



**Tennessee State University**

**Department of Psychology**

**PSYC 7136.81**

**Statistics & Computer Applications to Research**

**Fall Semester, 2016**

Instructor: Marie S. Hammond, Ph.D.

Phone: 615-963-5191

Class Days/Times: Wednesdays, 2:00 – 4:50 p.m.

Office Hours: Wednesdays 1-2:00 pm and 5:00-6:00 pm; 1:30-4:30 pm on Tuesdays other times by appointment

Email: Given the vagaries of email systems, please send emails to both of the email addresses listed, in order to decrease response time: mshammond@comcast.net; mhammond1@tnstate.edu

## Teaching Assistant: Carin K. Smith, M.A.

Phone: 260-348-4946

Email: cksmith.tnstate@gmail.com

Class Lab time: Wednesdays, 5:00 – 6:00 pm

## Pre-requisites

* Admission into one of the Doctoral programs in Psychology
* Successful completion of PSYC 5040, or equivalent
* Successful completion of PSYC 5140, or equivalent

## Required Text(s) – used for one or more other classes & for completion of dissertation.

American Psychological Association (2009). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: Author.

George, D & Mallery, P. (2016). *SPSS for Windows Step-by-Step: A simple guide and reference* (14th ed.). New York, NY: Routledge. ISBN: 9780134320250 (Abbreviated “G&M” in schedule)

Loseke, D.R. (2016). *Methodological Thinking: Basic Principles of Social Research Design* (2nd ed.). Thousand Oaks, CA: Sage Publishing. ISBN: 9781506304717 (Abbreviated “L” in schedule)

Heppner,P.P., Wampold, B.E., Owen, J., Thompson, M.N., & Wang, K.T. (2016). *Research design in counseling* (4th ed.). Cengage Learning. ISBN: 1305087313 (Abbreviated “HW” in schedule)

Tabachnick, B.G. & Fidell, L.S. (2013). *Using Multivariate Statistics* (6th ed.). Boston: Pearson. ISBN: 9780205249244 (Abbreviated “T&F” in schedule) **NOTE: will use at the end of the course**

**Supplemental Resource Material**

APA Publication Manual website: <http://www.apastyle.org/>

**Supplemental Resource Material (continued)**

Heppner P. & Heppner M. (2004). Writing and publishing your thesis, dissertation & research. Belmont, CA: Brooks/Cole-Thomson Learning.

Articles/Chapters as assigned.

**Catalog Description:**

PSYC 7136 is the first course in the doctoral Advanced Research Core sequenceComplex data analysis and interpretation of additional multivariate topics with the use of statistical analysis packages (e.g., SPSS/Windows) and computer application to research and educational problems in order to facilitate research development and production in addition to consumerism. Course will include extra class requirements entailing time in the computer lab to complete assignments. Prerequisite: PSYC 5040 and PSYC 5140.

**Expanded Description:**

Psychology 7136 focuses on quantitative research. Students work with data collection in the field as well as with archival data. The course emphasizes the logic of research and the relationship between research problem/hypothesis, design and data analysis. Students will complete a research proposal and IRB application prior to the end of the semester. It is expected that students will have completed the master’s core research series prior to enrolling in the course.

**Relationship to Knowledge Base Model:**

This course provides a methodology necessary to evaluate research data and generate research in psychology and education. Students will expand upon the data analysis and multivariate topics covered in the masters’ core research series and add additional multivariate techniques to their repertoire. The course provides students an opportunity to design and fully execute a small-scale research study, which may become a basis for later dissertation work or professional research. Students will be expected to demonstrate innovation and accuracy in building a research initiative. A multicultural perspective, as it relates to the scientific evaluation of data through statistics, involves consideration of gender, class, and race/ethnicity.

**Relationship to Programs:**

This course is the first in a series of doctoral Advanced Research and Statistical Analysis courses. The course is designed to assist students in beginning a research program, which entails the use of advanced statistical skills and ability to read and incorporate psychological literature into an organized research proposal. The student should be able to use the skills for advancement to more complex research/statistical procedures and as a basis for building a dissertation proposal. Also, the course will help prepare students for the doctoral Qualifying Examinations in Research and Statistical Tools.

