DEA 6560 RESEARCH METHODS IN THE SOCIAL SCIENCES

Fall 2023 — Academic Surge A, Room 109: T/Th 11:40 am-12:55 pm
Professor: Nancy M. Wells (nmw2) — NW Office Hrs: MVR 1300F Tu 4:30-5:30 pm
Teaching Assistant: Heather Kim (jk2768) — HK Office Hours: MVR 2411 Tu 2:30-3:30 pm

DEA 6560 provides a foundation in research methodology. You will learn the terminology, logic, and procedure for conducting research. By the end of the semester you will be equipped with the skills to design, conduct, report, and critically evaluate research studies. The class begins at a fundamental level (e.g. what is an independent variable? where do I find a hypothesis?) and progresses to advanced topics. Course content includes problem statements and hypotheses; mediators vs. moderators; variable types; true experiments, case studies and quasi-experimental research design; measurement of scale reliability and validity; threats to validity; ordinal and interval scaling methods; questionnaire construction and interviewing; and observation and other non-reactive techniques. Completion of this course and diligence in doing the considerable amount of assigned work will furnish you with the confidence and know-how to embark on formal social science research.

Learning objectives and assessment.

- Think critically. (e.g., demonstrate ability to design + critique research studies, identify threats to validity, and assess causal conclusions) *[Assessed through problem sets, exams, and projects]*
- Write and speak effectively. *[Assessed primarily through projects 1 + 2]*
- Work effectively with others. *[Assessed through in-class and online collaboration opportunities]*
- Display commitment to ethical principles. *[Completion of IRB training and plagiarism tutorial; ethical behavior throughout course]*

READINGS (syllabus codes):

(S) Shadish, W.R., Cook, D.T. & Campbell, D.T. (2002) *Experimental & Quasi-Experimental Designs for Generalized Causal Inference*. Boston: Houghton-Mifflin. [Available at Campus Store]
(K) Kerlinger, F. & Lee, H. (2000). *Foundations of behavioral research*, 4th ed. New York: Harcourt. Buy online; out of print; also will be on Reserve at Mann Library + in DEA grad lab – to share.
(C) Readings posted on CANVAS: https://canvas.cornell.edu
(HO) Handouts, CANVAS course documents: https://canvas.cornell.edu
(⌘) Online
(O) Optional. These are *optional* readings and are not on reserve; not on Canvas.

MECHANICS

Please type all work, double spaced, and hand in on time. Put your name only at the end of assignments.

Assignment	Due Date	Points
Problem Sets (turn in at least 10 of 12)	Wednesdays 4:00 pm	50
Human Participants Research (IRB) Training	F 9/1 12:00 noon	20
Plagiarism tutorial and one-paragraph reaction	F 9/8 12:00 noon	10
PRELIM EXAM #1 (Outline 1)	M 9/18 7:30pm	60
PROJECT 1: True Experiment		
1A. *Introduction & Methods*	F 10/6 12:00 noon	65
Poster Session (in-class presentation of Project 1A+B)	T 10/24 11:25am	20
1B. *Results, Discussion & Abstract*	F 10/27 12:00 noon	75
SYNTHESIS DAY – details to follow	Th 10/17	--
MYSTERY DAY – details to follow	Th 10/31	--
PRELIM EXAM #2 (Outlines 1 2 3)	M 11/6 7:30pm	75
PROJECT 2: Instrument Development		
2A. Questionnaire Instrument	M 11/17 12:00 noon	75
2B. *Observational instrument* to validate questionnaire	W 12/6 12:00 noon	50
FINAL EXAMINATION (take home) (Outlines 1 2 3 4) *[ready for pick-up on Friday 12/8, 3:00pm]*	F 12/15 12:00 noon	100
Maximum Points		**600**

* Late assignments will not be accepted. *

NOTE: DEA Graduate students must earn at least a B- in the course, or will be required to take it again.

SECTION. In addition to 2 classes / week, there is weekly section beginning Week 3, focused on problem sets.

FLIPPING. Significant portions of this course will be "flipped". This means that we will provide recorded lectures and/or online videos for you to view at home (***please*** take notes), allowing more time for hands-on practice applying concepts during class time. It is **essential** that lectures and videos assigned for at-home are completed on time. Failure to complete these materials will severely impair your capacity to function in class and to learn course content.

