

Fall | 2016

Advanced Research Methods (PSY 400) (section 02)

Josita Maouene

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Office: AuSable Hall, room 2213
Classroom: AuSable Hall (ASH) 2302

Walk-in Office hours:
Thursdays 5 to 6 pm before class or by appointment

Prerequisites

PSY 101; WRT 150; STA 215; PSY 300

You may not take any of these prerequisite courses concurrently with PSY 400

Required Material:

1. Textbook:
Research Methods. A modular approach. Sherri L. Jackson, 3rd edition

Manuals:
 2. **Lab Manual for Psychological Research**, McBride & Cooper Cutting, Revised 3rd revised edition, 2013, Sage
 3. **How to Use SPSS. A Step-by-Step Guide to Analysis and Interpretation.** Brian C. Cronk, Pyczak Publishing, 2012, new 9th edition
 4. **Team writing, a guide to working in groups.** Joanna Wolfe, Bedford/St. Martin's. Boston, 2010, first edition.

Recommended Text:

American Psychological Association (2009). Publication manual of the American Psychological Association (6th Ed.). Washington, DC.: APA.

There is no need to purchase this text. There are several copies available at the GVSU's library [BF76.7 .P83 2010], and most of the relevant information can be found online at APA.org. This is the source you should use for writing your papers.

***Please DO NOT use pocket or non-APA published versions of this manual. Most have a number of mistakes.**

Course Description

- The aim of this course is to cover advanced research design with parametric and non parametric inferential statistics as well as professional team work.
- Groups of students will go through the entire research process on a topic of their choice and conduct an advanced experimental design (2 by 2). They will design, carry out,

- analyze, write up, and orally present an original study. The study must include two independent variables and at least one independent variable must be manipulated experimentally.
- Students will gain experience working with the statistical package SPSS for Windows.
 - In addition students will read, analyze, and critique several published research articles.

Course Objectives

The course is designed to accomplish three main objectives: 1) To learn about professional team work 2) To learn how to critically evaluate research articles or claims, and 3) To further the training of students in the basic skills to conduct and communicate research in psychological science.

- *We hope you enjoy the course and that it helps you become a good researcher, effective writer, and sophisticated consumer of research.*

Structure of the class

I will teach the theoretical content of the course mainly through the reading of articles and a questionnaire called MASK and some slides. The applied content will be based on the exercises in the three different lab manuals.

The delivery of course content occurs mainly through 1/3rd of the time dedicated to the review of concepts, 1/3rd to team work and 1/3rd to SPSS labs for the first 9 weeks. The last four weeks are dedicated to team writing and data analysis.

Course Webpage: Blackboard system

A variety of useful information will be provided through Blackboard (<http://bb.gvsu.edu/webapps/portal/frameset.jsp>). You will find the course syllabus, weekly readings and assignments, miscellaneous announcements and your grades. It's a good idea to check your grades on a regular basis to make sure that all of your completed work has been recorded properly.

- **We will use the Group function in Blackboard as well as its wiki for TEAM WORK.**

SafeAssign

I will be using a software called SafeAssign to detect plagiarism.

Plagiarism will result in an F grade for the article (=0 pts). This includes forgetting quotes, copying your peers, or copying a sentence from another article.

Attendance policy

This course requires consistent work throughout the semester. If you fall behind in the work, you will experience difficulty catching up. Accordingly, I will **take attendance**. If you miss classes, your attendance grade will suffer, unless you can show proper documentation. 12 weeks of attendance = **25 pts**.

Evaluation and Grading

Your final grade in this class will be based upon the following achievements:

- | | |
|--|-------------------|
| 1) Review material | |
| • 2 exams on an article analysis | 100 pts (50 each) |
| • Review Exercises (10) + Team work (3ppts) | 65 pts |
| • SPSS Lab exercises (10) | 50 pts |
| 2) Research project | |
| • Team work documents (10) (5 pts each) | 50 pts |
| • In class Presentation of Research Proposal | 50 pts |
| 3) APA style scientific article | 150 pts |
| 4) Attendance | 25 pts |

TOTAL 490 pts

Course requirements

2 exams on two analyses of articles (brief reports)

- ❖ You will be asked to analyze a scientific article creatively, critically and methodologically.
- ❖ We will have trained this in class through the assigned readings and a mask (= a template of questions, always the same ones) (see Appendix). This will also be a review of the main concepts.