##### Course Proficiencies (Content Knowledge, Skills, Dispositions)

##### (\*Course proficiencies are based on the seven (7) Key Performance Areas which have identified by the Professional Education Unit. The complete listing of Key Performance Areas is available at [www.tnstate.edu/coeweb](http://www.tnstate.edu/coeweb%20) -> student resources -> key performance areas.) The following which pertain to this course are listed below.

KSD 3 EVALUATE

3.C.4. Synthesizes information gained from all sources, including student performance data, and makes changes in program/services, where appropriate.

KSD 5 ESTABLISHES AND MAINTAINS A PROFESSIONAL LEADERSHIP ROLE

5.A.3. Uses ideas from books, professional journals, and professional organizations to enhances services.

5.B.8. Shares material and resources with peers and others.

KSD 6 COMMUNICATE

6.A.2. Organizes written information.

6.A.3. Uses vocabulary and style appropriate to the level of the audience.

### Content Knowledge

1. To demonstrate an understanding of the relationship of statistical principles to research methodology in psychology and education.
2. To demonstrate a knowledge of advanced concepts in inferential statistical techniques
3. To demonstrate the use of computer software for research and statistical purposes.

### Skills

1. To further develop students’ skills in the preparation of research proposals and reports utilizing psychological literature and advanced statistical procedures.
2. To further develop students’ skills in selecting and utilizing appropriate statistical and psychometric techniques to answer research questions.
3. To demonstrate skill in computation and interpretation of the major inferential statistical techniques used in contemporary research in psychology and education, including nonparametric, and post-hoc tests.

### Dispositions

1. The student will be more likely to utilize the computer and statistics for reporting purposes.

**CAEP Portfolio Information (Artifact, Scoring Rubric)**

**Artifact(s) for Portfolio**

**Not Required**

### Scoring Rubric(s) for Artifact(s)

**Not Required**

**Expectations and General Information:**

1. **Academic Integrity** - You are responsible for what you achieve in this class; therefore neither cheating nor plagiarism will be tolerated. Any material taken from another work must be documented, and in no case should one represent another’s work as one’s own, this includes information received from others during examinations or submitting another’s assignments, papers, etc. as one’s own. Students involved in collaborative research, to avoid questions of plagiarism, should exercise extreme caution. If in doubt, students should check with the major professor. In addition to the other possible disciplinary sanctions which may be imposed through the regular institutional procedures as a result of academic misconduct, the instructor has the authority to assign an “F” or a zero for the exercise or examination, or to assign an “F” in the course.
2. **Classroom conduct** –The instructor has the primary responsibility for control over classroom behavior and maintenance of academic integrity, and can order temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or conduct in violation of the general rules and regulations of the institution.
3. **Attendance** – Missing more than 3 classes (20% of the course) will result in a one letter drop in the student’s grade; missing additional classes will result in an additional one-half grade drop.
4. **Late Assignments** – Scores for late assignments will be reduced by 10% per day late. To be considered “on time” the assignment must be turned in by the end of class. Emailed assignments must be time-stamped no later than midnight of the due date.
5. **Official Course Enrollment** - Students who are not on the official class roll may not remain in class. These students must leave class and may not return to class until they enroll in the course and their names show up on the official class roster. Please make sure you are in the correct section.
6. **DISABILITY ACCOMMODATION STATEMENT**. TSU is committed to creating inclusive learning environments and providing all students with opportunities to learn and excel in their course of study. Any student with a disability or condition which might interfere with his/her class performance or attendance may arrange for reasonable accommodations by visiting the Office of Disability Services (ODS). ODS is located in Kean Hall, room 131 and can be reached at 963-7400 or [www.tnstate.edu/disabilityservices](www.tnstate.edu/disabilityservices%20). You will be required to speak with ODS staff and provide documentation of the need for an accommodation. If you qualify for an accommodation you will be provided with a document stating what type of classroom accommodations are to be made by the instructor. It is your responsibility to give a copy of this document to the instructor as soon as you receive it. Accommodations will only be provided AFTER the instructor receives the accommodation instructions from ODS; accommodations are not retroactive. You must follow this process for each semester that you require accommodations.
7. **SEXUAL MISCONDUCT, DOMESTIC/DATING VIOLENCE, STALKING.** TSU recognizes the importance of providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic violence, dating violence, and stalking.  If you (or someone you know) has experienced or is experiencing any of these incidents, there are resources to assist you in the areas of accessing health and counseling services, providing academic and housing accommodations, and making referrals for assistance with legal protective orders and more. Please be aware that most TSU employees, including faculty and instructors, are “responsible employees”, meaning that they are required to report incidents of sexual violence, domestic/dating violence or stalking.   **This means that if you tell me about a situation involving sexual harassment, sexual assault, dating violence, domestic violence, or stalking, I must report the information to the Title IX Coordinator.**  Although I have to report thesituation, you will still have options about how your situation will be handled, includingwhether or not you wish to pursue a formal complaint.  Our goal is to make sure you areaware of the range of options available to you and have access to the resources youneed.  You are encouraged to contact TSU’s Title IX Coordinator to report any incidents of sexual harassment, sexual violence, domestic/dating violence or stalking.  The Title IX coordinator is located in the Office of Equity and Inclusion, McWherter Administration Building, Ste. 260 and can be reached at 963-7494 or 963-7438.  For more information about Title IX and TSU’s SART or policies and procedures regarding sexual, domestic/dating violence and stalking please visit:  [www.tnstate.edu/equity](http://www.tnstate.edu/equity). If you wish to speak to someone confidentially, who is not required to report, you can contact the TSU Counseling Center, located in the basement of Wilson Hall, at 963-5611 or TSU Student Health Services, located in the Floyd Payne Campus Center room 304, at 963-5084.  You may also contact the following off campus resources:  Sexual Assault Center of Nashville at 1-800-879-1999 or [www.sacenter.org](http://www.sacenter.org) or the Tennessee Coalition to End Domestic & Sexual Violence at 615-386-9406 or [www.tncoalition.org](http://www.tncoalition.org) .
8. **HARASSMENT & DISCRIMINATION.** Tennessee State University is firmly committed to compliance with all federal, state and local laws that prohibit harassment and discrimination based on race, color, national origin, gender, age, disability, religion, retaliation, veteran status and other protected categories.  TSU will not subject any student to discrimination or harassment and no student shall be excluded from participation in nor denied the benefits of any educational program based on their protected class.  If a student believes they have been discriminated against or harassed because of a protected class, they are encouraged to contact the Office of Equity and Inclusion at McWherter Administration Building, Ste. 260, 615-963-7494 or 963-7438, [www.tnstate.edu/equity](http://www.tnstate.edu/equity).