OUTLINES. (1-4) are provided on Canvas and will, along with the syllabus, to help you navigate course content.

REQUIREMENTS

Problem sets (PS's). There are 12 PS's. Mastering the problem sets, keeping up, and attending class and weekly sections, are the best strategies for success. You may work collaboratively on the problem sets; however, it is critical that you, individually, comprehend the material. **We strongly discourage use of Chat GPT on PS's.** PS's will not be "graded" rigorously or in great detail (points are assigned based on effort and completeness as well as correctness, i.e. √-=3pts, √=4pts, √+=5pts) but doing them conscientiously will prepare you for the exams. Correct answers as well as common errors will be discussed in weekly section. **Problem sets will be available on Canvas by Friday** (https://canvas.cornell.edu) and are **due the following Wednesday by 4:00 pm**. Please have a copy of your problem set in front of you during section. You must turn in *at least* 10 of the 12 problem sets. **Hand in via Canvas.** See your TA for assistance.

Human Participants Research Training. The Institutional Review Board (IRB) "IRB-Basic" CITI Training Course is a requirement for this class. The *training takes ~ 3 hours to complete*, so plan accordingly. Go to. https://researchservices.cornell.edu/resources/irb-training Please download the result of the training and submit it via Canvas by the due date (see page 1). You will not be graded based on your score – you will receive points for completing and passing the training. If you have completed the training already for a previous class or project, please login to the IRB website to download a "completion report." Then submit that report via Canvas.

Plagiarism Tutorial. If you use words or ideas that are not your own, it is essential that you cite the source of the material. If you do not do so, you are plagiarizing, a violation of the code of academic integrity (see http://cuinfo.cornell.edu/aic.cfm). To help clarify what does and does not constitute plagiarism and to alert you to some of the subtleties of proper citation protocol, I would like you to complete a plagiarism tutorial available through the College of Arts and Science here: http://plagiarism.arts.cornell.edu/tutorial/. After completing the tutorial, please write a 1-paragraph reaction. Was the tutorial helpful? What was challenging? What questions do you still have? Give examples of what you learned. Please submit your reaction via Canvas.

Project 1A & B: Project 1, detailed in Handout 3, must be a true experimental design. You will turn in this assignment in two parts first: (A) Introduction and Methods; then: (B) Results, Discussion, Abstract. Please submit this assignment as a Word document (not PDF) via Canvas. [Poster / poster session is also part of Project 1].

Project 2A & B. Project 2A is to develop, test and assess an instrument (scale). The instrument needs to employ one or more scaling techniques and include reliability information. Project 2B involves describing an observational measurement to validate the (2A) instrument (Handout 9). Please submit as Word document via Canvas.

CHAT GPT: If you choose to use Chat GPT for Project 1 or 2, you must include Chat GPT as an author and include an author contribution statement. We'll discuss this further in class.

OTHER RECOMMENDED READINGS:

1. Devlin, A.S. (2005). *Research Methods: Planning, conducting and presenting research*. Belmont, CA: Thomson Wadsworth. This is a student-oriented book dealing with topics ranging from developing your research question, research design, obtaining subjects, and managing data. This book might be helpful for Project #1, and theses.

2. Zerubavel, E. (1999). *The Clockwork Muse: A Practical Guide to Writing Theses, Dissertations, and Books.* Cambridge, MA: Harvard U. Press. Offers practical advice related to organizing your document and writing time.

SCHEDULE

Important: Most lectures are "*flipped*" – i.e., provided for you to view + take notes (on Canvas) *prior to* each class. It is essential that you view lectures and read assignments prior to class; they will prepare you for class activities and discussion. On Canvas, you will find readings as well as lectures, videos, etc. under "**Modules,**" organized by "Day."

WEEK 1 (Day 1 + 2)

Note: No problem set due Week 1 and no discussion section

Logical Foundation of Scientific Analysis [& Introduction to Flipping] *(Outline 1)*

8/22 Lecture 1 + online videos found on Canvas
- (K) Chapter 1, Science and the scientific approach.
- (HO1) The art and logic of problem solving.
- (C) Platt, J. (1964). Strong inference. *Science*, 146, 347-352.
- (C) Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory*. Chicago: Aldine. Chapter 1, The discovery of grounded theory.

