INTEG 375

Research Design & Methods

Tuesday and Thursday, 11:30 am - 12:50 pm, EV2-2069
slack: methods-f2016.slack.com

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DESCRIPTION

This course provides an introduction to empirical research design and methods with a focus on applications in the social sciences. You will learn a variety of techniques for collecting and analyzing quantitative and qualitative data, and will have the opportunity to use some of these methods in real research projects. By the end of the course you will be a more informed consumer of empirical research and have a basic set of skills for designing and implementing your own empirical research projects. Most importantly, you will have a foundation for future learning about research design and methods.

LEARNING OUTCOMES

By the end of the class, students should be able to:

1. correctly use specialized language to explain research design decisions
2. formulate empirical research questions and testable hypotheses
3. operationalize abstract concepts
4. appropriately evaluate the quality of a sampling design
5. explain the basic idea and importance of Bayes' theorem
6. describe the fundamental logic of quantitative, qualitative, and social networks methods
7. describe the challenges and opportunities of systematic evaluation research
8. use research software (i.e. R and NVivo) for basic data analysis

DELIVERABLES AND EVALUATION

You can download a calendar file (`.ics`) with the dates for all quizzes and deliverables here.[1]

Assignment	Deadline	Value
Research proposal (collaborative, includes TCPS2 training and optional ethics application)	Oct. 13th	10%
Presentation of research proposal (collaborative)	Oct. 13th	5%
10 comprehension quizzes (individual, ~10 minutes)	Ongoing	30%
Empirical research paper (collaborative)	Dec. 7th	40%
Presentation of 1 rule of social research from Firebaugh (2008) (collaborative, , ~10 minutes)	Nov. 29th	5%
Engagement / participation	Ongoing	10%

Research Proposal (Collaborative)

You will write a 2,500 word research proposal (don't waste words!) that presents the initial idea for your final empirical research paper. You may use any of the research methods introduced in this class. Some guidelines for writing a research proposal are provided on pages 117-8 of Babbie and Benaquisto (2013), but I strongly recommend that you also look at Przeworski and Salomon (1995). The grading rubric is based in part on the recommendations discussed in Przeworski and Salomon (1995). The grading rubric is available online at: here.[2].

Your proposal must include the following sections: (1) problem or objectives, including a couple of answerable research questions; (2) literature review (not more than 5-7 relevant articles), including hypotheses if appropriate; (3) a discussion of the key variables or concepts in your research; (4) a discussion of the population you will focus on; (5) a discussion of the data you will use (if you are collecting your own data, a discussion and justification of your data collection strategy); (6) a discussion and justification of the methods you will use to analyze your data; (7) a statement of the contributions that you hope / expect your research will make; and (8) a schedule for the various stages of the research.

You should also include the following as attachments: (1) a description of the contributions each collaborator made to the development of the proposal (2-4 sentences each); (2) a copy of the certificate of completion of TCPS2 training for all project members *regardless of whether you are collecting original data*; and (3) *if you are collecting original data* (e.g. with semi-structured interviews), you must include your full ethics application as an attachment.

You need to complete an online ethics training module for this course.[3] **You will automatically fail the course if you do not complete the TCPS2 training. No exceptions.**

Empirical Research Paper (Collaborative)

The main deliverable in this course is an empirical research paper. It should build directly on the research proposal submitted earlier in the course, *but it is OK to deviate slightly as the project evolves*. The final paper should include the following sections, regardless of the data or methods you are using:

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1. The download url is http://www.johnmclevey.com/research-methods/downloads/INTEG375.ics.

2. Here is the link: http://www.johnmclevey.com/research-proposal-rubric/

3. Here is the link: http://www.pre.ethics.gc.ca/eng/education/tutorial-didacticiel/.

(1) introduction and context, (2) theory and hypotheses, (3) data and methods, (4) results, and (5) discussion and conclusion.

I expect the final papers to be about 7,000 words, and **no more** than 7,500 words under any circumstances. When you submit your paper, you should include a short 'submission letter' outlining the research questions addressed, the data and methods used, and the most important findings. You should also explain how your project changed in response to my feedback on your proposal. Finally, describe the roles that each person played in the process of conducting the research and writing the paper. I will further clarify my expectations for the final paper in class meetings. The rubric is available online at: here.[4].

10 Comprehension Quizzes

Although there are no exams in this course, there are 10 very short quizzes to test student comprehension of the readings and other class material. Quizzes will always cover the material up to but not including what we are doing that day. They will not include material already covered on previous quizzes.

Each of these quizzes will take approximately 10 minutes and will consist of short answer and/or multiple choice questions. **I will drop your lowest grade.** The dates for all quizzes are provided in the "Schedule & Readings" section below.