Assignments

To help you integrate the material, you will be asked to do a series of exercises from the lab manual (10) as well as create powerpoints on the chapters of the manual TEAM WRITING (3). The philosophy behind the assignments is you get five points per assignment if you tried to do it to the best of your abilities. Most will be repetitions from your RM PSY 300 class and some new concepts. Each is worth 5pts. A total of **65 pts**.

- **One of the assignment is the On-line Research Ethics Training (worth 10 points)**

Federal regulations and GVSU policies require that all research involving human subjects or materials of human origin be approved by the Human Research Review Committee before initiation. This is a 4-module-course that will take some time, 2 hours.

❖ Due: Wed Oct. 2

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| FIRST TIME LOG IN: |
| |
| 1.Go to www.citiprogram.org and click on Register Here |
| 2. Participating Institutions: select Grand Valley State University |
| 3. You will be prompted to choose and answer a Security Question in case you forget your |

| |
|---|
| password. |
| 4. Complete #2-7, click Submit |
| 5. Click on Add a course or update your learner groups for Grand Valley State University |
| 6. Select appropriate group (Question 1 for new CITI users). Beware you have never completed this before so select the last option! Otherwise you will be doing a refresher! |
| 7. Select Group 2 - Social and Behavioral researchers and personnel. Beware, do not select biomedical! |
| |

SPSS Labs

In order to be fully prepared for graduate school, you need to have a good knowledge of a statistical software. To achieve this goal, you will have 10 SPSS labs to attend. Your support for this training is the manual entitled: **How to Use SPSS. A Step-by-Step Guide to Analysis and Interpretation**. Each chapter will guide you through an exercise and then you will be asked to do an exercise on your own. I will collect your work at the end of each lab. Each lab is worth 5 pts. Total **50 pts**.

Term project

❖ **Groups**

Students will be grouped according to their interests. 5 Groups of 4 students will go through the entire research process.

❖ **Team work**

To train you on team work and team writing, you will be asked to read the manual TEAM WRITING and create documents for **50 pts total** (see Tentative schedule) that you will upload on my BB under group.

❖ **Annotated reference list**

To support your project, I will ask each of the member of the group to find two relevant peer-reviewed articles, summarize it and defend its relevance to me in writing (**5 pts**, counts as an assignment).

❖ **In-class presentation of your term project.**

You will be asked to present this term project on a powerpoint in front of the class. The project will have ~15 slides and take ~15 min and 10 min questions. Examples of the structure of the presentation will be provided on BB. This presentation is worth **50 points**. The due date of the presentation is: **Thurs Oct 6**.

An APA style paper; You will be asked to write a ~10-page paper (references, tables, graphs, included) on a research topic of interest to you that is feasible during a 16-week class.

- ❖ The first draft will be on the method and result sections and is **due Thurs Nov 17th**. Following this, there will be a peer review of your article in class (by a group of 4 students). An evaluation sheet will have to be filled in by the reviewers. Each reviewer will earn 10 pts for the review correctly done (included in the 150 points of the final paper). I will also review the draft.

❖ The second draft will be on the introduction and the discussion sections. It is due **Thurs Dec 8**. Following this, there will be a peer review of your article in class (by a group of 4 students). An evaluation sheet will have to be filled in by the reviewers. Each reviewer will earn 10 pts for the review correctly done (included in the 150 points of the final paper). I will also review the draft.

❖ The final paper is due the day of the final exam **Thurs Dec 16th**.

Make-ups

There are no make-ups unless a serious event prevented you from being in class. In any case proper documentation is required.

Final Course Grades

| | | |
|-------------------|------------------|-------------------|
| 93% & above = A | 80% - 82.99 = B- | 67% = D+ |
| 90% - 92.99% = A- | 77% = C+ | 60% = D |
| 87% - 89.99% = B+ | 73% = C | 59% and lower = F |
| 83% - 86.99 = B | 70% = C- | |

Disclaimer: This syllabus is subject to change. Any changes will be announced in class.

