will not be allowed except under extreme circumstances and with sufficient documentation. Practice exams for each exam will be available on Moodle.

**Quizzes:** There will be 6 quizzes during the semester, each worth 20 points. Only the highest 5 scores will be counted, so a student can miss one quiz without penalty. Make up quizzes are not allowed except under extreme circumstances.

**Research Project:** Each student will develop an original research project to demonstrate his or her ability to apply the methods learned in this course. Students may work in groups of up to 3 with instructor approval. However, all written assignments must be turned in by each student separately. The research project will be submitted in five components. All written assignments must be turn in as a hard (paper) copy by the end of class on the due date. The components and their assigned point values are listed below:

Research Proposal:	50 pts
Experimental Design	25 pts
Data Report	25 pts
Final Paper	50 pts
Presentation	50 pts

#### Disability

**Accommodations:** Students requiring special assistance due to a disability must have their disability documented by the Office of Disability Services who will determine the appropriate accommodations and communicate these to the instructor. Instructions for applying for accommodations can be found at <http://www.studentaffairs.uno.edu/ODS/>.

#### Academic Dishonesty Policy:

Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. For acts of academic dishonesty, instructors are allowed to assign a grade of "F" on an assignment where academic misconduct has occurred. Instructors may also assign a grade of "F" when it is felt that the violation on the academic exercise in question threatens the learning outcomes for the course. Please refer to the UNO Judicial Code for further information, including the consequences for acts of academic dishonesty. The Code is available online at [http://www.uno.edu/~stlf/policy%20Manual/judicial\\_code\\_pt2.htm](http://www.uno.edu/~stlf/policy%20Manual/judicial_code_pt2.htm).

**Grades:**

Exam 1:	50 pts.	(A=45-50, B=40-44, C=35-39, D=30-34, F=29-0)
Exam 2:	50 pts.	
Exam 3:	50 pts.	
Quizzes:	100 pts	
Research Proposal:	50 pts	
Experimental Design	25 pts.	
Data Report	25 pts.	
Final Paper	50 pts.	
Presentation	50 pts.	
(Attendance Bonus	5 pts.)	
TOTAL= 450 pts		

<b>Final Grades:</b>	A = 90-100% (405 - 450 pts.)	B = 80-89% (360 - 404 pts.)
	C = 70-79% (315 - 359 pts.)	D = 60-69% (270 - 314 pts.)
	F = Below 60% (269 - below)	

# PSYC 2300 - TENTATIVE COURSE OUTLINE

<u>Date</u>	<u>Chap.</u>	<u>Topic</u>	<u>Assignment / Lab / Quiz</u>
8/19		Introduction to Class	
8/21	1	Introduction to Research in Psychology	
8/24	1	Introduction to Research in Psychology	
8/26	2	Understanding the Research Literature	
8/28	2	Understanding the Research Literature	
8/31	3	Research in Psychology: An Ethical Enterprise	
9/2	-	Using PSYCInfo, Literature Searches	
9/4	4	Hypothesis Testing, Power, and Control: A Review of the Basics	
<b>9/7</b>		<b>HOLIDAY – LABOR DAY</b>	
9/9	4	Hypothesis Testing, Power, and Control: A Review of the Basics	<i>Quiz 1-Ch.3</i>
9/11		<b>EXAM 1 (Ch. 1-4)</b>	
9/14	5	Measuring Variables	
9/16	5	Measuring Variables	
9/18	6	Selecting Research Participants	<i>Quiz 2–Ch.4</i>
9/21	6	Selecting Research Participants	
9/23	7	Experimental Design: Independent Group Designs	
9/25	7	Experimental Design: Independent Group Designs	
9/28	8	Experimental Design: Dependent Groups and Mixed Group Designs	<i>Research Proposal Due</i>
9/30	8	Experimental Design: Dependent Groups and Mixed Group Designs	
<b>10/2</b>		<b>EXAM 2 (Ch. 5-8)</b>	
10/5	9	Experimental Design: Single-Participant Design / The Operant Approach	
10/7	9	Experimental Design: Single-Participant Design / The Operant Approach	<i>Quiz 3–Ch. 8</i>
10/9	10	Finding Relationships Among Variables: Nonexperimental Research	
10/12	10	Finding Relationships Among Variables: Nonexperimental Research	
10/14	11	Data Collection Methods	<i>Quiz 4–Ch. 10</i>
<b>10/16</b>		<b>HOLIDAY – MID-SEMESTER BREAK</b>	
10/19	11	Data Collection Methods	
10/21	12	Program Evaluation, Archival Research, and Meta-Analytic Designs	<i>Quiz 5-Ch.11</i>
10/23	12	Program Evaluation, Archival Research, and Meta-Analytic Designs	
10/26	13	Your Research Project: Analyzing, Interpreting, and Presenting Your Research/ <i>Experimental Design Due</i>	
10/28	13	Your Research Project: Analyzing, Interpreting, and Presenting Your Research	
10/30	14	Communicating in Psychology	<i>Quiz 6-Ch.13</i>
11/2	14	Communicating in Psychology	
<b>11/4</b>		<b>EXAM 3 (Ch. 9-14)</b>	
11/6		Data Collection	
11/9		Data Collection	
11/11		Data Collection	
11/13		Data Collection	

