



UNIVERSITY OF CALGARY
FACULTY OF ENVIRONMENTAL DESIGN

EVDS 753

H(3-3)

Research Skills and Critical Thinking
Fall 2017

LEC 1 Tuesday 09:30 - 12:20 PF2140
STUDIO 1 Thursday 09:30 - 12:20 PF2140

Instructor: Sasha Tsenkova

Contact information: tsenkova@ucalgary.ca;

Office hours: By appointment

Design of innovative research methods appropriate for environmental design research. Development of skills in research design and critical thinking while writing a research proposal.

This course may be repeated for credit.

Introduction

Research is arguably the most exciting aspect of the academic enterprise. To be the first to create new knowledge, or to interpret existing concepts in a novel way, is extremely satisfying and rewarding. Like any endeavor, there are sets of tools that have been developed to assist in conducting research. Some of them, like statistical methods, are common across disciplines. Others are predominantly used by researchers in certain fields, such as “field observation” or “content analysis”. Environmental design has its own research methods and traditions, drawing liberally from other fields, and adding some of its own such as design research and research-based design practice.

One common thread in all research is the ability to think critically. This is a disciplined process in which the researcher not only questions established ideas, but also looks “under the hood” to recognize the quality of supporting evidence, assumptions, biases, and interpretations that have been applied to observations and theories.

This course emphasizes the nature of inquiry of environmental design research, framing environmental design research problems, and skills for developing research proposals and literature review.

Objectives

The purpose of the course is to teach students about developing environmental design research proposals that exhibit thoughtful, thorough, theoretical and practical understanding of the background, purposes and processes employed in scholarly research and reporting in the Faculty of Environmental Design.

The course objectives are to:

- Develop an in-depth understanding of research methods and know when each is appropriate to apply.

- Conduct successful literature research and use precedents for framing a research problem.
- Create a conceptual framework for a research project while thinking critically regarding the testing of assumptions and ideas.
- Understand the iterative nature of environmental design research, including the evolution of research questions or objectives, and allowing ideas to mature through debate and inquiry.
- Develop a research proposal following guidelines of the Social Sciences and Humanities Research Council of Canada (SSHRC), the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC), or equivalent.

Teaching Approach

Students will be guided in developing a research design, conceptual framework and academic proposal from a focused research topic of their choice, preferably their thesis topic. Lectures, group exercises, presentations, tutorials, discussion and feedback on assignments are employed in experience-based, inquiry-focused way to address diversity of approaches for intervention-oriented environmental design research. Emphasis is placed on collegial exchanges among class participants including students, instructors, advisors or supervisors, and mentors. Each student will be expected to complete a literature review on their selected topic and a research proposal suitable for submission to a Tri-Council agency (or equivalent) by the end of the course. The course is run as a research studio with a typical weekly format that includes regular classes on Tuesdays and Thursday sessions dedicated to student presentations, one-on-one specific feedback on research and independent work.

Content: Topic Areas & Detailed Class Schedule (Subject to change as per in-class announcements)

Date	Topic and activities
September	
Week 1 12-14	Lecture: Course introduction. Scope and nature of environmental design research. Introduction to critical thinking. Interactive discussion. Assignment #1 introduced.
	Group exercise: Critical Thinking exercise
	Individual exercise: What is your topic of research interest? How is it new and original? How is it significant, relevant? How does your professional and personal background, beliefs, etc. influence the way you think about it? Oral presentation.
Week 2 19-21	Lecture: How to conduct and write a literature review. Tutorial at U of C Library (to be confirmed)
	Individual work & tutorials with instructors: Literature review on individual research topic.

Week 3 26-28 Lecture: How to frame a research problem and develop it into a research proposal. Theoretical foundations and conceptual frameworks.

Group exercise: Develop a conceptual model. Oral report and diagram. Assignment #2 introduced.

Individual work & tutorials with instructors: Suggest gaps in knowledge or practice (research opportunities) in your field. Identify a theoretical framework for your research problem and key concepts, variables and/or relationships.

