**Advanced Research Methods and Experimental Design**

**BSAD 6311**

Date: Thursday 2:00 – 4:50

Location: COBA 139

Instructors: Wendy Casper

139 COBA

Office Hours: by appointment

Contact Info: 817-272-1133

wjcasper@uta.edu

**Course Description:**

This course covers the fundamentals of applied social science research in various areas of business. It is designed to help you develop skills that will enable you to effectively evaluate the research of others and to design, conduct, and report on research of your own. In general, the scientific process employs both theory and data in an effort to describe, explain, predict, and/or influence some phenomenon of interest. Thus, we will be focusing on theory development, construct measurement, research methods, and research critiques as part of an integrated sequence. You will be exposed to the logic underlying the research process as well as a broad range of design and assessment methods. Throughout the course there will be an emphasis on both conceptual understanding and the development of practical "how‑to" skills. Topics covered in the sequence are organized in terms of the stages of the research process, beginning with theory building and ending with interpretation and verification.

The theory building section will focus on issues such as philosophy of science, inferences of causality, and ascertainment of the current state of knowledge in a given domain. Hypothesis generation, selection of a research problem, and basic research design will also be covered in this section.

The next section will move from theory building to data collection and construct measurement. This section will deal with construct definition, reliability and validity of measurement, and the link between theory and measurement systems. It will also focus on identifying key independent and dependent variables of interest for a particular research question.

The measurement of constructs is only one part of the data collection process. The other part involves the selection of different research designs to answer different questions posed by research hypotheses. This section will cover the sampling strategies and strengths/disadvantages of alternative research methods.

Each of these sections are part of a continuous cycle of theory building and theory testing. In this cycle, theories lead to hypotheses, which then drive measurement and data collection. The measurement and collection of data, in turn, influence the statistical techniques employed and the conclusions that can reasonably be drawn from the data. These conclusions are then verified and influence future theory development.

In this course we would like to provide you with flexible research skills that will help you to meet the challenges you will face as a scholar. If your goal is to do quality research, then you will benefit greatly from this course. Thus, I intend to give you the tools that will help you to build your knowledge and expertise in a chosen area of work. You will become familiar with methods ranging from classical experimental paradigms, to quasi‑experimental methods, to field/correlational approaches. You'll also be exposed to a wide range of measurement strategies, including questionnaires, interviews, observation, and archival data. After developing the conceptual foundation for conducting research, we will develop a basic understanding of research methods and designs. Over the course of the semester, you will identify a substantive area of interest, conduct a review of the relevant theoretical and empirical literature, and formulate a specific research question you would like to answer. This then, will help you to develop a detailed research plan, culminating in a research proposal.

**Course Objectives:**

By the end of this course students will be able to:

1. Write a specific, directional hypothesis statement, including hypotheses that specify mediation and moderation
2. Understand the difference between a latent construct and an operational definition, and choose or develop an operational definition for a latent construct
3. Describe the trade-offs in different research strategies with respect to rigor, relevance, and generalizability
4. Apply the concepts of classical test theory to evaluate the reliability of measurement instruments
5. Design a research study to answer a question in their area of research including experiments, quasi-experiments, and correlational studies
6. Design manipulations to be used in experimental and quasi-experimental research
7. Understand how randomization enhances validity
8. Evaluate a research design by identifying what threats to internal and external validity are present; recommend changes to that research design to eliminate specific threats to validity
9. Determine whether a study provides evidence of construct validity, develop a plan to evaluate construct validity

Required Texts:

Cook, T. D., & Campbell, D. T. (1979). *Quasi‑experimentation: Design and analysis issues for field settings*. Boston, MA: Houghton Mifflin. ISBN 0-395-30790-2; (C&C)

Pedhazur, E. J., & Schmelkin, L. P. (1991). *Measurement, design, and analysis: An integrated approach*. Hillsdale, NJ: Lawrence Erlbaum. ISBN 0-8058-1063; (P&S)

**Course Grades:**

Assignments and Quizzes 20%

Research Paper 30%

Research Presentation 20%

Exam 30%

**Assignments and Quizzes**

There will be assignments and quizzes throughout the semester based on the readings and material covered in class. The assignments are designed to clarify specific issues based on the material covered in class, to move you forward on your research proposal, which is discussed in the next section, and to prepare you for the comprehensive examination based on the courses that you take in the research field. These assignments are due on the day the class meets or no points will be awarded. The quizzes will be given some weeks in order to test the degree to which you are keeping up with the course material throughout the semester. At the end of each week either an assignment (sometimes both) will be given which is due the following week or there will be a quiz the following week on material covered in that class.