**Methods of Instruction:**

The course will utilize many methods of instruction including discussions, lectures, handouts, internet use, media presentations, review/critique of research literature, a literature review, and data analysis. The emphasis in this course is on seminar-type discussions in which students reinforce their learning through actively engaging with the topic. As such, emphasis will be placed on observation of student development through in-class activities and out-of-class assignments. The ability to display one’s knowledge in discussion through use of terminology, theory, and grounded critical analysis is incorporated into the evaluation criteria below.

**Student Requirements/Evaluation:**

Attendance and participation is required. Please make every attempt to attend all class meetings on time. These provide the "instruction" for you to develop more as a psychologist/researcher. In addition, your contributions to the class are valuable and facilitate evaluation of your mastery of the concepts. You are expected to arrive on time and remain in class. Please turn-off mobile phones or similar communication devices prior to the beginning of class.

The purchase of required texts is mandatory. The additional resources are not required for successful completion of the course. They are provided to supplement student’s learning, should they believe that they need strengthening in an area, or want to go beyond the minimal readings for the course. The computer program is accessible on campus computers, but the manual that comes with the program will be of great assistance in learning to work with the program, if you have not worked with SPSS before. Papers shall use APA publication manual style – no other format is acceptable.

The classroom is a shared learning environment. While the instructor brings into the setting information, structure, experiences that are designed to facilitate learning, student participation in these activities is critical for the development of all students’ knowledge. Thus, class participation will be evaluated in three categories: simply showing up for class and being respectful of the learning situation, including respect for the uniqueness of each individual in the class; participation in discussions and raising relevant questions; and the content of your participation. The first category refers to one’s demeanor in class. Being late, receiving calls, leaving early, engaging in side conversations detracts from other students’ ability to learn. Respecting each other’s right to learn is essential to creating a positive learning environment. The second category evaluates your active participation in class. Active participation is defined as bringing into the discussion relevant examples that facilitate the explication of a point, raising questions that facilitate further discussion, and similar ways of engaging in discourse that respectfully advance all students’ development in the course. The third component of class participation is your demonstration of mastery of the content through such things as use of appropriate terminology, ability to discuss the concepts effectively, and quality of the journal article presentation.

