

RES 502 - 202 (3.0 credits)

Interdisciplinary Case Analysis and Research Design (Master's Level)

2018-2019W, Term 2
Wednesday 9am-12pm, AERL 107

Instructor

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Course Overview

This course explores how to design effective, interdisciplinary research for addressing a broad range of problems in the area of environment and sustainability. Case studies are used to develop understanding and insight into research design fundamentals, including developing researchable topics, reviewing relevant literature, and identifying suitable research methods for evidence collection and analysis. Cases are selected to encompass a broad range of research methods (qualitative, quantitative, and mixed), and to demonstrate their strengths and limitations. Students will gain experience in developing and communicating research designs through written proposals and oral presentations. This section of RES 502 is designed for master's students.

Course Objectives

The goals of this course are to help students gain:

- literacy in research methods;
- familiarity with effective research design; and
- experience in developing a defensible research proposal.

While both qualitative and quantitative methods will be discussed, as well as mixed methods research design, the emphasis will remain on methodological literacy and research design. The course thus serves to complement, rather than substitute for, in-depth courses on research methods.

Learning Outcomes

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

- Identify different types of research methods and describe their strengths and limitations;
- Explain, using illustrative cases, why different methods might be appropriate and effective in different research contexts;
- Describe the major components of research proposals, differentiating between different types of proposals;
- Critique a research proposal using common evaluation criteria;
- Demonstrate familiarity with effective research design by developing and defending a research proposal.

Course Organization

Course Format

This is a seminar course that meets once a week for 3 hours. The first half of the course focuses on acquiring literacy in research methods and familiarity with effective research design. In this part of the course, the class format will typically consist of an informal lecture, discussion of assigned readings, and discussion of topics that are informed by homework assignments. Research methods and design will be introduced through a series of case studies that illustrate how different approaches can be utilized to investigate interdisciplinary problems related to the environment and sustainability.

The second half of the course focuses on developing skills to prepare a defensible proposal for the student's own thesis research. The class format in this part of the course will generally consist of in-class workshops that focus on the students' iterative drafts of various sections of their proposals. The workshop format entails presenting draft material, receiving peer feedback, and providing comments in turn on classmates' work.

Course Schedule

Theme	Week	Topic
<i>I. Research Design</i>	1	Course introduction
	2	Research questions
	3	From literature review to revised questions
	4	Methods and cases I
	5	Methods and cases II
	6	Methods and cases III
<i>II. Research Proposals</i>	7	Initial research questions
	8	<i>(Midterm break)</i>
	9	<i>No class – individual meetings</i>
	10	Initial framework, data, and methods
	11	Revised framework, data, and methods
	12	Revised framework, data, and methods (cont'd)
	13	Proposal presentations
	14	Proposal presentations (cont'd)

Course Requirements and Grading

There will be two major assignments (described in Course Assignments, below).

% of grade	Course element	Due date
30%	Assignment #1 – Research design guide	February 13, 2019
30%	Assignment #2 – Research proposal	April 5, 2019
20%	Class preparation (homework)	Throughout term
20%	Class participation	Throughout term

In addition to these two graded assignments, homework will be assigned in some weeks (listed under "preparation" in the Course Outline below) to ensure that students are prepared for the next class. These assignments will be marked only on a Satisfactory/Unsatisfactory basis.

Class participation is essential in this course. Students are expected to attend and participate actively in all classes, including occasionally leading in-class discussions. Peer feedback is an important component of this course, and students are expected to critique their classmates' work in a thoughtful, constructive, and professional manner.

Assessment Criteria

Assignments will be graded on the following criteria, as applicable:

- Appropriate application of course concepts;
- Identification and use of relevant sources;
- Originality;
- Clarity and completeness of documentation;
- Clarity and logic of explanation, reasoning and argument; and
- Professional writing/presentation.

Course Policies

Points will be taken off for late assignments as follows:

Days past due	Points deducted (/100)
1-7 days	10 points
8-14 days	20 points
>14 days	assignment will not be graded

Students with extenuating circumstances should notify the instructor as soon as possible.

Course Materials

There is no textbook for this course. Readings will be compiled in a course reader and will be available electronically through the UBC Canvas system. Readings will generally consist of academic journal articles and book chapters. These will be supplemented by examples and resources presented in class.

Readings

(in order of assignment)

1. Oberg, G. 2011. "Marking Your Playground," ch.7 in *Interdisciplinary Environmental Studies: A Primer*. Chichester, UK: Wiley-Blackwell.
2. du Toit, J. 2014. "Research Design," ch.2.2 in E.A. Silva, P. Healey, and N. Harris, eds. *The Routledge Handbook of Planning Research Methods*. Florence, US: Routledge.
3. Farthing, S. 2016. "A Justification for Your Research Question," ch.4 in *Research Design in Urban Planning: A Student's Guide*. London: Sage Publications Ltd.
4. Silliman, B.R., J. van de Koppel, M.W. McCoy, J. Diller, G.N. Kasozi, K. Earl, P.N. Adams, and A.R. Zimmerman. 2012. "Degradation and Resilience in Louisiana Salt Marshes after the BP-Deepwater Horizon Oil Spill," *Proc. National Academy of Sciences* 109(28): 11234–11239.
5. Arora, M.P. and S. Lodhia. 2017. "The BP Gulf of Mexico Oil Spill: Exploring the Link Between Social and Environmental Disclosures and Reputation Risk Management," *Journal of Cleaner Production* 140: 1287-1297.
6. Ritchie, L.A., D.A. Gill, and M.A. Long. 2018. "Mitigating Litigating: An Examination of Psychosocial Impacts of Compensation Processes Associated with the 2010 BP *Deepwater Horizon* Oil Spill," *Risk Analysis* 38(8): 1656-1671.