**Research Project**

A major focus of this class is to assist you with developing a formal research proposal. For many in class, this will be the first try at designing a research project from start (theory) to finish (methods). This project, for some, may evolve into a research study or may provide a step along the way towards a dissertation. In this project, you will go through the same steps that you will use for your dissertation, with the exception of the data analysis and discussion sections.

Your topic should be from your major field, of interest to you, and of sufficient importance to people in your field to justify spending your time doing the research. Models to use are research articles from your major field that are empirical articles that collect and analyze data. The research project does not have to be an experiment. It can be an empirical study where you used archival data and/or collected data by self-report measures. However, all projects must use a **research strategy** consistent with the course material.

The proposal should contain the following sections. The best was to sample material in each section is to read articles in your discipline. You mimic the framework they use in your paper. You are best advised to read articles from the top academic journals in your field. Sections include:

1. **Literature Review** – A comprehensive review of the literature leads up to the specific research questions that you are examining. You need to lead us from what we know to what we need to know. What questions are not answered by past studies that need to be answered? Even when you are charting a new direction, build your theory section based on theoretical models and related research, although the context for theoretical foundations and related research may be related disciplines. For example, in looking at team programming, there is little literature in information systems, but you can look at the team problem-solving literature in the behavioral science to build a case for using teams in programming.
2. **Hypotheses Derivation and Hypotheses Statements** – The theoretical justification for the hypotheses must be clearly presented. In doing this, you must illustrate the model that you are testing and the specific hypotheses that you are examining. Clear directional statements of the hypotheses follow the theoretical justification.
3. **Methods Section** **–** This is a methods course, so this section must include all of the details about how you are going to conduct your research. This covers everything from subjects to dependent measures. The level of detail should allow others to know exactly what you did in order to replicate your research. The methods section includes a number of subsections such as Subjects, Design, Procedures, Measures, and Proposed Analyses. What is described in each section can vary according to the specific type of study that you are conducting.
4. **Appendix** – Please include all materials, such as consent forms, measures (scales), instructions, debriefing sheets, and instructions to the participants. The appendix should contain a completed UTA IRB prospectus. The IRB prospectus should not be submitted but instead be completed as if you were to submit it for approval by the University. The text of the proposal excluding the appendix and references should not exceed 20 pages. The appendix can be any length as appropriate.

**Preliminary Research Proposals**

At minimum, a three-page, single-spaced description of your proposal is due on Oct 3. This proposal should briefly describe the theoretical framework for your study, the hypotheses, and the methods you intend to use in this research. This will allow me to give you some early feedback on your project, to assist you with your project, and to try to avoid major problems which can be difficult to correct at a later time.

**Research Project Presentations**

Each student will present his or her completed research proposal to the other members of the class and invited faculty at the end of the semester. Reference style and formatting is available at the journal websites under Instructions to Authors. An executive summary of your research proposal must be copied and distributed to the class on the day of your presentation, along with any slides that you use in your presentation.

**Exam**

After the material has been completed, but before the final two classes in which we will have presentations, you will have an exam covering the material we learned this semester. The goal of the exam is to assess the breadth and depth of your knowledge of course material and to prepare you for comprehensive exams. At a later date I will provide you more information on the exam so that you will have more information to prepare for it.

**Communication Outside Class**

I am available to meet with students outside of class to discuss questions and concerns. If you wish to meet with me please send me an email and we will arrange a mutually convenient time to meet. If I have updates for you outside of class I will communicate with you via email. Each and every one of you has an email address provided by UTA for you to use and this is the email address I will use to communicate with you so please check your UTA email regularly. I realize many of you have other email addresses that you use more often than your UTA email. However, UTA is progressively moving toward a system whereby the spam filter filters out many of the other email addresses that you use. Therefore, I am adopting a policy to communicate with students only via UTA email to minimize problems with the spam filter. You are responsible for all updated information about the class (schedule changes, etc.) that is communicated to you through your UTA email. Therefore, not being aware of a change because you did not read UTA email will not be deemed an acceptable reason for lack of awareness about changes pertinent to the course.

**Tentative Schedule of Class (Subject to change)**

**Aug 22 - Scientific Method and Hypothesis Generation**

Purpose of research - System of research - Research Strategies - Falsification and null hypothesis testing - Type I and Type II error - Empirical inquiry and interesting problems - Developing and pursuing a research idea

Book Readings: \* P&S - Ch 7, 9 (pp 147-163; pp 180-210)

\* P&S - Ch 1 (pp 1-14)

**Required Article Readings:**

Daft, R. L. 1984. Antecedents of significant and not so significant organizational research. In T. Bateman and G. Ferris (Eds.), *Method and analysis in organizational research*, 3-14. Reston, VA: Reston Publishing.