September 28: Assignment #1 due: research Topic and Annotated Bibliography

October

Week 4 3-5 **Student presentations on research purpose and objectives and key findings of the literature review.**
Sign up for student methods presentations.

Week 5 10-12 Thanksgiving Holiday & Block Week (no class)

Week 6 17-19 Lecture: Research Methods I – qualitative, quantitative and mixed methods frequently used in environmental research. **Student presentations on a research method.**

Individual work and tutorial with instructors: Identifying a conceptual framework and research methodology.

Tuesday, October 17 Assignment # 2 due - written report – Research purpose, objectives and review of literature.

Week 7 24-26 Lecture: Research Methods II – qualitative, quantitative and mixed methods frequently used in environmental research. **Student presentations on a research method.**

Week 8 31-2 Lecture: Grant writing skills and tutorial on completing a Tri-Council Application. Assignment #4 introduced.

Student presentations of Conceptual Framework

Tuesday, October 31 Assignment #3 due: written report - Conceptual Framework and Methodology

November

Week 9 7-9 **Student presentations of research proposals – I**
Individual work and tutorials with instructors: written proposals.

Week 10 ***Student presentations of research proposals – II***
14-16 Individual work and tutorials with instructors: written proposals.

Week 11 ***Student presentations of research proposals – III***
21-23 Individual work and tutorials with instructors: written proposals.

Week 12 Individual work and tutorials with instructors: written proposals.
28-30

December

1 **University internal submission deadline for Canada Graduate Scholarships – Master’s (CGS-M)**

Week 13 Course review; written proposals
5-7

Thu, December 7 (at 23:59) Assignment # 4 due: Research Proposal suitable for Tri-Council submission

Final deadline for submission of any other course work, which may be penalized for lateness.

Course Expectations and Means of Evaluation

Students will be expected to attend all lecture and seminar sessions and studios, and should notify the instructors by email if an illness or emergency prevents attendance. Students will also be expected to read assigned readings and come to class prepared to discuss the issues and concepts raised in the readings and other assignments. Discussions will be respectful of all opinions.

The course evaluation will be based on assignments and participation in class. Quality of writing (spelling, grammar, clarity) or other forms of communication (visual, oral, etc.) will be a component of the assessment of all assignments. The class schedule provides opportunities for in class presentations of assignments, reflective learning and constructive feedback through individual consultations on students’ proposals and ideas.

The course assignments and course evaluation components are as follows:

Participation	In class discussion & presentations	10%
Assignment 1	Due September 28	15%
Assignment 2	Due October 17	20%
Assignment 3	Due October 31	25%
Assignment 4	Due December 7	30%
Total:		100%

There will be no final examination.

Assignment 1 (written): Research topic and annotated bibliography. The report begins with a brief review (250-word limit) of the research topic, including key concepts. The annotated bibliography includes the citation and your abstracted review of information in the article including its content, the author’s arguments, and most importantly, key words and your thoughts on the relevance of the

article to your research interests noted for future reference. The abstracted review of information normally should not exceed 150 words per source. This written assignment must be formatted according to provided guidelines. The minimum number of annotated entries in the bibliography is 10 journal articles, papers, book chapters, or other peer reviewed references (i.e. primary academic literature).

Assignment 2: Research problem statement, purpose and objectives, and literature review (1,000-1,200 words). The research problem statement provides a brief overview of the phenomenon and a specific research problem (focus). The purpose describes the qualitative end point of the project (what you propose to achieve). Objectives or research questions are specific foci for the research, which if addressed will accomplish the purpose of the project. The literature review should briefly address the state of knowledge on your research topic, identify the theoretical framework, the knowledge gaps that your research addresses, and highlight key concepts, variables or relationships pertaining to your research. *Presentations in week 4.*