8/24 Lecture 2
- (K) Chapter 2, Problems and hypotheses.
- (K) Chapter 3, Constructs, variables, and definitions.
- (HO2) Problems and hypotheses.
- (C) Loehle, C. (1990). A guide to increased creativity in research – inspiration or perspiration? *BioScience*, 40 (2), 123-129.
- (O) Kammen, C. (2012) 150 years ago, the Morrill Land Grant Act paved the way for Cornell. *Cornell Alumni Magazine*, Sept / October 2012. http://cornellalumnimagazine.com/index.php?option=com_content&task=view&id=1459

WEEK 2 (Days 3 + 4)

Notes: No problem set due Week 2 + no discussion section.
Problem set #1 available Friday this week, and due Wed, next week

8/29 Lectures 3A + 3B
- (HO3) **Project 1 description** and Manual of style for Social Science Reports
- (C) White, L. (2005). Writes of Passage: Writing an empirical journal article. *J. of Marriage and Family, 67*, 791-798.
- (K) Chapter 6, Variance and covariance.

8/31 Lecture 4A
- (K) Chapter 8, excerpt "randomization", pp.169-171.
- (C) Kuo, F.E. (2002). Bridging the gap: How scientists can make a difference. In R.B. Bechtel and A. Churchman (Eds.) *Handbook of Environmental Psychology,* NY: Wiley, pp. 335-346. [Read excerpt 339-345].
- (HO4) Outline for understanding research articles.
- (HO5) Research Design: Factorial/nested; moderator/mediator, (pp. 1-6).
- (O) Baron, R.M. & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical consideration. *Journal of Personality and Social Psychology, 51*, 1173-1182.
- (O) Bauman, A. E., Sallis, J.F., Dzewaltowski, D.A., and Owen, N. (2002). Toward a better understanding of determinants, correlates, causal variables, mediators, moderators, and confounders. *American Journal of Preventive Medicine, 23* (2S), 5-14.
- (O) Kraemer, H.C., Stice, E., Kazdin, A., Offord, D. & Kupfer, D. (2001). How do risk factors work together? Mediators, moderators and independent, overlapping, and proxy risk factors. *Am. J. Psychiatry, 158* (6.

9/1 HUMAN SUBJECTS TRAINING VERIFICATION DUE Friday 9/1 12:00 noon via Canvas

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WEEK 3 (Days 5 + 6)

Note: First problem set due this week – Wednesday 4:00 pm

9/5 Lecture 4B
- (HO5) Research Design: Factorial/nested; moderator/mediator, (pp. 6-9).
- (K) Chapter 18, Research design: Purpose and principles.
- (K) Chapter 20, General designs of research.
- (C) Kimble, G.A. (1978). *How to use (and misuse) statistics.* Englewood Cliffs, NJ: Prentice-Hall. Main effects and interactions, pp. 70-77.

(O) Fairchild, AJ & McDaniel, HL (2017) Best (but oft-forgotten) practices: mediation analysis. *The American Journal of Clinical Nutrition, 105* (6), 1259-1271.

9/7 Lecture 5
(K) Chapter 21, Research design applications. (pp. 502-511)
(K) Chapter 23, Non-experimental research.
(C) McDonnell JJ (2016). The 1-hour workday. *Science, 353* (6300), p. 718.
(O) Groat, L. & Wang, D. (2001). *Architectural research methods.* New York: Wiley. Ch 3, Literature Review, excerpt pp. 45-71.

9/8 PLAGIARISM TUTORIAL 1-PARAGRAPH REACTION DUE Friday 9/8 12:00 noon via Canvas

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Research Design *(Outline 2)*

WEEK 4 (Days 7 + 8)

9/12 Lecture 6A
(K) Chapter 21, Research design applications. (pp. 511-531)
(K) Chapter 19, Inadequate designs and design criteria.
(C) Groat, L. & Wang, D. (2001). *Architectural research methods.* New York: Wiley. Ch 12, Case studies and combined strategies, pp. 341-373.
(S) Chapter 2, Statistical conclusion validity and internal validity, pp. 53-62.

