

**PSYC 644**  
**Methods for Social Research**  
**SPRING 2012**

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<b>Office Hours:</b>	Tues 10:30am-12:00pm and by appointment
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<b>Class Location:</b>	University Hall 1203
<b>Class Date/Time:</b>	Thurs 1:30pm-4:15pm
<b>Class website:</b>	<a href="http://mres.gmu.edu/PSYC644/">http://mres.gmu.edu/PSYC644/</a>

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## Course Overview

The purpose of this course is to fully immerse graduate students into the many issues surrounding basic and applied social science research methodology. Students will read a wide spectrum of articles from clinical, developmental, experimental, and social psychology that pertain to internal validity, causal generalization, and construct validity. These rudimentary areas require specific study to help students fully appreciate research design, data analysis, and manuscript preparation decisions - the core decisions that lie at the heart of psychological science.

## Course Requirements and Structure

Each student will be required to read assignments, attend class, contribute to the weekly discussions and participate in four intensive reviews throughout the semester. Readings consist of seminal articles from the research methodology literature that are relevant to each week's topic. By attending class and contributing to class discussion, students get the opportunity to understand the assigned readings and discuss the implications and limitations of each topic. Finally, the four intensive reviews - scheduled approximately every month - serve to reinforce the topics discussed to date and provide more opportunities for students to master the material. These reviews require students to review existing manuscripts from disparate fields and to write a review of the methodological approach used in the manuscript. Each manuscript will be reviewed by multiple reviewers and discussed at length after submission.

## Grading

All grades will be based upon student participation in both weekly class discussions as well as in written assignments due for the four intensive reviews.

## Academic Honesty

I must state for the record that cheating of any kind will be dealt with by rules set forth in the University Honor Code (see <http://www.gmu.edu/catalog/apolicies/index.html>). I prefer never to have any academic integrity problems arise during the semester. The aim of graduate education is to learn material that many others have not learned and master this material to ensure your future success. The degree you receive reflects the hard work you put into your courses. Please do not cheat yourself by misrepresenting your effort. Do the work or accept

the consequences. Spend your effort learning the material and avoid being overly grade conscious. With a concerted effort to learn, you will not be tempted to cheat. Please note that academic dishonesty is not akin to studying with your classmates. I strongly encourage you to study together, exchange notes, and offer each other constructive feedback about module preparation. My course is designed to eliminate any possibility of dishonesty. The only avenues to cheat yourself is by plagiarizing your critique. Your advisor will alert me should that become an issue. So, let me repeat myself. Please study with one another. I demand it.

## Disability Accommodations

If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Center (DRC) at 703-993-2474. All academic accommodations must be arranged through that office.

## Topics

Below are a list of selected topics with a sample of relevant readings. Note that there are fewer topics than weeks in a semester due to the time requirements for the four intensive reviews.

- General Design** - all methods of research design including experimental, quasi-experimental, and non-experimental design along with the various threats to internal and external validity started with this seminal monograph - we will start there as well.
  - Campbell and Stanley (1966) *Experimental and Quasi-Experimental Design for Research* - the whole book.
- Philosophy of Science** - topics relevant to the logic of inquiry and causal inference.
  - Chamberlin, T.C. (1965). The method of multiple working hypotheses. *Science*, 148, 754-759.
  - Gholson, B. & Barker, P. (1985). Kuhn, Lakatos, and Laudan: applications in the history of physics and psychology. *American Psychologist*, 40, 755-769.
  - Meehl, P. E., & Scriven, M. J. (1956). Compatibility of science and ESP. *Science*, 123, 14-15.
  - Meehl, P.E. (1997) The problem is epistemology, not statistics: Replace significance tests by confidence intervals and quantify accuracy of risky numerical pre-