Assignment 3: Describe your conceptual framework, including a concept map, as it relates to your research problem, citing appropriate theoretical references. Describe the methods you will use to undertake this research including the overall approach, data collection methods and data analysis methods. Cite previous research that has addressed similar research objectives or questions and appropriate methodology references to support your choices. There should be a clear relationship between the conceptual framework and the methodology. Include your problem statement and objectives at the beginning of the report for reference. Ideally, the research report of 1,000-1,200 words would highlight all material to be included in a written research proposal for submission to the Canadian Institutes of Health Research (CIHR), Natural Sciences and Engineering Research Council of Canada (NSERC), or Social Sciences and Humanities Research Council of Canada (SSHRC) (called 'Tri-Council'), or equivalent. *Presentations in week 8.*

Assignment 4 (written): Complete written research proposal, following guidelines of 'Tri-Council', or equivalent as approved by instructor. *Ongoing presentations in weeks 9-11 with individual consultations, as appropriate.*

You are strongly encouraged to submit your research funding proposal to the relevant competition by the internal University deadline (details will be provided in class as they differ by program and Masters/Doctoral level). These dates generally fall before the end of the Fall term. So while you are all welcome to take the time (up to December 7) to polish, complete and submit your Assignment 4, we encourage the students to submit a complete proposal to the appropriate agency (as judged by the instructor) by the University deadline. In other words, we really want you to submit your best proposal in time for the relevant competition(s), but if you aren't able to do this, you can still earn full marks in this component through regular class assignment.

Grading Scale

Final grades will be reported as letter grades, with the final grade calculated according to the 4-point range.

Grade	Grade Point Value	4-Point Range	Percent	Description
A+	4.00	4.00	95-100	Outstanding - evaluated by instructor
A	4.00	3.85-4.00	90-94.99	Excellent - superior performance showing comprehensive understanding of the subject matter
A-	3.70	3.50-3.84	85-89.99	Very good performance
B+	3.30	3.15-3.49	80-84.99	Good performance
B	3.00	2.85-3.14	75-79.99	Satisfactory performance
B-	2.70	2.50-2.84	70-74.99	Minimum pass for students in the Faculty of Graduate Studies
C+	2.30	2.15-2.49	65-69.99	All final grades below B- are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements.
C	2.00	1.85-2.14	60-64.99	
C-	1.70	1.50-1.84	55-59.99	
D+	1.30	1.15-1.49	50-54.99	
D	1.00	0.50-1.14	45-49.99	
F	0.00	0-0.49	0-44.99	

Notes:

- A student who receives a "C+" or lower in any one course will be required to withdraw regardless of their grade point average (GPA) unless the program recommends otherwise. If the program permits the student to retake a failed course, the second grade will replace the initial grade in the calculation of the GPA, and both grades will appear on the transcript.

Students are expected to complete all course assignments on time. There will be no final exam. Students must obtain an overall passing grade to pass this course. A student who feels that a piece of graded term work (term paper, essay, etc.) has been unfairly graded may have the paper re-graded. The student shall discuss the work with the instructor within **fifteen days** of being notified about the mark or of the item's return to the class. More information can be found in the Graduate Calendar: <http://www.ucalgary.ca/pubs/calendar/grad/current/gs-o.html>

Reading Required

Robson, C. & McCartan, K. (2017) Real World Research. 4th edition. Wiley, Toronto.

Readings Recommended

The following are suggested readings for the course. Journal articles are available through University of Calgary Library digital resources. Books may be found in the library or purchased from the bookstore, Chapters/Indigo (www.chapters.indigo.ca), or Amazon (Amazon.ca).

Allio, R. 2003. Russell L. Ackoff, iconoclastic management authority, advocates "systemic" approach to innovation. *Strategy & Leadership* 31(3): 19-26.

Bradley, C. and E. Green. 2011. Reflective journaling. Centre for teaching and Learning. University of Regina. <http://www.uregina.ca/ctl/blog/reflective-journaling>

Dorst, K. (2008). Design research: a revolution-waiting-to-happen. *Design Studies* 29: 4-11.

Friedman, K. 2003. Theory construction in design research: criteria, approaches, and methods. *Design Studies* 24:507-522.

Guthery, F. 2008. Statistical ritual versus knowledge accrual in wildlife science. *The Journal of Wildlife Management* 72(8): 1872-1875.

Kuipers, T.A., Vos, R., and Hauke, S. 1992. Design Research Programs and the Logic of Their Development. *Erkenntnis* 37: 37-63.

Maxwell, J.A. 2013. Chapter 3 Conceptual framework: What do you think is going on? Pages 39-72 in L. Bickman and D. Rog (eds.) *Qualitative research design: An interactive approach*. Sage Publications Inc., Los Angeles.

Ortlipp, M. 2008. Keeping and using reflective journals in the qualitative research process. *The Qualitative Report* 13(4): 695-705.

Zerubavel, E. 1999. *The clockwork muse: A practical guide to writing theses, dissertations, and books*. Harvard University Press. 128 pp.

Web Sites by Topic

Annotated bibliographies: <http://www.writing.utoronto.ca/advice/specific-types-of-writing/annotated-bibliography>

Reflective journaling: <http://www.uregina.ca/ctl/blog/reflective-journaling>

Additional Readings

Antrop, M. (2003). Expectations of scientists towards interdisciplinary and transdisciplinary research. *Interdisciplinary and transdisciplinary landscape studies: potential and limitations*. B. Tress, G. Tress, A. van der

Valk and G. Fry. Wageningen, Netherlands, Delta Series 2: 44-54.

Bayazit, N. (2004). "Investigating design: A review of forty years of design research." *Design Issues* 20(1): 16-29.

Buchanan, R. 2001. Design research and the new learning. *Design Issues* 17(4):3-23

Castán Broto, V., M. Gislason, et al. (2009). "Practicing interdisciplinarity in the interplay between disciplines: experiences of established researchers." *Environmental Science & Policy* 12(7): 922-933.

Dalrymple, J. and W. Miller (2006). "Interdisciplinarity: a key for real-world learning." *Planet* 17: 29-31.

Dimagio, P.J. (1995). Comments on "What Theory is Not". *Administrative Science Quarterly*, 40(3), 391-397.

Dorst, K. (2008). Design research: a revolution-waiting-to-happen. *Design Studies* 29: 4-11.

Downton, Peter (2005). *Design Research*. Melbourne, AUS: RMIT University Press.

Eastman C., W.C. Newstettler and W.M. McCracken, eds. 2001. *Design knowing and learning: cognition in design education*. Elsevier, Oxford.

Friedman, K. 2003. Theory construction in design research: criteria, approaches, and methods. *Design Studies* 24:507-522.

Guthery, F. 2008. Statistical ritual versus knowledge accrual in wildlife science. *The Journal of Wildlife Management* 72(8): 1872-1875.

Koestler, A. (1973). *The Act of Creation*. New York, NY: Dell Publishing Co., Inc.

Kuhn, T. (1970). *The Structure of Scientific Revolutions*. Chicago, IL: University of Chicago Press.

Kuipers, T.A., Vos, R., & Hauke, S. (1992). *Design Research Programs and the Logic of Their Development*. *Erkenntnis*, Kluwer Academic Publishers, 37, 37-63.

Lakatos, I., & Musgrave, A. (eds.) (1974). *Criticism and the Growth of Knowledge*. London, UK: Cambridge University Press.

Lawson, B. (2007). *What Designers Know*. Burlington, MA: Architectural Press, Elsevier Ltd.

Lieblich, A., Tuval-Mashiach, R., & Zilber, T. (1998). *Narrative Research: Reading, Analysis, and Interpretation*. Thousand Oaks, CA: Sage Publications, Inc.

Locke, L.F., Spirduso, W.W., & Silverman, S.J. (1993). *Proposals that Work*. Newbury Park, CA: Sage Publications.

Magee, B. (1973). *Popper*. London, UK: Fontana.

Mason, J. (1996). *Qualitative Researching*. Thousand Oaks, CA: Sage Publications, Inc.

McGregor, S. L. T. (2004). "The nature of transdisciplinary research and practice." [unpublished, but I like her synthesis]

Morgan, G. (Ed.) (1983). *Beyond Method, Strategies for Social Research*. Thousand Oaks, CA: Sage Publications, Inc.

Nicolescu, B. (2005). *Transdisciplinarity past, present and future. Moving Worldviews*. Soesterberg, the Netherlands.

Oxman, R. 2004. Think-maps: teaching design thinking in design education. *Design Studies* 25:63-91.

Pacanowsky, M. (1995). "Team tools for wicked problems." *Organizational Dynamics*, 23(3), 36-52.

Popper, K.R. (1992). *The Logic of Scientific Discovery*, London, UK: Routledge.

Schön, D. A. (1983) *The Reflective Practitioner: How professionals think in action*. London, UK: Temple Smith

Schön, D. A. (1987) *Educating the Reflective Practitioner*. San Francisco, CA: Jossey-Bass.

Schön, D.A. and G. Wiggins. 1992. Kinds of seeing and their functions in designing. *Design Studies* 13:135-156.

Simon, H.A. (1996). *The Sciences of the Artificial*. Cambridge, MA: MIT Press.

Slife, B.D., & Williams, R.N. (1995). *What's Behind the Research?* Thousand Oaks, CA: Sage Publications, Inc.

Sommer, R., & Sommer, B.B. (1980). *A Practical Guide to Behavioral Research*. New York, NY: Oxford University Press.

Sutton, R.I., & Staw, B.M. (1995). What Theory is Not. *Administrative Science Quarterly*, 40(3), 371-384.

Tress, B., G. Tress, et al. (2009). "Integrative research on environmental and landscape change: PhD students' motivations and challenges." *Journal of Environmental Management* 90(9): 2921-2929.

Wener, R. (2008). "History and Trends in Environmental Design Research (EDR)." *Journal of Architectural and Planning Research* 25(4): 282-97.

Weick, K.E. (1995). What Theory is Not, Theorizing Is. *Administrative Science Quarterly*, 40(3), 385-390.

Zeisel, J. (1988). *Inquiry by Design*. New York, NY: Cambridge University Press.

Zerubavel, E. 1999. *The clockwork muse: A practical guide to writing theses, dissertations, and books*. Harvard University Press. 128 pp.

Notes:

1. Written work, term assignments and other course related work may only be submitted by e-mail if prior permission to do so has been obtained from the course instructor. Submissions must come from an official University of Calgary (ucalgary) email account.
2. Academic Accommodations. Students who require an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to their Instructor or the designated contact person in EVDS, Jennifer Taillefer (jtaillef@ucalgary.ca). Students who require an accommodation unrelated to their coursework or the requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Vice-Provost (Student Experience). For additional information on support services and accommodations for students with disabilities, visit www.ucalgary.ca/access/
3. Plagiarism - Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Most commonly plagiarism exists when:(a) the work submitted or presented was done, in whole or in part, by an individual other than the one submitting or presenting the work (this includes having another impersonate the student or otherwise substituting the work of another for one's own in an examination or test),(b) parts of the work are taken from another source without reference to the original author,(c) the whole work (e.g., an essay) is copied from another source, and/or,(d) a student submits or presents work in one course which has also been submitted in another course(although it may be completely original with that student) without the knowledge of or prior agreement of the instructor involved. While it is recognized that scholarly work often involves reference to the ideas, data and conclusions of other scholars, intellectual honesty requires that such references be explicitly and clearly noted. Plagiarism is an extremely serious academic offence. It is recognized that clause (d) does not prevent a graduate student incorporating work previously done by him or her in a thesis. Any suspicion of plagiarism will be reported to the Dean, and dealt with as per the regulations in the University of Calgary Graduate Calendar.
4. Information regarding the Freedom of Information and Protection of Privacy Act (<http://www.ucalgary.ca/secretariat/privacy>) and how this impacts the receipt and delivery of course material
5. Emergency Evacuation/Assembly Points (<http://www.ucalgary.ca/emergencyplan/assemblypoints>)
6. Safewalk information (<http://www.ucalgary.ca/security/safewalk>)
7. Contact Info for: Student Union (<https://www.su.ucalgary.ca/contact/>); Graduate Student representative(<http://www.ucalgary.ca/gsa/>) and Student Ombudsman's Office (<http://www.ucalgary.ca/ombuds/>).