11/16	Data Analysis	
11/18	Data Analysis / Presentation Preparation	
11/20	Data analysis / Presentation Preparation	<i>Data Report Due</i>
11/23	Presentations (all must attend)	
11/25	Presentations (all must attend)	
11/26	<b>HOLIDAY - THANKSGIVING</b>	
11/30	Presentations (all must attend)	<i>Final Paper Due</i>
12/2	Presentations (all must attend)	
12/4	Presentations (all must attend)	
12/9	<b>Wednesday    PRESENTATIONS –ALL MUST ATTEND (10AM – 12N)</b>	

## PSYC 2300 – RESEARCH PROJECT

### Research Proposal – 50 pts.

Your research proposal should be around six to eight pages long. Later, you will use a modified version of this document as the Introduction section of your research paper. Think of this research proposal as an extended piece of writing in standard essay format with an introduction, a body, and a conclusion.

**Introduction.** In the first paragraph, set up the question you are going to investigate. Start with a real world example that is relevant to your research question. State the research question as the last sentence of this paragraph.

☐ **Body.** The body consists of a literature review, in which you discuss five to eight published studies relevant to your research question. For each article you review, discuss the hypothesis tested, the general methods, the results and the interpretation of those results. Only review that part of each article that is relevant to your research question.

**Conclusion.** In the conclusion, sum up the general trend in the findings of the literature you reviewed, followed by a statement of the hypothesis you are going to test and the expected outcome of your experiment.

Do not forget to include a separate **References** list in which you properly cite the literature you reviewed. Consult APA manual for proper format.

Here are some issues to consider while you are trying to develop a research question:

\*Don't be ambitious. You have limited time, resources and research skills. Pick a question that you can explore with minimal equipment, material and time.

\*Don't worry if your research question is boring, dull or uninteresting. Ninety-nine-point-nine percent of all research involves the careful, methodical, tedious testing of specific hypotheses. Science is generally not glamorous work.

\*Pick a topic of interest to you, read some of the relevant literature, and find an experiment that is easy to replicate with the limited resources available to you.

Here are some points to consider as you construct your literature review:

No research is done in a vacuum. Before embarking on a new project, the researcher needs to become familiar with previous research in this area. You too should have some idea of previous research related to your question. It will give you an idea of what to expect, and perhaps some insight into how to approach your research question.

### Experimental Design – 25 pts

For this assignment, you will need to turn a two to four page paper describing the experiment you will perform this semester. Later, you will use a modified version of this assignment as the Methods section for the research paper you will be turning in at the end of the semester. For right now, write your experiment design in the future tense, because you have not yet performed the experiment. However, you should keep in mind that later, when you write your final paper, you will change the verbs to past tense, because by then you will have completed your experiment. Your paper must have the following four sections in this order:

#### *Participants*

Tell approximately how many participants you will be recruiting for the experiment and how you will be recruiting them. Some examples:

- ☐ “Twenty University of New Orleans undergraduates...”
- ☐ “ten family members and friends...”

One or two sentences will generally suffice.

#### *Design*

Describe factor(s), levels and whether between or within subjects. One or two sentences will generally suffice.