9/14 Lectures 6B + 6C
(S) Chapter 4, Quasi-Experimental designs that …lack a control or lack pretest…pp. 106-111.
(C) Yin, R.K. (1994). *Case study research*, 2nd ed. Los Angeles: Sage. Ch 2, Designing case studies.
(C) Steckler & McLeroy (2008). The importance of external validity. *Am. J. of Public Hlth, 98* (1), 9-10.
(C) Salganik, MJ (2018). *Bit by Bit: Social research in the digital age.* Princeton University Press. Princeton, NJ. Chapter 4: Running Experiments. Excerpt pp. 147-157.
(O) Groat, L. & Wang, D. (2001). *Architectural research methods.* New York: Wiley. Chapter 7, Qualitative research, pp. 173–202 and Chapter 8, Correlational research, pp. 203-247.
(O) Creswell, J.W. (1994). *Research Design: Qualitative & Quantitative Approaches.* Thousand Oaks, CA: Sage Publications Ch 9, A Qualitative Procedure; Ch 10, Combined Qualitative & Quantitative Designs.
(O) Strauss, A.L. (1987). *Qualitative Analysis for Social Scientists.* New York: Cambridge University Press. Ch 1

WEEK 5 (Days 9 + 10)

9/18 PRELIM EXAM #1 Monday 9/18 evening 7:30pm. (Location TBA) Outline #1

9/19 Lecture 7A
(K) Chapter 22, Quasi-Experimental and N=1 Designs of Research
(S) Chapter 2, Statistical conclusion validity and internal validity, pp. 33-52, pp. 83-92.
(S) Chapter 5, Quasi-experimental design that use both control groups and pretests, pp. 136-161.
(HO6) Independence.

9/21 Lectures 7B + 7C
(C) Judd, C. & Kenny, D. (1981). *Estimating the effects of social interventions.* New York: Cambridge. Chapter 3, Validity in social research.
(S) Chapter 4, Quasi-experimental designs that either lack a control group or… pp. 111-115.

WEEK 6 (Days 11 + 12)

9/26 Lectures 7D + 7E
(S) Chapter 7, Regression Discontinuity Designs, pp. 207-216, pp. 229-233.
(C) Thistlethwaite, D.L. & Campbell, D.T. (1960). Regression-discontinuity analysis: An alternative to the ex post facto experiment. *The Journal of Educational Psychology, 51* (6), 309-317.
(HO7) Interpretable, nonequivalent control group designs.

Principles of Measurement *(Outline 3)*

9/28 Lecture 8A
(K) Chapter 26, Foundations of Measurement.
(K) Chapter 27, Reliability.
(O) Groat, L. & Wang, D. (2001). *Architectural research methods.* New York: Wiley. Ch 2, Systems of inquiry and standards of research quality, excerpt pp. 34-40.

WEEK 7 (Days 13 + 14)

10/3 Lecture 8B
(K) Chapter 28, Validity.
(HO8) Validation using a multitrait-multimethod matrix.

10/5 Lectures 9A and 9C [Lecture 9B will be delivered in class]
(S) Chapter 3, Construct validity and external validity, pp. 64-72.
(C) Webb, E.T., Campbell, D.T., Schwartz, R. Sechrest, L. & Grove, J. (1981). *Nonreactive measures in the social sciences, 2nd ed.* Boston: Houghton-Mifflin. Chapter 3, Approximations to knowledge, pp. 4-33.
(S) Chapter 2, Statistical conclusion validity and internal validity pp. 63
(S) Chapter 3, Construct validity and external validity, pp. 72-81, pp. 93-102

10/6 PROJECT 1, PART A (Introduction & Methods) DUE Friday 10/6 12:00 noon via Canvas

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WEEK 8 (Day 15)

10/10 No class: **FALL BREAK** (Saturday 10/7 – Tuesday 10/10)

***Scaling** (Outline 4)*

10/12 Lecture 10A
(HO9) **Project 2**: Description
(HO10) Measurement scales and statistics
(C) Ghiselli E. Campbell, J. & Zedeck, S. (1981). *Measurement theory for the behavioral sciences.* San Francisco: Freeman. Ch. 12, Basic concepts in psychological scaling, pp. 391-420 (pp. 398-408 optional).

WEEK 9 (Days 16 + 17)

10/17 SYNTHESIS DAY: REVIEW / REFLECTION Thursday 10/17 (more details to come)

10/19 Lecture 10B
(C) Nunnally, J. (1978). *Psychometric theory, 2nd ed.* New York: McGraw Hill. Chapter 15, Measurement of sentiments, pp. 588-626.
(K) (O) Chapter 30, Objective tests and scales (optional).