| | TENTATIVE LECTURE SCHEDULE | TEAM PROJECT & assignments related to the project |
|--------------------------|---|---|
| Week 1 Sept 1 | SYLLABUS, TERM PROJECT, TEAM WORK | |
| Week 2 Sept 8 | ANALYZING A SCIENTIFIC ARTICLE | READING FOR PROJECT A1) chapter 1, 2 & 7 of team writing; create a ppt with bullet points on important points. |
| Week 3 Sep 15 | REVIEW PSY 300 CONCEPTS <ul style="list-style-type: none"> • <u>SPSS LAB CHAPTER 1 & 2:</u> • ENTERING AND • MODIFYING DATA | READING FOR PROJECT A4) chapter 3, 4 & 8 of team writing create a ppt with bullet points on important points. |
| Week 4 Sep 22 | ANALYZING 2ND ARTICLE FOR EXAM 1 <ul style="list-style-type: none"> • <u>SPSS LAB CHAPTER 3</u> • DESCRIPTIVE STATISTICS | READING FOR PROJECT A5&6 ON_LINE ETHICAL TRAINING TEST TAKEN (see syllabus for steps) bring copy of certificate to class |

| | | |
|--|--|--|
| Week 5 Sept 29 | EXAM 1 ON ARTICLE & MASK <ul style="list-style-type: none">• <u>SPSS LAB CHAPTER 4</u>• <u>GRAPHING DATA</u> | A8) SUBMISSION OF AN ANNOTATED LIST OF REFERENCES 2 ARTICLES PER PERSON USE LAB MANUAL No 45 p.84 Justify in writing why these choices are most relevant |
| Week 6 Oct 6 | TEST IDENTIFICATION PARAMETRIC or NON PARAMETRIC ? PPT PRESENTATION OF TERM PROJECTS | Send your ppt presentation to Prof. Maouene |
| Week 7 Oct 13 | NON PARAMETRIC TESTS ID EXERCISE <u>SPSS LAB CHAPTER 6A)</u> <ul style="list-style-type: none">• PARAMETRIC INFERENTIAL• STATISTICS FACTORIAL ANOVA• REPEATED-MEASURES ANOVA | A9) SUBMISSION OF A RESEARCH PROTOCOL USING LAB MAN No 47, p. 85-91 and GVSU consent form on my BB under doc STIMULI, SCRIPT, ANSWER SHEET DEBRIEFING DONE |
| Week 8 Oct 20 1 st hour | FACTORIAL DESIGN : DESCRIBING MAIN EFFECTS AND INTERACTIONS <ul style="list-style-type: none">• <u>SPSS LAB</u>• <u>CHAPTER 6 B)</u> PARAMETRIC• INFERENTIAL STATISTICS• MIXED-DESIGNED SPSS | PRACTICE AMONG YOURSELVES, DATA COLLECTION AND ENTERING |
| Week 9 Oct 27 | EXAM 2 on ARTICLE & MASK <ul style="list-style-type: none">• <u>SPSS LAB</u>• <u>CHAPTER 7</u>• NON PARAMETRIC TESTS, CHI-SQUARE, MANN-WHITNEY,• KRUSHKAL-WALLIS, ETC. | DATA COLLECTION AND ENTERING |
| PART II WRITING | | |
| Week 10 Nov 3 | FINALIZING FRONT PAGE, PARTIAL ABSTRACT METHOD SECTION, GRAPHS <ul style="list-style-type: none">• <u>SPSS LAB APPENDIX A :</u>• EFFECT SIZE | WRITING |

| | | |
|---------------------------------|--|---|
| Week 11 Nov 10 | FINALIZING DATA ANALYSIS | DATA ANALYSIS |
| | | |
| WEEK 12 NOV 17 | FINALIZING RESULT SECTION WRITING | WRITING , TABLE & GRAPH |
| | <u>PEER REVIEW OF YOUR ARTICLES IN CLASS FOR DRAFT OF METHOD AND RESULTS (with graphs, tables and front page)</u> | |
| WEEK 13 NOV 24 | <u>THANKSGIVING RECESS</u> | |
| | | |
| WEEK 4 Dec 1 | FINALIZING <u>INTRODUCTION SECTION WRITING</u> | WRITING INTRODUCTION |
| | | |
| WEEK 15 DEC 8 | FINALIZING <u>DISCUSSION SECTION WRITING</u> | WRITING DISCUSSION |
| | <u>PEER-REVIEW IN CLASS OF YOUR DRAFT of INTRODUCTION AND DISCUSSION</u> | |
| WEEK 16 | EXAM WEEK | |
| THURS DEC 16 | NO FINAL EXAM BUT 1) BRING A HARD COPY OF YOUR FINAL PAPER collect peer eval III 2) REFLECTIONS ON TEAM WORK | USUAL ROOM, TIME: 12:00-1:50 1) DOWNLOAD YOUR PAPER ON BLACKBOARD (Assignments) UNDER SAFE ASSIGN |

Fall 2016 Academic Calendar

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|---------------------------|-----------------------|
| Registration Drop and Add | March 21- September 2 |
| Payment Deadline | August 19 by 5PM |
| Convocation | August 26 |