### *Procedure*

Explain in step-by-step fashion how you will conduct the experiment. Give enough detail that another person could conduct the experiment for you. If different procedures are followed in each condition, give the procedures for each condition. This will be the longest part of your paper, and will probably take two or three paragraphs, possibly more.

### *Materials*

Describe any materials you will use in the experiment. If you are using computer software, audio or visual equipment, specify the exact name, model, release, etc of the software or equipment. If you are using a website, give the URL. If you are using a questionnaire, include the questionnaire as an appendix.

**Note:** Sometimes, some of these sections can be combined. Consult with your instructor if this seems appropriate in your case.

### **Data Report – 25 pts.**

For your data report, you will need to turn in two documents. The first document is a spreadsheet tabulating and analyzing your data. The second document is a description of the results of your experiment. Your spreadsheet should tabulate your data and perform the appropriate statistical analysis. The spreadsheet should be well organized and clearly labeled. Print out the spreadsheet as a single page. Your description of the results of your experiment will constitute the Results section of the research paper you will prepare. Follow the guidelines in the lectures note. This description will probably not be longer than one paragraph.

### **Final Paper – 50 pts.**

When you have finished your experiment, it is time to write up the results. An article reporting an experiment has the following sections: Title Page, Abstract, Introduction, Methods, Results, Discussion, and References. You will use a revised version of your Research Proposal as your Introduction, your Experiment Design as your Methods section and your Data Report as your Results section. In addition, you will use a revised version of the references cited in your Research Proposal as your References section. You will still need to write a Title Page, an Abstract and a Discussion section. Consult APA manual for an example.

Your paper must be typed, double-spaced, in an appropriate font. Use 1-inch margins all around. Use one-half-inch indentations. Improperly formatted papers will not be accepted. Consult APA manual for specifics on formatting. Ask your instructor if you are having difficulty getting your computer to format your paper appropriately.

#### *Title Page*

Consult APA manual, and ask your instructor if you have questions.

#### *Abstract*

Consult APA manual, and ask your instructor if you have questions.

#### *Introduction*

The Introduction section consists of three parts. The first part is an introductory paragraph that attracts your reader's attention. It introduces the topic of research, often by giving a real-world example. The second part is the longest and consists of a review of the pertinent literature. For each article you review, discuss the hypothesis tested, the general methods, the results and the interpretation of those results. Only review that part of each article that is relevant to your research question. The third part is a concluding paragraph stating the hypothesis to be tested and the expected result. These should follow logically from the literature review. Revise your Research Proposal appropriately for use as your Introduction.

#### *Methods*

Respond to all comments on your Experimental Design and revise accordingly. Also, make sure the Methods section is written in the past tense, because the experiment is now finished.

### *Results*

Respond to all comments on your Data Report document and revise accordingly. Include your graph but not your raw data.

### *Discussion*

Although the discussion section is the conclusion of your research paper, this section is itself structured in standard essay format:

**Introduction.** The first paragraph is the introduction of the discussion section. It summarizes the general trend of findings in the literature, the hypothesis tested in the current study and the results obtained.

**Body.** The body discusses three topics, each covered in one or more paragraphs. First, interpret the results of the current study by connecting it with the literature reviewed and considering possible implications. Second, discuss the shortcomings of the current study by analyzing all weaknesses and considering how the design could be improved to overcome those weaknesses. Third, discuss possible avenues for further research in the area, considering how this line of research could be continued.

**Conclusion.** The concluding paragraph summarizes the paper, perhaps leading back to the real-world example given at the beginning of the Introduction section of the research paper.

### *References*

Consult APA manual, and ask your instructor if you have questions.

### **Oral Presentation – 50 pts**

During the last week of class, we will hold a symposium in which each of you will present the results of the experiment you performed this semester. Each of you will be allowed 13 minutes for your presentation. For your talk, you will need to prepare a Powerpoint presentation of approximately six slides, as described below.

#### *Design of Your Presentation*

Your first slide will be your **Title** slide. Give your talk a catchy yet descriptive title. (This will probably be the same as your paper title.) Below your title, give your name and affiliation (University of New Orleans). As you present this slide, tell a story that catches your listeners' attention and gets them thinking about your topic. You can use the first paragraph from your research paper as the basis for this. Don't start your presentation by saying: "The title of my talk today is..." This is a hallmark of an uninspired (and uninspiring) public speaker. You don't need to tell us the title of your talk because it is right there on your first slide.

