ENV 407 – Research for Master Thesis

WEEKLY READING SCHEDULE – Winter 2019

Readings and other material assigned for class each day is listed here by week with complete citations for each item. You should read/watch these materials before the class day for which they are listed. Readings for each week are listed in a suggested reading order.

This printed list is provided as a convenience only. Please refer to D2L during the quarter for up-to-date information, deadlines, etc., and email me with any questions.

Reminder: Each week there is a 300-600 word typed reading response due. Please turn in a paper copy at the end of each class.

“Consider for next week” thoughts: At the end of each list of readings is a short list of questions or tasks to consider for the following week. These are not assignments per-se in that I will never collect or grade or check your completion of the tasks, but rather are meant to be things to ponder or do that will keep you on track for the class and help you complete the couple major assignments for this course (Assignments 1 & 2, and the Research Proposal).

“Additional resources and handouts” list: Includes any handouts posted to D2L and/or handed out during class. These are more for your perusal and reference later, though occasionally, I will instruct you to review something in greater detail in advance of class.

WEEK 1 – Course & M.S. thesis overview, Organizing large research projects, The process of transdisciplinary research in the sustainability & environmental sciences


Additional resources and handouts:

“M.S. Thesis Requirements – DePaul University – Environmental Science” (draft; last updated January 8, 2019)
Handouts from Jess’ research lab, LUFA, the Lab for Urban Forestry in the Anthropocene:

****Consider for next week:
- Set up the organized set of folders for your thesis research in Box (or your preferred cloud-based – and therefore backed-up – file storage service of choice, though Box is free and unlimited as a DePaul student, and Google Drive is highly discouraged). This does not have to be immutable; you may find it valuable to add folders or sub-folders as you go along. But set up as much as you can now and you’ll find it easier to stay organized through your thesis.
- Write down some preliminary answers to the set of reflection questions for Week 1 (passed out at the end of class) in order to begin situating yourself as a researcher in the field. Your notes on these questions will help you write your Researcher Orientation essay (Assignment #1).
- Prepare the summary and assessment of your assigned systematic literature review example article (see Week 2 reading list).

WEEK 2 – Reading the scientific literature, Conducting a literature review


Gaziulusoy, A.I., & Boyle, C. (2013). Proposing a heuristic reflexive tool for reviewing literature in transdisciplinary research for sustainability. Journal of Cleaner Production, 48, pp.139-147. [Builds on the transdisciplinary readings from Week 1 and proposes a specific methodology for the special transdisciplinary research challenge that is reviewing literature spanning multiple disciplines.]

Examples of systematic literature reviews – Each student + instructor will be assigned 1 of the following to read and summarize/appraise/evaluate for the class:


Additional resources and handouts:


Vogt, J. (2018). “LUFA manuscript disclaimers & author credit procedures.” Handout. [See also the CRediT website: https://casrai.org/credit/.]

Cornell University Library. (2018, Nov 27) A guide to conducting systematic reviews. Retrieved from http://guides.library.cornell.edu/systematic_reviews [An excellent reference guide for how to conduct systematic literature reviews. Be sure to click through all of the various pages contained within the guide for information on how to get started, the basic steps in a systematic review, documenting your methodology, searching the published and “grey” literature, and managing the entire process in an organized fashion.]

Ottawa Hospital Research Institute, & University of Oxford. (2015). PRISMA: the Preferred Reporting Items for Systematic Reviews and Meta-Analyses. Retrieved from: http://www.prisma-statement.org [One of the reporting databases that catalogues in-progress and published systematic literature reviews that have been reported to PRISMA and conducted according to their best practices guidelines.]

UK NHS National Institute for Health Research, & University of York Centre for Reviews and Dissemination. (n.d). PROSPERO: International prospective register of systematic reviews. Retrieved from: https://www.crd.york.ac.uk/prospero/ [Another registry of systematic reviews; registering your review with PROSPERO helps insure you don’t get scooped by someone else doing the same or a very similar review.]

****Consider for next week:

- Think about and take some notes on the reflective questions for Week 2 (passed out at the end of class), particularly in the context of the Gaziulusoy & Boyle (2013) literature review article. These notes will help you craft your Researcher Orientation essay (Assignment #1).
- To prepare for conducting your own systematic literature review for your thesis research (and Research Proposal for this class), begin drafting a step-by-step literature search strategy, based on the suggestions from the Cornell University Library (2018) and Siddaway et al. (2019). (Some considerations for this are described in the Week 2 reflective questions.)