WEEK 10 (Days 18 + 19)

Note: No problem set due Week 10; no discussion section.

10/24 POSTER SESSION Tuesday 10/24 in class [more details to come]

10/26 Lecture 10C
(C) Fishbein, M. & Ajzen, I. (1975). *Belief, attitude, intention, and behavior.* Reading, MA: Addison-Wesley. Chapter 3, Measurement techniques, pp. 53-106.
(O) Bradburn, N. M., Sudman, S., & Wansink, B. (2004). *Asking Questions: The Definitive Guide to Questionnaire Design -- For Market Research, Political Polls, and Social and Health Questionnaires* (Revised Edition). San Francisco: Jossey-Bass.

10/27 PROJECT 1, PART B (Results, Discussion & Abstract) DUE Friday 10/27 12:00 noon via Canvas

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WEEK 11 (Days 20 + 21)

10/31 MYSTERY DAY Tuesday 10/31 (more details to come)

***Questionnaire and Interview Construction** (Outline 4 con't)*

11/2 Lecture 10D
(K) Chapter 25, Survey research

WEEK 12 (Days 22 + 23)

11/6 PRELIM EXAM #2 Monday 11/6 evening 7:30pm Outlines #1 2 3 *[location TBA]*

11/7 Lecture 10E
- (C) Judd, C., Smith, E. & Kidder, L. (1991). *Research methods in social relations*. NY: Holt, Reinhart & Winston. Chapter 11, Questionnaires and interviews, pp. 229-253.
- (C) Warwick, D. & Lininger, C. (1975). *The sample survey.* NY: McGraw-Hill. Chapter 6, questionnaire design, pp. 126-181.

11/9 Lecture 11
- (K) Chapter 29, Interviews and interview schedules.
- (C) Schober, M.F., Conrad, F.G., Antoun, C., *et al* (2015). Precision and disclosure in text and voice interviews on smartphones *PLoS one, 10(6)* DOI: 10.1371/journal.pone.0128337
- (C) Judd, Smith & Kidder (1991). pp. 253-264.
- (O) Dillman, D. (1978). *Mail and telephone surveys.* NY: Wiley. Chapter 2, Which is best: The advantages and disadvantages of mail, telephone, and face to face surveys, pp. 39-78.

WEEK 13 (Days 24 + 25)

***Observation and Other Nonreactive Techniques* (Outline 4 con't)**

11/14 Lecture 12
- (K) Chapter 31, Observations of behavior and sociometry.
- (C) Zeisel, J. (1981). *Inquiry by design*. Monterey, CA: Brooks/Cole. Chapter 8, Observing environmental behavior, pp. 111-136.

11/16 Lecture 13A
- (C) Salganik, MJ (2018). *Bit by Bit: Social research in the digital age.* Princeton University Press. Princeton, NJ. Chapter 2: Observing Behavior. Excerpt pp. 13-41.
- (C) Weick, K. (1968). Systematic observational methods. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology, 2nd ed.* (pp. 357-451). Reading, MA.: Addison-Wesley

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11/17 PROJECT 2A DUE Friday 11/17 12:00 noon via Canvas

WEEK 14 (Day 26)

Note: No problem set due Week 14

11/21 Lecture 13B
- (C) Bakeman, R. & Gottman, J. (1986). *Observing interaction.* New York: Cambridge University Press. Chapter 2, Developing a code scheme, pp. 19-47.
- (HO11) Observer reliability.
- (C) Zeisel, J. (1981). *Inquiry by design*. Monterey, CA: Brooks/Cole. Chapter 8, Observing environmental behavior, pp. 111-136.

11/23 **No Class: THANKSGIVING RECESS** (Wednesday 11/22 – Sunday 11/26)

WEEK 15 (Days 27 + 28)

11/28 Lecture 13C
- (C) Zeisel (1981). Chapter 7, Observing physical traces, pp. 89-110.
- (C) Zeisel (1981). Chapter 12, Archives, pp. 197-225.

11/30 WRAP-UP + REVIEW (Last Class)

12/6 PROJECT 2B DUE Wednesday 12/6 12:00 noon via Canvas

Note: LAST problem set (#12) due Wednesday 12/6

12/15 FINAL EXAMINATION (TAKE HOME) – ready for you to pick up on Friday 12/8 3:00 pm
DUE Friday 12/15 12:00 noon (Outlines #1 2 3 4)
