

# PSY 301 RESEARCH METHODS

**TERM:** Spring 2002

**TIME & LOCATIONS:**

**LECTURES:** Tue & Thu 8:00-9:20 @ EDUC 201

**LABS:**010 Tue 14:00-16:50 @ MORE 130

011 Wed 14:00-16:50 @ MORE 130

012 Thu 14:00-16:50 @ MORE 130

**Professor:** Bob Uttl

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appointment

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**Lab Instructor:** Erik Kim

**Office:** TBA

**Office hours:** TBA

**Phone:** TBA

**Email:** TBA

## OVERVIEW

The purpose of this course is to introduce you to scientific methods in psychology. We will cover both experimental and non-experimental research. Topics include problem identification, hypothesis/question formation, research design, data collection, data entry, descriptive and inferential analysis of collected data, analysis interpretation and research report writing. You will also become familiar with searching published research using the library databases such as PsycLI T & MEDLI NE, critically reading and evaluating research reports, and using SPSS and MS EXCELL for data analysis and research report results preparation.

Primary objective of this course is:

- To provide you with an opportunity to learn how to search for information using PsycLI T, Medline, and Social Science Citation Index (SSCI),
- To provide you with an opportunity to learn how to critically read and evaluate research reports in psychology,
- To provide you with hands-on experience with research methods and conduct of research in psychology,
- To provide you with the opportunity to build upon and to improve your statistical knowledge and skills,
- To provide you with experience using necessary analytical/presentation tools (e.g., SPSS and MS EXCELL),
- To give you experience with writing submission-ready psychological report for a scientific journal.

Although the course's content focuses on psychology, the course teaches you transferable skills—the skills you will be able to apply in various other domains:

- in making decisions in your daily life (Should you go for that latest “slim-quick” pill?)
- in your future graduate school career (In making decisions about your clients’ life, you cannot blindly rely on what someone says in a respectable or even in the best scientific journal in the field. Rather, you need to be able to judge for yourself whether authors’ statements are supported by their methodology and collected data.)
- in your future career in industry, business, or government (Everyone seeks information and you may be able to provide such information for cool sums of money.)



## PREREQUISITES

PSY 201, PSY 202; ST 211 or ST351 (and their prerequisites). **If you do not have these prerequisites, you will be disenrolled from the course unless you obtain my permission to enroll or to remain in this course.**

## REQUIRED TEXTS

Cozby, P. C. (2001). **Methods in behavioral research**. 7<sup>th</sup> edition, Mountain View, CA.: Mayfield Publishing Company.



American Psychological Association (2001). **Publication Manual of the American Psychological Association**. 5<sup>th</sup> Edition. Washington, DC.: American Psychological Association. (If you already have 4<sup>th</sup> edition, you do not need to buy the 5<sup>th</sup> edition.)

## SUPPLEMENTARY TEXTS (recommended to refresh your statistics knowledge & free...)

StatSoft, Inc. (1999). **Electronic Statistics Textbook**. Tulsa, OK: StatSoft. WEB: [www.statsoft.com/textbook/stathome.html](http://www.statsoft.com/textbook/stathome.html).

Stockburger, D. W. (1996). **Introductory statistics: Concepts, models, and applications**. WEB: [www.psychstat.smsu.edu/sbk00.htm](http://www.psychstat.smsu.edu/sbk00.htm).

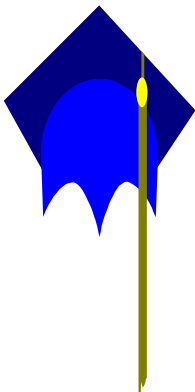
## RELATION BETWEEN LECTURES & TEXT

The lectures will be in step with the assigned list of readings. The lectures are intended to augment the text.

## INSTRUCTIONAL METHODS

We will use several complementary instructional methods: readings, lectures, labs, assignments, a paper & discussions. The readings and lectures are efficient means of communicating basic knowledge. The labs, assignments, a paper, and discussion sessions give you first hand experience with research as well as opportunity to try-out your understanding of the material covered in the readings and lectures.