Your second slide will be your **Introduction**, in which you discuss the general observation motivating your research and some of the previous literature on this topic. Put *key words only* on your slides. You will fill in the details in your talk. Do not cram your slide with text and then read from the slide. Keep in mind that the slide is an aid to the listener, not the speaker. As the speaker, you can have more detailed notes in hand.

Your third slide will state your **Hypothesis**. Make clear the steps in your logic leading from what is already known to what you think will happen in the situation your experiment sets up. In other words, do not just state your hypothesis, but explain why you think this hypothesis is correct.

Your fourth slide will present the **Methods** of the experiment. Briefly describe your participants and how the data were collected. Again, give only keywords on your slide and fill in the details in your talk.

Your fifth slide will present your **Results**. Present your Results in the form of a graph. You can import the graph you created in Excel, and you can even modify the colors and style of the graph to make it more visually appealing. In your talk, give the summary statistics for your data, discuss the significance test used and the results of that test, and interpret the results.

Your sixth slide will present a concluding **Discussion** of your experiment. Relate the hypothesis to the results, discuss any shortcomings of the current experiment and talk about how these shortcomings will be addressed in



future experiments. (Even if you never want to think about this experiment again, you have to act as if you can't wait to run the new-and-improved version you are proposing.) When you are finished, do not say, "Thank you" or "That's all" (again, hallmarks of uninspiring speakers). Instead, ask if there are any questions. (There will be.)

### *Preparing Your Presentation*

In preparing your Powerpoint presentation, choose a design template that suits your personality and the topic of presentation. Be as colorful and bold as you want to be. By the way, you will need to save your finished presentation on a jump drive to bring to the seminar. Do not forget to also put a copy on your jump drive of any other files your presentation accesses, such as the Excel file in which you produced your graph. Test your presentation by running it from the jump drive on another computer other than the one on which you created the presentation. You can also bring your presentation to my office prior to the due date for me to look over.

Notice that Powerpoint gives you room to write notes. Make sure that you have enough information to sustain a 10-minute talk; but do not simply read your notes. Be familiar with the information you are presenting and use your notes to keep you on track and to store factual information. Practice your presentation in front of family or friends. Make sure you have enough information to talk for ten minutes.

### *On the Day of the Presentations*

Presentations will be held during the last week of class. I will randomly assign each of you to a particular 13-minute time slot, and I will hand out a schedule of speakers prior to presentations. All of you are required to attend ALL days of the presentations, even if you gave your presentation previously. You are also expected to ask questions after each presentation.

Here is how your presentation will proceed. You will know from the schedule of speakers when it is your turn to speak. When it is your turn, come to the front of the room, put your jump drive into the computer and/or open your presentation. Start speaking when you are ready. I will keep track of the time, and I will hold up a finger indicating that you have one minute left. Keep speaking, but give me a nod to let me know that you have seen me. When time is up, I will hold up my hand.

When you have finished your talk, or when time is up, ask if there are any questions. (There will be.) Be concise but informative in your answers. If you do not know the answer to a factual question, say, "I'm sorry. I don't have that information with me, but I can get it for you." If you cannot think of a response to an opinion question, say something to the effect of: "That's a very good question. Perhaps we could find a way to test that." If someone gives you a comment or suggestion, smile and say something to the effect of: "Thank you. I'll keep that in mind." When there are no more questions, or when I announce that time is up, close your presentation, take your jump drive out of the computer and return to your seat. The next presenter should already be at the front of the room.

Let us consider the types of questions you should be asking. Keep in mind that we are all scientists (at least for the purposes of this class) engaged in the common purpose of scientific inquiry. As scientists, we try to understand how the world works by asking questions. Also, recall that a hypothesis can never be proved, only disproved. As conscientious scientists, we endeavor to tear down any hypothesis we encounter. We brutally attack each hypothesis, and only accept as "probably true" those hypotheses that withstand many assaults over a long period of time. Also, it is important to keep in mind that we attack hypotheses, never the person proposing the hypothesis. As the listener, you need to make your questions intellectually sharp but non-emotional. As the presenter, you need to accept *all* questions and criticisms as helpful advice. Here are some typical questions that get asked at presentations:

- Could you explain in more detail how you collected your data / performed your experiment?
- Do you think you would have gotten a significant result if you had run more subjects?
- Do you think your results could be due to order effects / fatigue effects / etc?

Other comments from the audience will include suggestions for alternative interpretations of the results or suggestions for other additional experiments that could be performed. For those ten minutes, focus on the particular research project that is being presented, think critically about the hypotheses and underlying assumptions, and try to come up with ways to test these hypotheses. In other words, behave like a scientist.

### *Grade*

There are two components to the grade you will get for this project. First, you will receive a score of up to 25 points assessing the Clarity of your presentation. This assessment focuses on the work you did preparing the slides for your presentation. You will be scored on how effectively you presented the rationale, hypothesis, methods, results, and conclusion of your project. Second, you will receive a score of up to 25 points assessing your Delivery of the presentation. This assessment focuses on how well you presented yourself and spoke during your presentation, and will depend largely on the amount of preparation and practice you put into the assignment. The quality of your PowerPoint slides will factor into this score as well. Students absent from the presentations on the day they are not presenting will have up to 20 points deducted from their presentation score.

That's all, er... I mean, does anybody have any questions?

## ACADEMIC CALENDAR – Fall 2015

### **August 19 Regular classes begin.**

Schedule adjustment period starts (with \$50 fee penalty per day). Late Registration Course Add or Swap Fee of \$50 applies for all Late Registration Course Additions & Course/Section swaps.

August 25 Last date of schedule adjustment period (with fee penalty till 11:59 PM)

Final date to drop course(s) with 100% refund. After this date, there is no refund for drops.

Final date to change from credit to audit.

Final date to change from audit to credit.

August 29 Last date for textbook refunds.

### **September 7 Labor Day Holiday.**

September 8 Final date to drop course(s) or resign and not have course(s) recorded.

Deadline for undergraduates who received "incompletes" in the previous Summer session to complete course work. "I" grades are changed to "F" after this date.

14th class day. Census day.

September 9 From September 9 through October 14 an automatic "W" will be recorded for all courses dropped. (Drop fee of \$50 applies per drop)

September 16 50% REFUND. Final date to resign (withdraw from all courses) and receive 50% refund (less appropriate non-refundable fees). No refunds made for partial reduction in course enrollment.

September 25 Deadline to file an Application for Degree for December Commencement.

October 1 Extended Payment Plan Option (EPPO) final payment deadline (4:30 P.M.).

October 5-9 Mid-semester examination period.

October 13 Mid-semester grades due (9 A.M.)

October 14 Final date for dropping courses or resigning from the University (11:59 P.M.)

Final date to drop course(s) or resign from the University. Resignations (withdrawal from all courses) must be completed through WebSTAR on or before October 14.

### **October 15-16 Mid-semester break. (Does not apply to Saturday classes)**

October 30 REGISTRATION for 2016 Spring Semester begins.

November 1 Application for admission to Graduate School due date for Spring 2016.

November 3 Last date for thesis and dissertation defenses for Graduate degree candidates.

November 17 Format check due date for Graduate degree candidates with thesis and dissertation requirements.

November 21 Last day of Saturday classes.

### **November 26-27 Thanksgiving Holidays.**

### **December 4 Last day of classes.**

Deadline for Graduate students who received incomplete grades in the previous Spring semester to complete coursework. "I" grades changed to "F" grades after this date.

December 5 Reading Day. Final Exams for Saturday classes and Accounting 2100, group exam.

December 7 Final examinations begin.

December 11 Final examinations end.

December 15 Application for Undergraduate Admission deadline for 2016 Spring Semester.

Final grades due (9 A.M.)

Final grades available on WebSTAR

December 16 Graduation Lists due (9 A.M.)

December 18 COMMENCEMENT (Lakefront Arena, 3:00 P.M. Further information can be found at [registrar.uno.edu/commencement](http://registrar.uno.edu/commencement).) Academic appointments end.

December 24-January 1 University Closed.