Hollenbeck, J. 2008. The role of editing in knowledge development: Consensus shifting and consensus creation. In Y. Baruch, A. M. Konrad, H. Aguinis, & W. H. Starbuck (Eds.), [Opening the black box of editorship](http://alpha.lib.uwo.ca/record=b4962678) (pp. 16-26).  New York:  Palgrave MacMillan

**Supplemental Article Readings:**

Schroeder, D. A., Johnson, D. E., & Jensen, T. D. 1985. Reading research reports: A brief introduction. In D. A. Schroeder, D. E. Johnson, & T. D. Jensen (Eds.), *Contemporary Readings in Social Psychology*, 35-42. Nelson-Hall: Chicago.

**Aug 29 - Introduction to Basic Research Design**

Operational definitions - Longitudinal vs. cross‑sectional vs. sequential - Experimental vs. quasi‑experimental vs. field - Single vs. multiple subject designs - Notion of control and inference of causality - Strengths and weaknesses of various designs – Mediation – Interactions and Moderation

Book Readings: \*C&C - Ch 1 (pp 1-36)

\*P&S - Ch 8 (pp. 164-179)

\*P&S - Ch 10, 11 (pp 211-249)

**Supplemental Article Readings:**

Campbell, J. P. 1986. Labs, fields, and straw issues. In E. A. Locke (Ed.), *Generalizing from laboratory to field settings* (pp. 268‑279). Lexington, MA: Lexington Books.

McGuire, W. J. 1997. Creative hypothesis generating in psychology: Some useful heuristics. *Annual Review of Psychology*, 48: 1-30.

Baron, R. M., & Kenny, D. A. 1986. The mediator-moderator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51: 1173-1182.

**Sept 5 - Constructs and Measurement, Reliability**

Variables - Constructs - Reliability - Classical test theory - Test‑retest - Parallel forms - Coefficient alpha - Interrater reliability

Book Readings:

\*P&S - Ch 5 (pp. 81-117)

**Required Article Readings**:

Hinkin, T. R. 1998. A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods, 1*, 104-121.

Edwards, J. R. 2011. The fallacy of formative measurement. *Organizational Research Methods, 14*, 370-388.

Lance, C. E., Butts, M. M., & Michels, L. C. 2006. The sources of four commonly reported cutoff criteria : What did they really say? *Organizational Research Methods, 9*: 202-220. (Read pages 205-207, reliability section)

**Supplemental Article Readings:**

Cortina, J. M. 1993. What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology, 78*: 98‑104.

Hinkin, T. R. 1995. A review of scale development practices in the study of organizations. *Journal of Management, 21*: 967‑988.

Schmidt, F. L., & Hunter, J. E. 1996. Measurement error in psychological research: Lessons from 26 research scenarios. *Psychological Methods, 1*: 199-223.

**Sept 12 - Validity**

Content - Criterion‑related - Construct - Convergent and discriminant - MTMM

Book Readings: \*P&S - Ch 3 (pp. 30-51)

\*P&S - Ch 4 (pp. 52-80)

**Supplemental Article Readings:**

Campbell, D. T., & Fiske, D. W. 1959. Convergent and discriminant validation by the multitrait‑multimethod matrix. *Psychological Bulletin, 56:* 81‑105.

Landy, F. 1986. Stamp collecting versus science: Validation as hypothesis testing. *American Psychologist, 41*: 1183‑1192.

**Sept 19 - Threats to Validity and Research Designs**

Control and artifacts - Causality and inference of causality - Threats to validity - Statistical, Internal, Construct, External validity - Randomization and sampling strategies

Book Readings: \* C&C - Ch 2 (pp. 37‑94)

\*P&S – review again, pp. 224-232

**Sept 26 – Experimental Designs & Experimental Control**

Using research questions to guide selection of design - Designing manipulations or choosing "strong" IVs - Validity: Two or three group, post‑test only; Pre‑test, post‑test; Solomon Four‑Group Design; Two cell experimental designs: Individual differences as error - Randomization - Homogenizing on confounding variables - Blocking/Matching - Build extraneous variable into design as a factor - Sampling

Book Readings: \* P&S - Ch 12 (pp. 250-276)

\*C&C - Ch 8 (pp. 341-386)

\*P&S - Ch 15 (pp. 318-341)

**Required Article Readings:**

Shen, W., Kiger, T. B., Davies, S. E., Rasch, R. L., Simon, K. M. & Ones, D. S. 2011. Samples in applied psychology: Over a decade of research in review. *Journal of Applied Psychology, 96*: 1055-1064.

**Supplemental Article Readings:**

Mook, D. G. 1983. In defense of external invalidity. *American Psychologist, 38*: 1379‑1387.