## EVALUATION



Your work in PSY301 will be formally evaluated by means of:

- 5 bi-weekly tests (non-cumulative; best 4 count, 8% each; 32% total)
- 1 SPSS/Lab test (8%)
- 8 assignments with 2 parts: SPSS part (1 % each) and research methods part (2% each) [best 7 count, A&B parts total 21%]
- 1 APA style research paper (graded; 1% for each section draft [turned in/not turned in grading], for a total of 5%; 20% for a final version of a paper; total % for APA paper is 25%)
- class & lab attendance, quizzes and participation (14%)

A grade scale is non-competitive scale; it is WYSIWYG or What-You-See-Is-What-You-Get scale. The feature advantage of the WYSIWYG scale is that it promotes interaction between you and your colleagues; you can form study groups and generally help each other to understand the material without lowering your relative standing (and receiving a worse grade on a curve grading system).

**BI -WEEKLY TESTS.** Each test will have only 30-40 multiple choice questions covering 2 weeks of lectures (test duration: 30 minutes).

**SPSS/LAB TEST.** You will choose (randomly) two research problems, including data sets and questions, analyze them using SPSS, write brief results and conclusions answering the questions. You will use fill-in-the-blank forms for your answers. All research problems will be posted on my website by the end of the first week of classes. You are free to work them out prior to the test. The test duration will be 120 minutes. **You can challenge this test once prior to its scheduled time, subject to test seats availability. Challenges will be given only on Mondays.**

**ASSIGNMENTS/PART A: SPSS.** You will be asked to solve research problems such as those you will encounter on SPSS/LAB TEST.

**ASSIGNMENTS/PART B: RESEARCH METHODS.** You will receive various assignments on research methods including searching for journals, critical reading, research design, results interpretation, etc. These assignments will be invaluable for writing your research report. For assignments, both part A and B, you are allowed to work alone or with a partner and hand in a single solution. If you work with a partner, you must hand in a single solution. However, no one is allowed to help you with SPSS/LAB test, therefore, you must ensure that you acquired all necessary skills covered by the assignments.

**APA STYLE RESEARCH PAPER:** You will write APA style research paper on an experimental research project. I expect research paper conforming to ALL requirements of APA style manual. A good example is provided in your textbook but in any disagreement, APA manual takes precedence. Your paper will be your own work only. You are not allowed to collaborate on it with anyone.

**CLASS & LAB ATTENDANCE, QUIZZES AND PARTICIPATION.** Your attendance at ALL lectures and labs is expected and required. You are expected to participate in class discussions. Quizzes may be closed or opened book (using APA Style Manual), they may be given during the lectures or labs, depending on the quiz. Therefore, you should bring your APA Style Manual with you to both the lectures and labs. In addition, your effective help to less computer literate classmates during the labs will be taken as evidence of class participation.

## EXTRA CREDITS

You can earn up to 5% of your course grade in extra credits.

**ASSIGNMENT CREDITS** You will have an opportunity to earn extra credits by completing special assignments that will be announced from time to time. For example, I may ask you to summarize and critically evaluate a research report in a brief written report. If you receive credits for the assignment, you must be ready and willing to make a brief 5-10 minutes presentation on your assignment to the class. Not everyone will be asked to make a presentation but if you are asked and you choose not to make the presentation, you will receive no credits for the assignment. The assignment credits will be multiplied by 1 and added to your final percentage grade.



**EXPERIMENTAL CREDITS** One way to learn more about psychological testing is to volunteer for an experiment. You may earn experimental credits (1 credit for each hour) for participating in experiments that will be announced in class. Once you have participated in the experiment, the experimenter will tell you about their work and they will take your name and student id to record your credit hours. The continuing availability of experiments in which you can earn credits is not guaranteed. Hence, it is in your best interest to obtain experimental credits as soon as possible. The experimental credits will be multiplied by  $\frac{1}{2}$  and added to your final percentage grade.



If you sign-up for the experiment and you do not show up, the equivalent number of experimental credits will be subtracted from the number of experimental credits you earned. Thus, (credits earned minus credits not shown up for) multiplied by  $\frac{1}{2}$  will be added to your final percentage grade.

If you do not like to participate in experiments, you may earn experimental credits by writing brief 500 word summaries of recent research reports (1 summary is worth 1 hour credit). If you choose this option, you need to discuss it with me first and get it approved.

**MEDIA CREDITS** You can submit up to 2 newspaper, popular magazine stories, or videos that grabbed you attention and that are directly relevant to the material covered by the course (scientific journal are not acceptable, internet articles are not acceptable with the exception of internet materials printed out from the newspaper sites). The submission should grab the attention of your colleagues, if presented. You need to submit a hard copy. Each submission is graded on a PASS/FAIL basis and is worth of 1 credit. The deadline for the first submission is the end of the fifth week of classes and the deadline for the second submission is the end of the ninth week of classes. If a submission is judged as unacceptable/FAIL, you can resubmit as long as your submission PASSES by the deadline. If I ask you to present your submission to class and you agree, you will earn additional 1 credit towards your 5% extra credit maximum. Media credits are multiplied by 1 and added to your final grade.



## RESOURCES

**www.onid.orst.edu/~uttlb** Course website will have online syllabus, announcements, assignments, lecture overheads, study guides, practice questions, links to free supplementary texts, and other interesting links. It is also a place to visit to check your grades and progress.

**Reserve Desk OSU Valley Library** Required texts will be placed on Reserve in OSU Library.

**Psychology department computer lab** The computer lab has 20 Pentium-III class and 10 Celeron class computers. Pentium-III class computers have SPSS installed on them. All computers are networked and have access to internet. Depending on the availability of funds to pay for student attendants or availability of student volunteers, the lab may be open outside of the class hours for drop-in.

**OSU Computer labs** OSU has numerous computer labs open either 24 hours or into the late night hours. Some of them have SPSS installed. Specifically, you can go and work in MILNE computer lab and use SPSS there.

**FAQ** Frequently Asked Questions and answers are posted on my website.

**SPSS FAQ** Frequently Asked Questions about SPSS are posted on my website.

**Final Paper FAQ** Frequently Asked Questions about FINAL PAPER are posted on my website.,

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# COURSE POLICIES

## READ THESE POLICIES VERY CAREFULLY!

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### MISSED TESTS/ASSIGNMENTS & LATE ASSIGNMENTS

**The TESTS WILL BE GIVEN ON PUBLISHED DATES ONLY.** There will be no make-up examinations or tests. **MISSED EXAMS RECEIVE GRADE ZERO UNLESS YOU ESTABLISH** valid medical and other serious excuses (please note that parties, snowboarding trips, family and friends visit are not serious excuses). Documentation (i.e., a valid, current note from a medical practitioner) is required to establish a valid excuse within 10 days of the illness end.

If you are going to miss a test or exam for a valid medical reason, you must inform me *in advance of the test or examination*. No after-the-fact excuses will be accepted. Please call my office (737-1374), email me at bob.uttl@orst.edu, or leave a message with the departmental secretary.

A missed test or exam without a valid excuse (see above for a definition) will receive a grade of zero.

Late assignments receive zero. An assignment is considered late if it is turned in later than 15 minutes from the start of the class.

Late drafts & papers incur 1% PENALTY against the final grade for each started 24 hour period.

### CLASSROOM PARTICIPATION

Your comments and questions are welcome in class. Classroom discussions are an important part of this course, and you are expected to share your questions, comments and ideas. Your regular attendance in class is required and expected.

**YOU ARE RESPONSIBLE FOR ALL MATERIALS, INCLUDING ALL ANNOUNCEMENTS AND CHANGES IN THE COURSE SCHEDULE, ETC., THAT ARE MADE IN CLASS, ANNOUNCED ON THE COURSE MAILSERVER AND/OR THE COURSE WEBSITE**

**You are required to subscribe to a class mail-server. You are responsible for each and all announcements made on the server. If you have difficulties signing up, CONTACT ME IMMEDIATELY.**

### STUDENTS WITH DISABILITIES

Students with documented disabilities who may need accommodations, who have any emergency medical information the instructor should know of, or who need special arrangements in the event of evacuation, should make an appointment with the instructor as early as possible, no later than the first week of the term.

## ACADEMIC DISHONESTY

Academic dishonesty does not help you to learn the material, it is not fair to other students, and it will not be tolerated. You are responsible for reading and being knowledgeable about the University's policies on cheating and plagiarism available to you at <http://www.orst.edu/admin/stucon> and <http://www.orst.edu/admin/stucon/regs.htm>.

In general, any work you present for credit or grading in this course must be your own work **UNLESS I** gave you a specific permission to collaborate on a specific work or assignment in writing or as part of my syllabus.

In particular, note that:

Academic dishonesty includes but is not limited to

**"CHEATING"** (the intentional use or attempted use of unauthorized materials, information, or study aids);

**"FABRICATION"** (the intentional falsification or invention of any information including data, medical notes, excuses, etc.);

**"ASSISTING IN DISHONESTY OR TAMPERING"** (intentionally or knowingly helping or attempting to help another commit an act of dishonesty or tampering with evaluation instruments and documents); and

**"PLAGIARISM"** (intentionally or knowingly representing the words or ideas of another person as one's own).

In a case of academic dishonesty, the grade of F will be awarded for the course, and a Report of Academic Dishonesty will be filed as required by University policy. Depending on a previous record, an act of academic dishonesty may also result in an expulsion from the University.

## Lecture, Lab &amp; Test/Exam Schedule

DATE	READINGS	TOPICS
WEEK 1	Cozby 1 Cozby 12 & App. B	Introduction, Academic dishonesty Scientific Understanding of Behavior <b>Description &amp; Exploratory Data Analysis</b>
LAB 1		SPSS Tutorial LAB Demonstration 1: SPSS & MS EXCELL data entry & import Assignment 1 (due @ the beginning of the next lab) -- SPSS: Data entry and data import -- RM: Attitudes and interests
WEEK 2	Cozby 2	Hypotheses, Predictions, Ideas, & Library searches <b>Central limit theorem, sampling, &amp; inferential statistics</b> <b>TEST 1 (Cozby 1, 2, 12, App. B, APA pp. 141-162, etc.)</b>
LAB 2	APA pp. 141-162	<b>ASSIGNMENT 1 DUE</b> LAB Demonstration 2: Exploratory Data Analysis Using library and library databases (PsycLIT & MEDLINE) Assignment 2 (due @ the beginning of the next lab) -- SPSS: Exploratory Data Analysis & Graphing Results via EXCELL -- RM: Research problems, hypotheses, & predictions
WEEK 3	Cozby 4 Cozby 5 Cozby 13 & App. B	Non-experimental & Experimental methods Measurement concepts <b>t-tests</b>
LAB 3	APA Chapter 1 & 4	<b>ASSIGNMENT 2 DUE</b> LAB Demonstration 3: Sampling from population Assignment 3 (due @ the beginning of the next lab) -- SPSS: Simulation of sampling from various distributions -- RM: Identifying DVs, IVs, operational definitions, design
WEEK 4	Cozby 6 Cozby 13 & App. B.	Observation, Case studies, & Archival research <b>F-tests</b> <b>TEST 2 (Cozby 4, 5, 6, 13, App. B, etc.)</b>
LAB 4		<b>ASSIGNMENT 3 DUE</b> LAB Demonstration 4: t-tests Assignment 4 (due @ the beginning of the next lab) -- SPSS: One-sample, Independent- & Related samples t-test -- RM: Observation research
WEEK 5	Cozby 7 Cozby 13 & App. B	Survey research <b>Effect size and Power analysis</b>
LAB 5 Oct 24>		<b>ASSIGNMENT 4 DUE</b> <b>RESEARCH REPORT: APA STYLE SETUP &amp; STRUCTURE DUE</b> LAB Demonstration 5: One-way and 2-way ANOVA Assignment 5 (due @ the beginning of the next lab) -- SPSS: One way and 2-way ANOVA -- RM: Survey research

WEEK 6	Cozby 8	Experimental research <b>TEST 3 (Cozby 7, 8, 13, App. B, etc.)</b>
LAB 6		<b>ASSIGNMENT 5 DUE</b> <b>RESEARCH REPORT: INTRODUCTION &amp; REFERENCES DUE</b> LAB Demonstration 6: Repeated measures ANOVA Assignment 6 (due @ the beginning of the next lab) -- SPSS: Repeated measures ANOVA -- RM: Experimental research
WEEK 7	Cozby 9	Conducting experiments <b>Correlation &amp; Regression</b>
LAB 7		<b>ASSIGNMENT 6 DUE</b> <b>RESEARCH REPORT: METHOD SECTION DUE</b> LAB Demonstration 7: Correlations Assignment 7 (due @ the beginning of the next lab) -- SPSS: Correlations -- RM: Comprehensive method review and evaluation
WEEK 8	Cozby 10	Complex experimental designs Interpreting interactions <b>TEST 4 (Cozby 9, 10, etc.)</b>
LAB 8		<b>ASSIGNMENT 7 DUE</b> <b>RESEARCH REPORT: DATA &amp; ANALYSES DUE</b> LAB Demonstration 8: Regression Assignment 8 (due @ the beginning of the next lab) -- SPSS: Regression -- RM: Comprehensive article review and evaluation
WEEK 9	Cozby 11	Quasi-experimental designs & Single case designs Developmental research
LAB		<b>ASSIGNMENT 8 DUE &amp; DISCUSSION</b> <b>RESEARCH REPORT: RESULTS SECTION DUE</b> Q & As
WEEK 10	Cozby 14 Cozby 3	Generalizability Ethics Student presentations (optional) <b>TEST 5 (Cozby 11, 14, 3, etc.)</b>
LAB		<b>FINAL RESEARCH REPORT DUE</b> <b>SPSS/LAB TEST</b>
<b>***** THIS CLASS HAS NO FINAL *****</b>		

**Disclaimer.** Syllabus is subject to change.

# APA PAPER

**OBJECTIVE:** Write APA Style research report.

## OVERVIEW

A research report written in APA style consists of 4 main sections: introduction, method, results and discussion. The introduction develops the problem under investigation and gives the statement of the investigation's purpose. The method section describes the method used to conduct the investigation. The results report the findings. The discussion interprets the findings, discusses their implications and limitations.

### Examples:

Study one-experiment paper example in APA manual, pp. 306-316 (5<sup>th</sup> edition).

Study an example in Cozby.

## STRUCTURE

### Title Page [APA 1.06]

Title

Author & affiliation

Running head

Short-title

### Abstract [APA 1.07]

Problem

Participants

Method

Findings

Conclusions

### Guidelines/Requirements:

- Accurate
- Self-contained
- Concise & specific
- Nonevaluative
- Coherent and readable
- Max 120 words

### Introduction [APA 1.08]

Introduce the problem

Develop the background (concise summary of what was done)

State the purpose, rationale and outline how you approached the problem

### Guidelines/Requirements:

- You must cite relevant original research literature (minimum 6 articles for this paper)

- Books, reviews, etc. are often NOT original research literature
- If you have not read an article, you cannot cite it

## Method [APA 1.09]

Subjects

Design

Measurement Instruments

Procedure

### Guidelines/Requirements:

- Can I replicate your study based on your paper only?
- Subject section should include major demographic characteristics of subjects (at least age, sex, and education), a method of recruitment, reasons for exclusions, etc.
- Description of a measurement instrument should include: what it measures, response scale including example, number of items, scoring, reliability (if known), validity (if known)
- Procedure section needs to describe each step in the execution of research, including randomization, counterbalancing, instructions, etc.

## Results [APA 1.10]

Preliminaries (distribution checks, outlier identification and treatment, setting of alpha value for statistical tests, composition of combined scores used in various analyses)

Descriptive results/Norms (M & SDs, min-max range)

Inferential results (t-tests, F-tests, etc.)

### Guidelines/Requirements:

- Results must report sufficient detail to justify the conclusions
- Use a mixture of text, tables, and figures (A good picture is worth of a thousand words.)
- When reporting descriptive statistics, include means, standard deviations, per-cell sample size, and ranges.
- When reporting inferential statistics (e.g., t-tests, F-tests), include information about the magnitude of statistics, the degrees of freedom, the probability of obtaining a value as extreme or more extreme than the one obtained (i.e., p-value), the direction of effect, and a magnitude of effect size (d, eta-squared, etc.). If you have done an analysis of variance give the estimates with their degrees of freedom, F values, MSE, and an index of effect size.
- Give an estimate of the power of the study if you failed to reject NULL
- Do not give results to a greater degree of accuracy than that of the measurement.
- Avoid using percentages unless the groups have more than 100 subjects

## Discussion [APA 1.11]

Brief statement of the main findings

Comparison of the results with the published findings

Implications

Limitations

### Guidelines/Requirements:

- Summary ought to be brief, concise, and comprehensive
- Comparison needs to discuss similarities and differences with previous work
- Implications of the study
- Limitation ought to discuss issues limiting the study's findings, implication, generalizability, etc.

**References [APA 1.13; see APA chapter 4 for specific examples]**

References cited in the text & tables

**Author note [APA 1.15 & 3.889]**

Departmental affiliation

Sources of financial support [if any]

Acknowledgements

Contact information

**Footnotes [optional; APA 3.87]**

**Tables [3.62-3.74; note 3.74 checklist]**

Tables with table captions.

**Figures [3.75-3.86; note 3.86 checklist]**

Figures with figure captions on a preceding page.

**GRADING**

Grading will be based on this document and APA style. Minor deviations may be allowed but in case of disagreement the APA style manual takes precedence:

- Necessary content/parts (all APA sections, all necessary content, etc.)? 50%
- Quality of content (comprehensive intro, accuracy, etc.)? 30%
- Quality of presentation (grammar, spelling, readability, etc.)? 10%
- APA style followed? 10%
- Overall impression (i.e., clean, professional, stapled, etc.)? 5%