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|-----------------------------------|---------------------|
| Classes Begin | August 29 |
| Last day to Add, Register, or Pay | September 2 by 5PM* |
| 100% Tuition Refund Deadline | September 2 by 5PM* |
| Labor Day Recess | September 4-6 |
| 75% Tuition Refund Deadline | September 23* |
| Mid-term Evaluations | October 10-14 |
| Drop with a "W" Grade Deadline | October 28 |
| Thanksgiving Recess | November 23-27 |
| Classes End and Commencement | December 10 |
| Examinations and Semester Ends | December 12-17 |
| Grades Due from Faculty | December 20 by noon |
| Grades Available to Students | December 22 |

Special needs

If there is any student in this class who has special needs because of learning, physical, or other disability, please contact me and Disability Support Services (DSS) at (616) 331-2490. It is the *student's responsibility* to request assistance from DSS.

Furthermore, if you have a disability and think you will need assistance evacuating this classroom and/or building in an emergency, please make me aware so that the university and I can develop a plan to assist you.

Academic honesty

Students will do original work and will not take or receive the efforts of another person on any test or assignment, use unauthorized resources on quizzes or tests, plagiarize, or give/sell other students papers or assignments *not authorized by the instructor*. ***You are responsible*** for making yourself aware of and for understanding the policies and procedures that pertain to academic integrity. To that end, be sure to familiarize yourself with the GVSU Student Code [Section 223.01] related to academic integrity. **Furthermore, be sure to reference sources at all times.** If you are uncertain about such an issue prior to submission of an assignment, project, or test, please see your instructor so we can eliminate that uncertainty.

Support for Writing

The Meijer Center for Writing and Michigan Authors, with locations at the Allendale, Pew/Grand Rapids and Meijer/Holland **campuses**, is available to help you with the writing you do in any of your classes.

Writing Consultants, who are GVSU students, have been trained to help you with all stages of your writing process, from brainstorming, to organizing, to editing your papers. The Center's services are free and appointments are not necessary. Simply bring a draft of your paper, the assignment sheet, and your questions/concerns about the writing to any of the Center's three locations:

- Allendale, LOH 120, 331-2922
- Pew/Grand Rapids, 101B DeVos, 331-6407
- Holland, see www.gvsu.edu/wc, 331-2922

Tell the Writing Consultant you work with that you would like notification of your visit to be sent to your professor.

Library support:

Gayle Schaub is the psychology librarian and she can provide you with individualized research assistance. Her office is in the Mary Idema Pew Library on the Allendale campus and she can be reached at schaubg@gvsu.edu or 331-2629. Her psychology library subject guide (<http://libguides.gvsu.edu/psych>) contains links to all of the psychology databases and other specific resources for psychology students.

Stats support:

The **Statistics Tutoring Center** is a place for students in many levels of stats classes to get help. Their central location is in Mackinac Hall on the Allendale campus, but they will also have tutors available in the Eberhard Center on the PEW campus. Tutoring is primarily done by GVSU undergraduates and is **FREE** to any GVSU student.

You can bring questions about your calculator, on methods and concepts, on specific problems, or on whatever you like. Don't have a question just yet? You can work your stats homework and, if you have a question, help is at hand! Feel free to call them at **616-331-8969** if you have any questions.

All tutoring in the Stats Center is FREE with no appointment needed. The student sign-in is for their own accounting.

Free online tutorial assistance:

- www.youtube.com
- www.khanacademy.org

MASK: CRITICAL READING in Research Methods

| | | |
|--------------|-----------------|--------------|
| NAME: | Section: | Date: |
|--------------|-----------------|--------------|

1) What method is it? Why? (Give two reasons) ? (4 pts)

2) What is the theoretical hypothesis? (4pts)

3) What is the debate in the field? (4 pts)

4) What is the theoretical and the operational definition of the dependent variable? (5 pts)

Theoretical:

Operational:

5) What is/are the theoretical & the operational definition(s) of the independent variable(s)? (5 pts)

Theoretical:

1)

2)

3)

Operational:

1)

2)

3)

6) **Is this study internally and externally valid? Why? (4 pts)**

Internal validity:

External validity:

7) **Are the measures reliable? Why? (4 pts)**

8) **What are the descriptive statistics used? (4pts)**

9) **What are the inferential statistics used ? (4 pts)**

10) Explain why (the steps) the authors chose this statistical test for their main result? (4 pts)

11) Can you think of two hidden variables (=information missing)? (4 pts)