Ilgen, D. R. 1986. Laboratory research: A question of when, not if. In E. A. Locke (Ed.), *Generalizing from laboratory to field settings: Research findings from industrial-organizational psychology, organizational behavior, and human resource management*, 257-267. Lexington, MA: Lexington Books.

**Oct 3 - Quasi-Experimental Designs**

When manipulation is not possible - Nonrandom assignment - Two group, post-test only - Nonequivalent control group - Cohort designs - Interrupted time series - Validity issues - Cross-lagged panel designs

Book Readings: \* C&C - Ch 3 (pp. 95-137)

\*C&C - Ch 5 (pp. 207-230)

\* P&S - Ch 13 (pp. 277-304)

**Oct 10 – Nonexperimental Designs, Measurement of Variables**

Rating scales - Interviews - Observation - Archival data – Surveys – Internet Survey Research

Book Readings: \*P&S - Ch 6 (pp. 118-146)

\*P&S – Ch 14 (pp. 304 – 317)

**Required Article Readings:**

Stanton, J. & Rogelberg, S. G. 2001. Using Internet/Intranet Web Pages to Collect Organizational Research Data. *Organizational Research Methods, 24*: 200-217.

**Supplemental Article Readings:**

Gosling, S. D., Vazire, S., Srivastava, S., & John, O. P. 2004. Should we trust web-based studies? A comparative analysis of six preconceptions about Internet questionnaires. *American Psychologist*, 59: 93-104.

Kraut, R., Olson, J., Banaji, M., Bruckman, A., Cohen, J., & Couper, M. 2004. [Psychological research online: Report of board of scientific affairs’ advisory group on the conduct of research on the Internet.](http://web.ebscohost.com/ehost/viewarticle?data=dGJyMPPp44rp2%2fdV0%2bnjisfk5Ie46bZMt6eyUbCk63nn5Kx95uXxjL6nrUm3pbBIrq2eSrimt1Kwr55oy5zyit%2fk8Xnh6ueH7N%2fiVa%2bmtVGwqK9LsqmkhN%2fk5VXj5KR84LPufOac8nnls79mpNfsVd%2fj7kWzr6tKq6euTaTc7Yrr1%2fJV5OvqhNLb9owA&hid=118) *American Psychologist*, 59: 105-117.

**Oct 17 – Levels of Analysis**

Nested effects - Levels of analysis - Aggregation issues - Analytical Approaches

**Required Article Readings:**

Klein, K. J., Dansereau, F., & Hall, R. J. 1994. Levels issues in theory development, data collection, and analysis. *Academy of Management Review, 19*: 195-229.

Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The Sources of Four Commonly Reported Cutoff Criteria : What Did They Really Say? *Organizational Research Methods, 9*: 202-220.

(Read pages 207-210, rwg section)

Rousseau, D. M. 1985. Issues of level in organizational research: Multilevel and cross-level perspectives. In L. L. Cummings & B. Staw (Eds.), *Research in organizational behavior* (Vol. 7, pp1-37). Greenwich, CT: JAI Press.

**Supplemental Article Readings:**

House, R. J., Rousseau, D. M., & Thomas-Hunt, M. 1995. The meso paradigm: A framework for the integration of micro and macro organizational behavior. In B. M. Staw & L. L. Cummings (Eds), *Research in organizational behavior*, Vol 17(pp. 71-114). Greenwich, CT: JAI Press

**Oct 24 - Drawing Inferences from Empirical Research – Article Critique**

Common Method Variance - Other Limitations - Reviewing other manuscripts - Reviewing the literature

**Required Article Readings:**

Brannick, M. T., Chan, D., Conway, J. M., Lance, C. E., & Spector, P. E. 2010. What is method variance and how can we cope with it? A panel discussion. *Organizational Research Methods, 13*: 407-420.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. 2003. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88: 879-903.

Jauch, L. R., & Wall, J. L. 1989. What they do when they get your manuscript: A survey of Academy of Management reviewer practices. *Academy of Management Journal, 32*: 157-173.

**Oct 31 - Publishing**

The Publication Process - Interpreting Previous Literature - Preparing your manuscript - Choosing an outlet (only one at a time) - Responding to reviews - Reacting to rejection

**Required Article Readings:**

Agarwal, R. 2006. Reap rewards: Maximizing benefits from reviewer comments. *Academy of Management Journal,* 49: 191–196.

Harrison, D. 2002. Obligations and obfuscations in the review process. *Academy of Management Journal,* 46: 1079–1084.

Ragins, B. R. 2012. Reflections on the art of clear writing. *Academy of Management Review*, 37: 493-501.

**Nov 7 - Exam in class**

**Nov 14 - Final Presentations**

**Nov 21 – Final Presentations**

Nov 28 - NO CLASS Thanksgiving Holiday