**WEEK 3 – Perspectives on science in society, Scientific explanation, Causation & causal reasoning**

except pay special attention to fn. 14, 16, 18, 22, & 25. And try not to get too irritated at the author’s consistent and antiquated use of the male pronoun for “scientist.”


Stinchcombe, A.L. (1968). The logic of scientific inference: Fundamental forms of scientific inference. pp.15–28 in: *Constructing Social Theories*, The University of Chicago Press, Chicago, IL. [Note that the PDF on D2L has the entire chapter, for your reference, but I’m only asking you to read pages 15-28 of the 38 page chapter. Another classic about the role of inference and causality in science from the social sciences. This piece describes how we use science to know things, with lots of simple examples. A relatively quick read if you’re familiar with logic and probability notation (or you skip/skim the logic notation). Again, excuse the prolific use of male pronouns for “scientist.”]


Additional resources and handouts:

Alliance of World Scientists website, which hosts the Ripple et al. (2018) “second notice”: http://scientistswarning.forestry.oregonstate.edu


***Consider for next week:

- Think and take some notes on the reflective questions for Week 3 (passed out at the end of class), particularly in the context of what you think the role of science (and scientists) in society is or should be. Consider these questions with respect to the environmental and sustainability sciences but also, more specifically, your own sub-field.
- Think particularly about causation and scientific inference: For your thesis research, which you’ll begin formalizing a proposal for in the coming weeks, how will causation and scientific inference be treated? That is, will you attempt to establish causation between one or more constructs as part of your research? If so, how? If not, why not?
- Your Researcher Orientation essay (Assignment 1) is due next week (Week 4) in class. Given all we’ve thought about related to the process and role of scientific research and of researchers these first three weeks, respond to the reflective prompt posed (“Who am I as a researcher?”).

**WEEK 4 – Research design, part 1: Experiments, Quasi-experiments, Natural experiments**


***Consider for next week:

- Think and take some notes on the reflective questions for Week 4 (passed out at the end of class).
- If you haven’t already, start thinking (and talking with your thesis advisor) about what the research design for your thesis will be. Will it be an experimental design? If so, which of the designs from Bernard (2011) will your thesis research design most closely approximate?
- Before reading next week’s research on case studies and comparative methods, consider: How would you define a “case study” or case study research? Jot down your definition and compare with that of Gerring (2004).
**WEEK 5 – Research design, part 2: Case studies, Field studies, The comparative method**

Gerring, J. (2004). What Is a Case Study and What Is It Good for? *American Political Science Review*, 98: 341–354. doi:10.1017/S0003055404001182 [Illuminates method and philosophy of conducting case study research; originally written for political science researchers but could apply to any other field which utilizes cases, particularly interdisciplinary fields or fields that use mixed methods.]

Lijphart, A. (1975). The comparable-cases strategy in comparative research. *Comparative Political Studies*, 8(2): 158–177. [Also from the political science discipline; the first couple pages mention critiques to a previous article the author wrote – you can skim this part and start paying closer attention to the text when he starts providing definitions of comparative research on p. 160 onward. Excuse some of the dated language and male-gendered pronouns.]


****Consider for next week:

- Think and take some notes on the reflective questions for Week 5 passed out at the end of class.
- Start compiling your notes and thoughts on research design and causation in preparation for the Research Design and Causation paper (Assignment 2; see Syllabus and D2L for complete prompt).
WEEK 6 – Methods selection, Measurement, Evaluation of research


WEEKS 7-9 – Research Proposal Work Time
There will be no formal in-class meetings during Weeks 7, 8, or 9 of the quarter. Instead, you should schedule weekly meetings with your Thesis Advisor, and use the time to complete your Research Portfolio. You may also meet with the ENV 407 instructor as needed.

WEEK 10 – Research Proposal presentations
These may take place at a time and place other than our normal class meeting in order to accommodate other ENV professors who desire to attend. We’ll schedule this ASAP and I will let you know.

FINALS WEEK – Course wrap-up
Scheduled finals period is Wednesday, March 20, 11:30am-1:45pm. We may not need have a meeting during this time, but we may need to wrap up some final course details, so put it on your schedule just in case.