- dictions. In L. L. Harlow, S. A. Mulaik, & J.H. Steiger (Eds.) What if there were no significance tests? (pp. 393-425). Mahwah, NJ: Erlbaum.
- **Randomization and Experimental Design** the readings below represent a wide assortment from the literature pertaining to random assignment and its role in countering many threats to internal validity.
    - Dehue, T. (1997). Deception, efficiency, and random groups: Psychology and the gradual origination of the random group design, *Isis*, 653-673.
    - Hsu, L. (1989). Random sampling, randomization, and equivalence of contrasted groups in psychotherapy outcome research, *Journal of Consulting and Clinical Psychology* 57(1), 131.
    - Meehl, P. (1967). Theory-testing in psychology and physics: A methodological paradox, *Philosophy of Science* 34(2), 103-115.
    - Rodgers, J. (1999). The bootstrap, the jackknife, and the randomization test: A sampling taxonomy, *Multivariate Behavioral Research* 34(4), 441-456.
    - Rubin, D. (1978). Bayesian inference for causal effects: The role of randomization, *The Annals of Statistics* 6(1), 34-58.
    - Rubin, D. (1974). Estimating causal effects of treatments in randomized and nonrandomized studies, *Journal of Educational Psychology* 66(5), 688-701.
    - Shadish, W. & Ragsdale, K. (1996). Random versus nonrandom assignment in controlled experiments: Do you get the same answer?, *Journal of Consulting and Clinical Psychology* 64(6), 1290-1305.
  - **Sampling** - this topic focuses primarily on the selection of experimental units and how sampling affects causal generalization.
    - Berk, R. (1983). An introduction to sample selection bias in sociological data, *American Sociological Review*, 48(3), 386-398.
    - Blankertz, L. (1998). The value and practicality of deliberate sampling for heterogeneity: A critical multiplist perspective, *American Journal of Evaluation* 19(3), 307.
    - Cook, T. & Shadish, W. (1994). Social experiments: Some developments over the past fifteen years, *Annual Review of Psychology* 45.
    - Shadish, W. (1995). The logic of generalization: Five principles common to experiments and ethnographies, *American Journal of Community Psychology*, 23(3), 419-428.
    - Wright, D. (2006). Causal and associative hypotheses in psychology, *Psychology, Public Policy, and Law*. 12(2), 190-213.
  - **Measurement, variables and hypothesis testing** - topics included during this week are relevant to variable selection and hypothesis testing.
    - Meehl, P.E. (1978). Theoretical risks and tabular asterisks: Sir Karl, Sir Ronald, and the slow progress of soft psychology. *Journal of Consulting and Clinical Psychology*, 46, 806-834.
    - Kaufman, J.S., Cooper, R.S., & McGee, D.L. (1997). Socioeconomic status and health in blacks and whites: The problem of residual confounding and the resiliency of race. *Epidemiology* (8), 6, 621-628.
    - Kaplan, R.M. (1990). Behavior as the central outcome in health care. *American Psychologist* (45), 11, 1211-1220.
    - Sechrest, L. (undated). Why I do not like sex (as a variable, that is). Unpublished.
  - **Quasi-Experimentation** when randomization fails us, we must still press on. These articles address the problems of non-equivalent group designs and how we might consider analyzing them.
    - Bobrow et al. (2008). Minimally Interrupted Cardiac Resuscitation by Emergency Medical Services for Out-of-Hospital Cardiac Arrest. *JAMA*, 299, 1158-1165.
    - Grossman, J., and Tierney, J.P. (1993). The fallibility of comparison groups. *Evaluation Review*, 17, 556-571.
    - Miller, G.A. & Chapman, J.P. (2001). Misunderstanding analysis of covariance. *Journal of Abnormal Psychology*, 110, 40-48.
  - **Causal Generalization and Construct Validity** - these two topics are very broad but essential for scientists to understand.
    - Mook, D.G. (1983). In defense of external validity. *American Psychologist*, 38, 379-387
    - Borsbom, D., Mellenberg, G.J., & van Heerden, J. (2004). The concept of validity. *Psychological Review*, 111, 1061-1071.
    - Sechrest, L (2005). Validity of measures is no simple matter. *Health Services Research*, 40, 1584-1604.
    - Campbell, D.T., & Fiske, D.W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56, 81-105.
    - Schmidt, F.L., Gast-Rosenberg, I., and Hunter, J.E. (1980). Validity generalization for computer programmers. *Journal of Applied Psychology*, 63, 643-661.
    - Schmidt, F.L. (1992). What do the data really mean? Research findings, meta-analysis, and cumulative knowledge in psychology. *American Psychologist*, 47, 1173-1181.
    - Schmidt, F.L. (2010). Detecting and correcting the lies that data tells. *Perspectives on Psychological Science*, 5, 233-242.
  - **Causal Inference** - the root of scientific inquiry is causal inference and these articles address the many facets of both philosophical causality as well as experimental causality.

- Einhorn, H.J. & Hogarth, R.M. (1986). Judging probable cause. *Psychological Bulletin*, 99(1), 3-19
- Besharov, D.J. & Germanis, P. (1999). Is WIC as good as they say? *Public Interest*, 134, 21-36.
- Edelman, E.R. (2001). On causes: Hippocrates, Aristotle, Robert Koch, and the Dread Pirate Roberts. *Circulation*, 104, 2509-2512.
- Diamond, J. (1989). How cats survive falls from New York skyscrapers. *Natural History*, (8), 20-26.
- Scriven, M. (1971). The logic of cause. *Theory and Decision*, 2, 49-66.
- **Causal Analysis** - we must analyze data to draw valid causal inferences. These papers address several approaches to reasonable inferential methods.
  - Waller, N. G., & Meehl, P. E. (2002) Risky tests, verisimilitude, and path analysis. *Psychological Methods*, 7, 323-337.
  - Sechrest, L. (1985). Social science and social policy: Will our numbers ever be good enough? In L. Shotland and M. Mark (Eds). *Social science and public policy*. New York: 1985, 63-95.
  - Petticrew et al. (2005). Natural experiments: An underused tool for public health? *Public Health*, 119, 751-757.
  - Platt, J.R. (1964). Strong inference: Certain systematic methods of scientific thinking may produce much more rapid progress than others. *Science*, 146, 347-353.
  - O'Donohue, W. & Buchanan, J.A. (2001). The weaknesses of strong inference. *Behavior and Philosophy*, 29, 1-20.

## Additional Readings

Throughout the semester, I will post additional readings on the course website (see URL in the header). These readings include the articles you will review as part of your course grade. Please consult the course website every week for updates. I usually send out an email message alerting students to updates to the website but there are times when I simply forget to warn you. As a general rule, assume I will not alert you and, to avoid missing a reading, go to the course website every Sunday to check for readings. If you visit the website early enough in the week, you will be easily able to read the additional material.