There are a few things that will facilitate the provision of feedback on the work you produce. If you could attend to these, response times will be lower and the effectiveness of the feedback will increase:

1. elearn has difficulties with some word processing programs (e.g., MS Works). Please use MS Word if at all possible.
2. Uploading a PDF will prevent me from providing specific feedback, as I will be unable to use track changes and comments to assist you in improving your skills. Please accommodate this limitation.

**Research Topic Citation list**. The foundation of a research study is the underlying rationale for the study, derived from the extant research literature. To help you focus your work, you will conduct a lit search for studies on your topic and turn in a list of pertinent references for your project.

**Research proposal**. The major assignment for the class is the preparation and write-up of a completed research proposal (including IRB approval), similar to the proposal you would prepare for a dissertation proposal. APA format (6th edition) is required; mandatory components are: title page, abstract, introduction, methods (participants, measures, materials, design and analysis, power, procedure) and references; optional components include tables, figures, and appendices. Additional references on dissertation construction are provided in the bibliography on dissertating.

The student should be prepared to discuss progress on their research project as indicated on the weekly schedule. If barriers, issues, or other problems come up prior to that time, the student is expected to bring those up in class, regardless of the weekly schedule. See rubric for more detailed information on the evaluation of these assignments.

1. Students are expected to move the study through the proposal phase by the end of the semester. This includes:
2. Defining and narrowing a research topic to a manageable project.
3. Reviewing the literature.

3. Preparing an abstract.

3. Drafting a literature review.

4. Selecting an appropriate research design.

5. Selecting appropriate variables and related measures.

6. Drafting an appropriate and complete Method section.

7. Conducting a professional presentation of the research proposal to the class.

b. APA 6th edition standards are required, as is the use of the manuscript template uploaded to elearn. Papers not utilizing APA 6th edition style and the template will not be graded and will earn a zero for the assignment.

c. Presentation of the proposal as a formal professional presentation, including professional dress, the use of a PPT presentation, and an APA-style handout (PPT handout) is required.

**Draft Research Proposal Review**. In order to assist you in refining your proposal, you will be asked to review and critique the draft proposal of one of your students. You should conduct the review using the guide posted on elearn.

**Midterm and Final Portfolio.** In the place of examinations, you will develop a Research Methods portfolio that demonstrates your competence in the selection and implementation of culturally-appropriate research methods to research and practice. These are to be organized into a notebook and presented similarly to how you would present your professional credentials for internship, licensure, and employment. The content must include the following: a summary of the chapter, an annotated bibliography of related readings (at least two); a critique of a journal article in your professional field (Counseling or School Psychology) in which the design/issue is salient. The portfolio will be graded using the rubric posted to elearn.

### Grading System

Attendance & Participation (5 point/class meeting) 75 points (total)

Research Topic

 - Topic Description 5 points

 - Citation List 30 points (15 points each set)

Literature Review Summary 40 points

Human Subjects Training Completion 5 points

Pilot Study -

 IRB application 20 points

 IRB application submission 5 points

 Draft Research proposal review 30 points

 Research Proposal (proposal+writing) 102 points

 Research presentation handout 5 points

 Research presentation 15 points

Midterm Research Methods Portfolio 84 points

Final Research Methods Portfolio 84 points

 500 points possible

**Grade Criteria:**

A = 450-500 points (the student demonstrates a depth of knowledge and scholarship that goes significantly beyond the minimum requirements for successful completion of the course; completed work demonstrates understanding and integration of the concepts and information at a level beyond minimum goals; the student demonstrates the ability to apply course content, their knowledge & skills to new situations; the student completes assignments thoroughly and accurately, using APA format; the student demonstrates originality, leadership, and the ability to communicate effectively in both written and spoken form.)

B = 400-449.5 points (the student demonstrates a level of knowledge and scholarship that more than meets minimum requirements for successful completion of course; completed work demonstrates an understanding and integration of the concepts and information at more than a minimal level acceptable for doctoral-level work; the student demonstrates minimal, yet consistent, ability to apply the course content and their knowledge & skills to new situations; the student completes assignments at a minimally acceptable level for doctoral-level training, but uses APA format consistently; the student demonstrates thorough understanding of knowledge, skills, and attitudes essential to adequate preparation for practice in this area; the student demonstrates some originality; leadership, and communication (written and oral) are minimally acceptable for doctoral-level training.)

C = 350-399.5 points (The student demonstrates a level of knowledge and scholarship that is at the minimum for successful completion of the course requirements; completed work demonstrates an understanding and integration of the concepts and information at a minimal level acceptable for doctoral-level training, but uses APA format consistently; the student demonstrates a minimal understanding of the knowledge, skills, and attitudes essential to adequate preparation for practice in this area; the student demonstrates little originality, leadership, and/or has poor communication (written and/or oral) skills.)

D = 300-349.5 points (The student demonstrates a level of knowledge and scholarship that is less than the minimum for successful completion of the course requirements; completed work demonstrates an understanding and integration of the concepts and information less than a minimal level acceptable for doctoral-level training, and/or uses APA format inconsistently; the student demonstrates less than a minimal understanding of the knowledge, skills, and attitudes essential to adequate preparation for practice in this area; the student demonstrates little originality, leadership, and/or has poor communication (written and/or oral) skills.)

F < 300 points (unsatisfactory knowledge or understanding of subject material, skills not developed to a minimal level, attitudes essential to practice remain undeveloped, work not completed, or student engage in cheating and/or plagiarism)

**Grading issues:** Per TSU/TBR policy and your professional ethical standards, if you are found to have used another student’s work (cheating) or provided someone your work that they represent as their own, you will receive zero points for each assignment on which this occurs. Again, per TSU/TBR policy and your professional ethical standards, plagiarizing information from a website, journal article, or any other source is considered unacceptable behavior. **Once your work is turned in for grading, you are claiming that it is your own work, except for documented ideas and quotes from others.**  If your work contains material taken from another source that is not appropriately cited or attributed to another, you are claiming it as your own, which is plagiarism. If the work contains plagiarism, you will receive zero points for that work. This will apply separately for each assignment/task in which plagiarism occurs.

**Writing Rubric** (from the University of California)

**http://www.sdcoe.k12.ca.us/score/actbank/subja.htm**

The categories below describe the characteristics typical of papers at six different levels of competence.

**Score 6**

A 6 paper commands attention because of its insightful development and mature style. It presents a cogent analysis of or response to the text, elaborating that response with well-chosen examples and persuasive reasoning. The 6 paper shows that its writer can usually choose words aptly, use sophisticated sentences effectively, and observe the conventions of written English.

**Score 5**

A 5 paper is clearly competent. It presents a thoughtful analysis of or response to the text, elaborating that response with appropriate examples and sensible reasoning. A 5 paper typically has a less fluent and complex style than a 6, but does show that its writer can usually choose words accurately, vary sentences effectively, and observe the conventions of written English.

**Score 4**

A 4 paper is satisfactory, sometimes marginally so. It presents an adequate analysis of or response to the text, elaborating that response with sufficient examples and acceptable reasoning. Just as these examples and this reasoning, will ordinarily be less developed than those in 5 papers, so will the 4 paper's style be less effective. Nevertheless, a 4 paper shows that its writer can usually choose words of sufficient precision, control sentences of reasonable variety, and observe the conventions of written English.

**Score 3**

A 3 paper is unsatisfactory in one or more of the following ways. It may analyze or respond to the text illogically; it may lack coherent structure or elaboration with examples; it may reflect an incomplete understanding of the text or the topic. Its prose is usually characterized by at least one of the following: frequently imprecise word choice; little sentence variety; occasional major errors in grammar and usage, or frequent minor errors.

**Score 2**

A 2 paper shows serious weaknesses, ordinarily of several kinds. It frequently presents a simplistic, inappropriate, or incoherent analysis of or response to the text, one that may suggest some significant misunderstanding of the text or the topic. Its prose is usually characterized by at least one of the following: simplistic or inaccurate word choice; monotonous or fragmented sentence structure; many repeated errors in grammar and usage.

**Score 1**

A 1 paper suggests severe difficulties in reading and writing conventional English. It may disregard the topic's demands, or it may lack any appropriate pattern of structure or development. It may be inappropriately brief. It often has a pervasive pattern of errors in word choice, sentence structure, grammar, and usage.

**Tentative Class Schedule**

This course schedule is tentative and may change at the instructor’s discretion. Changes to the schedule will be announced in class or via email; it is the students’ responsibility to be aware of such announced changes.

**Week Date Research/Statistics/Special Topics/Assignments**

1 8/24 Introduction to course. Discussion of students’ research ideas; review of syllabus.

 **Readings:** HW 1-2, L 1-2

2 8/31 Grounding research in our practice (ethics & communication).

 **Readings:** HW 3-4, L 8

 **Due:** Set 1 of 100 citations

 **Activity:** form research teams; review forms for facilitating literature reviewing

3 9/7 Overview of designing a research study & integrative literature reviewing

 Readings: HW 5-6, L 3-4

 **Due:** Set 2 of 100 citations due

 **Activity:** bring 2-3 of your articles to class for small group discussion.

4 9/14 Psychometrics & Validity Issues in research.

 **Readings:** HW 7 & 10; L 5

 **Activity:** bring literature review table to class for small group discussion.

 **Colloquium**: Validity & Reliability in Research Design, Jonathan Steinberg (Tuesday, September 13th 7:00 pm)

5 9/21 Cultural & Diversity issues in research

 **Readings:** HW 8-9; L 7

 **Activities:** Bring in 2-3 of your articles for discussion of attention to (or, lack thereof) to cultural and diversity issues; bring draft outline to class for discussion/feedback

6 9/28 Research Designs: True, Quasi-Experimental, & Longitudinal Designs

 **Readings:** HWK 11-12

 **Due:** Literature Summary table due (at least 25 articles should be summarized)

 **Activity:** Review the literature you are tapping into and find one article for each of these designs. Bring them to class for discussion.

7 10/5 Research Designs: Quantitative Descriptive, Analogue & Single-Subject Designs..

 **Readings:** HWK 13-15

 **Activity:** Review the literature you are tapping into and find one article for each of these designs. Bring them to class for discussion.

 **Presentation (tentative):** Preparing your IRB (Presentation): Dr. Pamela Burch-Sims, IRB Chair (IRB Training website: <http://www.tnstate.edu/research/researchresources/compliance.aspx> )

8 10/12 MIDTERM EXAMINATION WEEK; Research Designs: Qualitative & Mixed Methods Designs

 **Readings:** HWK 16-17

 **Activities**: Review the literature you are tapping into and find one article for each of these designs. Bring them to class for discussion. Bring draft proposal to class for discussion/feedback.

 **Due: Research Methods Portfolio to date**

9 10/19 Implementing the Research Design: IV’s & DV’s, sample size

 **Readings:** HWK 18-19, L 6

 **Activity:** download and review G\*power manual - (http://gpower.hhu.de/)

 **Assignment:** Turn in current IRB training certificate

10 10/26 Implementing the Research Design: Outcome Research, Process Research. & Program Evaluation

 **Readings:** HWK 20-22

 **Activity:** Bring in draft of proposal & IRB application for review & feedback

11 11/2 Bias in Research

 **Readings:** HWK 23, L 7

 **Due:** Upload copy of complete IRB application packet to elearn; provide copy for signature & submission to the Office of Institutional Effectiveness (including copies of measures)

12 11/9 Review of SPSS Basics & Univariate/Bivariate Statistics review

**Readings:** G&M 1-5 (how to use SPSS program); 6-12 (obtaining univariate/bivariate statistics); T&F 3

 **Assignments:** Forward the IRB department’s receipt of IRB application notice to instructor;

13 11/16 Introduction to Multivariate Statistics & Data Cleaning

 **Readings**: T&F 1-2 & 4

 **Due**: proposal review

 ***Sona Systems Training***

14 11/23 **THANKSGIVING WEEK BREAK**

15 11/30 **Presentation** of written research proposals

 **Due:** Upload full proposal and PPT to elearn

16 12/7 **Presentation** of written research proposals

 **Due:** Final Research Portfolio

**Additional Readings/Resources**

Everyone learns differently, so below are listed a variety of resources to empower you to maximize your learning in this course:

* SPSS, Statistica, and other organizations have posted online textbooks to their websites which can serve as additional resources.
* The internet and particularly U-Tube contains numerous “how-to” videos on how to do various statistical procedures and faculty from various institutions have posted lectures on a variety of statistical procedures which can serve as additional resources.
* TSU’s library contains numerous texts and handbooks on statistical procedures which can serve as additional resources.

Abelson, R.P. (1995). Statistics as principled argument. Hillsdale, NJ: Lawrence Earlbaum Associates.

Cook, T.D., & Campbell, D.T. (1979). Quasi-experimentation: Design & analysis issues for field settings. Boston: Houghton Mifflin.

Kazdin, A. E. (2003). Research design in clinical psychology (4th ed.). Boston: Allyn and Bacon.

Kline, R.B. (2004). Beyond significance testing: Reforming data analysis methods in behavioral research. Washington, D.C.: American Psychological Association.

Meltzoff, J. (1998). Critical thinking about research: Psychology and related fields. Washington, D.C.: American Psychological Association.

Shadish, W.R., Cook, T.D., & Campbell, D.T. (2002). Experimental and Quasi-Experimental Designs for Generalized Causal Inference. Boston: Houghton-Mifflin.

Sieber, J.E. (1992). Planning ethically responsible research: A guide for students and Internal Review Boards. Newbury Park: Sage Publications.

**Journal Articles:**

Vacha-Haase, T.I. & Thompson, B. (2004). How to Estimate and Interpret Various Effect Sizes.

Journal of Counseling Psychology. 51(4), 473-481.

Cohen, J. (1994). The earth is round (p < .05). American Psychologist, 49(12), 997-1003.

Cohen, J. (1992). A power primer. Psychological Bulletin, 112(1), 155-159.

Strong, S. R. (1991). Theory-driven science and naive empiricism in counseling psychology. Journal of Counseling Psychology, 38(2), 204-210.

Gelso, Charles J. (1991). Galileo, Aristotle, and science in counseling psychology: To theorize or not to theorize. Journal of Counseling Psychology, 38(2), 211-213.

Patton, M. J. & Jackson, A.P. (1991). Theory and meaning in counseling research: Comment on Strong. Journal of Counseling Psychology, 38(2), 214-216.

Strong, S.R. (1991). Science in counseling psychology: Reply to Gelso (1991) and Patton and Jackson (1991). Journal of Counseling Psychology, 38(2), 217-218.

A list of references is available in your doctoral student handbook and should be used in preparation for your qualifying examinations. Additional research and statistics resources are to be found on the course website.

**A Bibliography on Developing Research Skills**

**General Research Skill Development**

Abelson, R.P. (1995). *Statistics as principled argument*. Hillsdale, NJ: Lawrence Earlbaum Associates.

Booth, W.C., Colomb, G.G., & Williams, J.M. (1995). *The craft of research*. Chicago: the University of Chicago Press.

Cooper, H.M. (1989). *Integrating Research: A guide for literature reviews*. Newbury Park, CA: Sage.

Girden, E.R. (2001). *Evaluating Research Articles from Start to Finish* (2nd ed.). Newbury Park, CA: Sage.

Johnson, W.B. & Huwe, J.M. (2002). *Getting Mentored in Graduate School.* Washington, D.C.: American Psychological Association.

Kline, R.B. (2009). *Becoming a behavioral science researcher*. NY: Guilford Press.

Kuther, T.L. (2008). S*urviving Graduate School in Psychology: A Pocket Mentor*. Washington, D.C.: American Psychological Association.

Leong, F.T.L. & Austin, J.T. (eds.). (1996). *The psychology research handbook: A guide for graduate students and research assistants.* Newbury Park, CA: Sage.

Meltzoff, J. (1998). *Critical thinking about research: Psychology and related fields*. Washington, D.C.: American Psychological Association.

Richardson, L. (1990). *Writing Strategies: Reaching Diverse Audiences*. Newbury Park: Sage Publications.

Sieber, J.E. (1992). *Planning ethically responsible research: A guide for students and Internal Review Boards*. Newbury Park: Sage Publications.

Silvia, P.J. (2007). *How to Write a Lot: A Practical Guide to Productive Academic Writing*. Washington, D.C.: American Psychological Association.

Silvia, P.J., Delaney, P.F., & Marcovitch, S. (2009). *What Psychology Majors Could (and Should) Be Doing: An Informal Guide to Research Experience and Professional Skills*. Washington, D.C.: American Psychological Association.

Sternberg, R.J. (ed.). (2005). *Reviewing Scientific Works in Psychology*. Washington, D.C.: American Psychological Association.

Walliman, N. (2001). *Your Research Project: A Step-by-Step Guide for the First-Time Researcher*. Newbury Park, CA: Sage.

**A Bibliography on Dissertating**

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