12) Write your hypothesis for a follow-up experiment with dependent and independent variables (4pts)

MASK HELPER FOR THE 2 EXAMS

NAME:

Section:

Date:

1) What method is it? Why? (Give two reasons)? (4 pts)

Give the exact method name (correlational, experimental, quasi-experimental, observational, survey, case study) and 2 justifications

In your textbook, module 2 p. 20-24, glossary p.429-434, for specifics on quasi-experimental method see module 10 p.144

2) What is the theoretical hypothesis? (4pts)

= ~ General hypothesis. Often found in the title or in the abstract, short

3) What is the debate in the field? (4 pts)

You need to find the principal debate (what scientists disagree upon) that has to do with the specific question the study is addressing. This is found in the introduction and/or in the discussion.

Don't forget to give the two or three debated views. If there is no debate, say so!

4) What is the theoretical (short) and the operational (long) definition of the dependent variable? (5 pts)

Module 5 p. 70

Theoretical: = abstract concept, usually found in the abstract or in the title, expressed with one word or two only, not detailed (short) 2.5 pts

Operational : Module 5 p. 70, Glossary p.432.

Go to the graph if there is one and look at the y axis title (horizontal).

It is a measure (looking time in seconds, percentages, counts, frequencies)

Mention the details about the measures used (long) = 2.5 pts

5) What is/are the theoretical & the operational (long) definition(s) of the independent variable(s)? (5 pts)

Theoretical: =abstract concept, usually found in the abstract or in the title, expressed with one word or two only, not detailed (short) = 2.5 pts

Operational: Module 5 p. 70. Glossary p.432.

Be careful you usually have more than one IV!

Go to the graph if there is one and look at the X axis title and right side legend of graph.

Often they are groups. Mention the details about the groups (long) = 2.5 pts

6) Is this study internally and externally valid? Why? (4 pts)

Module 6, p.81. Glossary p.430 (construct validity, internal validity, external validity), validity p. 434. See also Module 12 for a list of threats to internal and external validity

2 answers here worth each 2 pts

*No/yes answer is **not** allowed here! Prefer words such as:*

Internal validity: *Not much internal validity, somewhat, rather internally valid because...*

External validity: *Not much external validity, somewhat, rather externally valid because...*

7) Are the measures reliable? Why? (4 pts)

Module 6, p.81. Glossary, p.431 (interrater reliability) and p.433 (reliability)

2 answers here worth each 2 pts

*No/yes answer is **not** allowed here! Prefer words such as:*

Not much reliability, somewhat, rather reliable because...

8) What are the descriptive statistics used?

Module 15, p. 215. Find them all.

Such as graphs, frequencies, measures of central tendency (mean, mode, median) and measures of variation (standard deviation, variance, confidence interval).

9) What are the inferential statistics used ?

Chapters 8 and 9 modules 17,18,19,20. Find them all. Different types of T-tests, different types of Analysis of variance (ANOVAS), different types of non parametric tests like Chi-squares, Mann-Whitney, Wilcoxon, Krushkal-Wallis.

10) Explain why (the steps) the authors chose this statistical test for their main result? (4 pts)

Use the chart we colored in yellow, pink and green + ppt on the six criteria. Alternatively use the flow chart in your SPSS manual.

For the inferential test of the main result of the paper, simulate the reasoning (the steps) the authors followed:

1) They needed to determine the number of samples=

- 2) They needed to determine whether the samples are dependent or independent or both=
- 3) They needed to determine what the goal of the study was [observing cases, finding an effect of the IV[s] on the DV or a relationship, or an association between variables]=
- 4) They needed to determine whether the IVs are categorical or continuous and whether the DV (scores) is nominal, ordinal, interval or continuous =
- 5) They needed to determine whether the variance between the samples was assumed homogeneous or not =
- 6) They needed to determine whether the distribution was assumed normal or not=

11) Can you think of two hidden variables ? (4 pts)

Be creative here (think in terms of possible flaws or variables they did not control for such as gender, SES, or cultural differences).

12) Write your hypothesis for a follow-up experiment with the dependent and independent variables (4pts)

*Write down just **one** hypothesis.*

If you added a variable don't forget to report it together with the variables from the experiment you just analyzed.

If you think your IV and DV are the same as before, say so.

Creating a table with 2 by 2 or 2 by 3 entries might help you

| IV1: | IV2: | Level 1 | Level 2 |
|-----------|------|---------|---------|
| Level 1 | | | |
| Level 2 | | | |
| (Level 3) | | | |

DV: