EVDS 753 **Fall 2016** **H (3-3)**

Critical Thinking and Research Methods

LEC 1 M 09:30 - 12:20 PF 2140
LAB 1 W 09:30 - 12:20 PF 2140

Instructor: Dr. Thomas P. Keenan, FCIPS

Instructor contact information: keenan@ucalgary.ca (403) 220-7437

Office location: PFB 4184

Office hours: By appointment, after class, and by email

Exploration of the research process in an environmental design context and using design as a method of research. 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. Other are predominantly used by researchers in certain fields. When we hear “randomized clinical trial”, we think of tests for a new pharmaceutical agent. “Field observation” calls to mind an anthropologist crouching behind a tree to observe a tribal ritual, while “document analysis” is often the domain of history researchers.

Environmental design has its own research methods and traditions, drawing liberally from other fields and add 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 (sometimes unconscious) 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 writing research proposals.

Objectives

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

Specific course objectives are to:

1. Understand, and write an academic proposal and its components.
2. Relate personal background, education, skill sets and interests to a chosen research topic.
3. Develop an in-depth understanding of research methods and know when each is appropriate
4. Improve skills for accessing and using literature and precedents as a basis for research.
5. Conduct successful literature research; cited and use precedents for framing a research problem.
6. Create a conceptual framework for a research project.
7. Think critically as a researcher by testing assumptions and ideas.
8. 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.
9. Develop a real research proposal following guidelines of the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC), or the Social Sciences and Humanities Research Council of Canada (SSHRC) (called 'Tri-Council'), or equivalent.

Teaching Approach

Students will be guided in developing a focused research topic, suitable for use as a thesis topic. Lectures, group exercises, presentations, tutorials, discussion and feedback on assignments are employed in experience-based, inquiry-focused explorations 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 research proposal suitable for submission to a Tri-Council agency (or equivalent) by the end of the course.

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

Date	Milestones, Topic and activities
September	
12	Lecture: Course introduction. Scope and nature of environmental design research. Interactive discussion. Exercise: form thematic groups; address question - What is a Master/PhD Thesis? Oral report by groups at start of next class.
14	Oral group reports on what constitutes a Master/PhD thesis. Lecture: Relationship between background, research interests and academic literature. Group exercise: Identify what you are bring that is new, original, and significant in your research? Who might care? How is it relevant? Important? Timely?
19	Oral groups reports on answers to above questions. Lecture: What is Critical Thinking? How Do We Recognize It? Exercise: Junk Science, Bad Science, Evil Science
21	Discussion and Class Activity
26	Lecture: Using the literature and information management - sources, search engines, peer-reviewed vs. gray literature and web information. Group exercise: Annotated bibliography on a negotiated topic. **September 27, 2016, @2359: Assignment #1 due: Written Brief on Your Research Interests.**
28	Discussion and Class Activity including individual presentations by each student (5 mins) on research interests and proposed topic.

October

3	Lecture: Theoretical foundations and conceptual frameworks (system of concepts, assumptions, expectations, beliefs, and theories that supports and informs a research project). Group exercise: develop a conceptual model (diagram) of a research problem and report key concepts. Oral report and diagram. **October 4, 2016 @2359: Assignment # 2 due: Written report - literature and information sources for your research topic**
5	Discussion and Class Activity
10	Thanksgiving Holiday (no class)
12	Block Week (no class) but you are encouraged to attend the Design Matters lecture with Liam Young
17	Lecture: Research methods I - qualitative, quantitative and mixed methods frequently used in environmental design research.
19	Discussion and Class Activity
24	Lecture: Research methods II - qualitative, quantitative and mixed methods frequently used in environmental design research.
26	Discussion and Class Activity
31	***Assignment #3 due (as presentation and posted to D2L): Research purpose and objectives, and review of appropriate methods.***

November

2	Lecture: Why researchers need money and how to get it
7	Discussion and Class Activity
9	Lecture: Reaching out with your research
14	Grant writing skill and tutorial on purpose, objectives and methods
16	Discussion and Class Activity
21	Grant writing skills and tutorial: completing a Tri-Council application.
23	Lecture (determined by class needs and wishes)
28	Discussion and Class Activity
30	Lecture (determined by class needs and wishes). Possible student presentations of research proposals (see SPECIAL BONUS OFFER below).

December

1	**University internal submission deadline for Canada Graduate Scholarships - Master's (CGS M)**
5	Individual Work and tutorials with instructor – written proposals
7	Course Review. Individual work and tutorials with instructor - written proposals.
	December 7, 2016 @2359
	Assignment # 4 due: Written report – Research Proposal suitable for Tri-Council submission
	Also 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 seminar meetings, and should notify the instructor by email if an 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.

Quality of writing (spelling, grammar, clarity) or other forms of communication will be a component of the assessment of all assignments.

The course components and weight are as follows:

1. Participation:	In class and online	15%
2. Assignment 1:	Due September 27, 2016 @2359)	10%
3. Assignment 2:	Due October 4, 2016 @2359	15%
4. Assignment 3:	Due in class, October 31, 2016	20%
5. Assignment 4:	Due December 7, 2016 @2359	40%
Total:		100%

There will be no final exam.

Students must successfully complete Assignment 4, and also achieve an overall grade average of B- in order to pass this course.

Assignment 1 (written): Brief statement of research interest; maximum 300 words of text. This report outlines the nature of the topic the student intends to develop as a research proposal. Briefly: describe the topic; the need for research; your academic and professional background and experience relevant to conducting research on the topic (optional); and provide a summary of necessary skills and knowledge to be enhanced or acquired for conducting successful research on the topic. This is a starting point only. It is expected that the research focus will evolve as the problem is explored throughout the remainder of the course, and subsequently during the degree program.

Assignment 2 (written): Literature review and annotated bibliography. The report begins with a brief review (250-word limit) of the research topic, including: key theories and 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 papers, book chapters, books, or other peer reviewed references (i.e. primary academic literature).

Assignment 3 (presentation plus provide electronic copy on D2L): Research problem statement, purpose and objectives, and review of relevant methods; Presentations in class. 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. Provide a brief review of methods used by previous authors to address similar research objectives or questions. Ideally, the presentation 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.

Assignment 4 (written): Complete research proposal. Written research proposal, following guidelines of the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC),or the Social Sciences and Humanities Research Council of Canada (SSHRC) (called 'Tri-Council'), or equivalent as approved by instructor.

SPECIAL BONUS OFFER: 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 full time (up to December 7 @2359) to polish, complete and submit your Assignment 4, any student who submits a complete proposal to the appropriate agency (as judged by the instructor) by the University deadline will receive full marks for class participation. Students who do this will also be expected to present their proposal in class for the benefit of others.

In other words, we really want you to submit your best effort 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 other class participation.

Grading Scale:

Final grades will be reported as letter grades, with the final grade calculated according to the 4-point range. Assignments will be evaluated by numerical grades, with their letter grade equivalents as shown.

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.

Course Readings

Weekly **required readings** will be available on the course D2L site. This will include links to the latest guidelines for various graduate scholarship programs. It is important that you check D2L every week.

Discussion groups will also be set up for each week and active participation in these (at least one good posting per week) is expected and will form part of the participation component of the final grade.

The following are **suggested** readings for the course. Journal articles, and many of the books, are available through University of Calgary Library digital resources.

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

Brookfield, S. 2012. Teaching for Critical Thinking: Tools and Techniques: To Help Students Question Their Assumptions. Jossey-Bass and Willey, San Francisco (2012)

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. Erkenntinis 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.

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

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

Web Sites/Videos
Annotated bibliographies:
http://www.writing.utoronto.ca/advice/specific-types-of-writing/annotated-bibliography

Reflective journaling:
http://www.niu.edu/facdev/_pdf/guide/assessment/reflective_journals%20and_learning_logs.pdf

Avoiding accidental plagiarism
https://www.youtube.com/watch?v=TcbTz2D3-ZY
https://www.youtube.com/watch?v=F1S1FZ-bn5E

Developing a research topic
https://www.youtube.com/watch?v=nXNztCLYgxc

Special Budgetary Requirements
None.

Acknowledgements
The instructor extends appreciation to the instructors of several other EDVS courses who, though their course outlines, reading lists, and other input, have contributed to the evolution of this course. Your ideas and input will make it even better in the future!

Notes:

1. Written work, term assignments and other course related work may only be submitted by email 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 fulfil 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/).