7. Mayer, B., K. Running, and K. Bergstrand. 2015. "Compensation and Community Corrosion: Perceived Inequalities, Social Comparisons, and Competition Following the Deepwater Horizon Oil Spill," *Sociological Forum* 30(2). DOI: 10.1111/soef.12167
8. Mekonnen, M.M. and A.Y. Hoekstra. 2012. "A Global Assessment of the Water Footprint of Farm Animal Products," *Ecosystems* 15: 401-415.
9. Fielding, K.S., A. Spinks, S. Russell, R. McCrea, R. Stewart, and J. Gardner. 2013. "An Experimental Test of Voluntary Strategies to Promote Urban Water Demand Management," *Journal of Environmental Management* 114: 343-351.
10. Harris-Lovett, S.R., C. Binz, D.L. Sedlak, M. Kiparsky, and B. Truffer. 2015. "Beyond User Acceptance: A Legitimacy Framework for Potable Water Reuse in California," *Environmental Science & Technology* 49: 7552-7561.
11. Walker, D., N. Forsythe, G. Parkin, and J. Gowing. 2016. "Filling the Observational Void: Scientific Value and Quantitative Validation of Hydrometeorological Data from a Community-Based Monitoring Programme," *J. Hydrology* 538: 713-725.

Course Assignments

No.	Topic	Learning objective
1	Research design guide	Synthesize and reflect on learning about effective research design.
2	Research proposal	Gain experience developing a research proposal. Produce a proposal suitable for a master's thesis.

Assignment #1 will take the form of a guidelines document in which students will articulate, organize, summarize, synthesize, and reflect upon what they have learned about effective research design. The intent is to develop a document that they can refer to while developing their own research proposal and throughout the process of conducting the actual research.

In Assignment #2, students will work on a proposal for their own master's thesis. Weekly homework assignments (listed under "preparation" in the Course Outline below), together with in-class discussion and feedback, are designed to help students develop this proposal iteratively and progressively throughout the second half of the course.

Course Outline

Week Date Topics, Readings, and Preparation/Assignments for Week

I. Research Design

1	W 1/2	<i>Course introduction</i>	<p>Topics: Self-introductions; syllabus; interdisciplinary research</p> <p>Assignments: #1 (research design guide) distributed</p>
2	W 1/9	<i>Research questions</i>	<p>Topics: Inspiration; types, scope, scale; "researchable" questions</p> <p>Readings: Oberg (2011), Ch.7 "Marking Your Playground" du Toit (2014), Ch.2.2 "Research Design"</p> <p>Preparation: Select paper; be prepared to discuss its research questions</p>
3	W 1/16	<i>From literature review to revised questions</i>	<p>Topics: Reading and writing literature reviews; gaps and contributions</p> <p>Readings: Farthing (2016) Ch.4 "A Justification for Your Research Question"</p> <p>Preparation: For selected paper, be prepared to discuss its literature review, findings, and contributions</p>
4	W 1/23	<i>Methods and cases (I) - oil spill impacts</i>	<p>Topics: Research methods and design</p> <p>Readings: Silliman et al. (2012) "Degradation and resilience in Louisiana salt marshes after the BP-Deepwater Horizon oil spill" Arora, M.P. and S. Lodhia. (2017) "The BP Gulf of Mexico oil spill: ... environmental disclosures and reputation risk management" Ritchie et al. (2018) "Mitigating litigating: ...Psychosocial impacts of... the 2010 BP <i>Deepwater Horizon</i> oil spill" Mayer et al. (2015) "Compensation and community corrosion:... the Deepwater Horizon oil spill"</p>
5	W 1/30	<i>Methods and cases (II) - water scarcity</i>	<p>Topics: Research methods and design (cont'd)</p> <p>Readings: Mekonnen and Hoekstra (2012) "A global assessment of the water footprint of farm animal products" Fielding et al. (2013) "An experimental test of voluntary strategies to promote urban water demand management" Harris-Lovett et al. (2015) "Beyond user acceptance: A legitimacy framework for potable water reuse in California" Walker et al. (2016) "Filling the observational void: ...Hydrometeorological data from a community-based monitoring programme"</p>
6	W 2/6	<i>Methods and cases (III) - additional topic (to be determined)</i>	

Topics: Research methods and design (cont'd)
Readings: (To be distributed)

II. Research Proposals

7 W 2/13 *Initial research questions*

Preparation: Initial research question for master's thesis
Topics: Problem context, research ideas, initial research questions; literature review strategies, justifying research questions
Assignments: #1 due (9am by email)
Assignments: #2 (research proposal) distributed

8 W 2/20 *NO CLASS – Midterm break*

9 W 2/27 *Literature review, revised questions, initial methods*

Preparation: Draft literature review (organized notes); revised questions and justification (contribution); selection of and justification for methods
Topics: Developing and operationalizing a conceptual framework; data collection strategies; justifying data collection methods; research ethics; access, feasibility, contingency plans

10 W 3/6 *NO CLASS – individual meetings this week*

Preparation: Draft conceptual framework; outline of data collection and analysis

11 W 3/13 *Revised framework, data, and methods*

Preparation: Draft presentations of Assignment #2 (group A)
Topics: Connecting research questions, data collection, and analysis

12 W 3/20 *Revised framework, data, and methods (cont'd)*

Preparation: Draft presentations of Assignment #2 (group B)
Topics: Presenting a research proposal

13 W 3/27 *Presentations*

Topics: Student presentations of Assignment #2 (group A)

14 W 4/3 *Presentations (cont'd)*

Topics: Student presentations of Assignment #2 (group B)

F 4/5 Assignments: #2 due (5pm by email)