Quiz Topics:

Q1 theory construction, good research questions

Q2 research design

Q3 operationalization and measurement, the logic of sampling

Q4 survey methodology

Q5 causality, Bayes' theorem

Q6 indexes, scales, and typologies; descriptive statistics and graphs

Q7 fundamentals of inferential statistics

Q8 qualitative interviews and data analysis

Q9 social networks research

Q10 systematic evaluation research

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4.   Here is the link: http://www.johnmclevey.com/research-paper-rubric/

Presentation of 1 Rule of Social Research

I will divide the class into 6 groups. Each group will select one of the rules (excluding Rule 1) from Firebaugh (2008) to present to the class. Presentations should emphasize the general take-home point of each rule and discuss empirical examples from the text. Despite the emphasis on general take-home points, the presentations should also explain the justification for each rule.

Presentations can be informal (i.e. slides may be used but are not necessary) and should not exceed 20 minutes. Groups will be formed in the first few weeks of class. The rules will be presented in the same order they appear in the book. I will circulate a list of dates for presentation when the groups are formed.

Presentation of Research Proposal

Each group will give a formal 10-15 minute presentation of their research proposal to the class. I will discuss my expectations for the presentation in class meetings.

Engagement / Participation

The quality of this course – like any other – depends on you being engaged. Your participation grade will be based on (a) contributions to class discussion, (b) small group discussion, (c) your involvement in any online discussions, and (d) attendance. If you *really* don't like speaking up in class, you can participate more online, but you *must* speak with me about this. Although I will not be assigning a participation grade until the end of the semester, I am happy to provide qualitative feedback on your participation throughout the semester.

I will be tracking attendance using the attendance register in LEARN. Your attendance will be recorded as either (1) present, (2) absent, (3) late, or (4) excused. If you arrive more than 5 minutes late, you will lose 50% of the credit for attending class. In other words, arriving late twice is equivalent to missing a class. There is no penalty for excused absences, which **always** require advance notice and generally require a note from a doctor. You can log on and view your attendance record under the "assessments" tab. The schedule at the end of this syllabus includes a unique ID for each class. The ID is also used in the attendance register.

READINGS

Books & Reports

You must purchase Bram (2014) and Babbie and Benaquisto (2013). The others are *great* books and I highly recommend picking them up, but they are **not** required purchases. If you choose not to purchase them, they are available on course reserve at the Dana Porter Library.

- **Required Purchase**: Uri Bram (2014) *Thinking Statistically*
- **Required Purchase**: Earl Babbie and Lucia Benaquisto (2013) *Fundamentals of Social Research*
- Glenn Firebaugh (2008) *Seven Rules for Social Research*
- Janice Aurini, Melanie Heath, and Stephanie Howells (2016) *The How To of Qualitative Research: Strategies for Executing High Quality Projects*
- Naomi Robbins (2012) *Creating More Effective Graphs*
- Stephen Few (2012) *Show Me the Numbers*

- Garry Robins (2015) *Doing Social Network Research*
- Paul Silvia (2015) *Write It Up: Practical Strategies for Writing and Publishing Journal Articles*
- Tri-Council Policy Statement (2014) (available online for download)

Online Tutorials

- Hadley Wickham (2016) "Introduction to dplyr"
- Katherine Ognyanova (2016) "Network Visualization with R"

Supplemental Resources

Depending on your final projects, you may wish to consult some of the following books. All are excellent guides to specific research methods and / or approaches to research design.

- A. Field, Miles, and Field (2012) *Discovering Statistics with R*
- M. Miles, Huberman, and Saldana (2014) *Qualitative Data Analysis*
- King, Keohane, and Verba (1994) *Designing Social Inquiry: Scientific Inference in Qualitative Research*
- Prell (2012) *Social Network Analysis: History, Theory, & Methodology*
- Weiss (1995) *Learning from Strangers: The Art and Method of Qualitative Interview Studies*
- Groves et al. (2009) *Survey Methodology*
- Rossi, Lipsey, and Freeman (2003) *Evaluation: A Systematic Approach*
- Jensen and Laurie (2016) *Doing Real Research: A Practical Guide to Social Research*
- Creswell (2013) *Research design: Qualitative, quantitative, and mixed methods approaches*
- Tufte (1983) *The visual display of quantitative information*
- Chang (2013) *R Graphics Cookbook*

COMPUTING

You will need to bring a laptop to class when there are "labs" scheduled. If you are unable to do so, please speak with me as soon as possible so that I can arrange something for you. You will need a laptop, phone, or tablet when there are quizzes scheduled.

We will use R – an open source language / environment for statistical computing and data visualization – for the quantitative, text analytic, and social networks part of the course. It is *not* necessary for you to know anything about R, or about programming languages, before taking this class.

We will use a trial version of NVivo during the qualitative parts of the course. There will be time in class to make sure all software is correctly installed.

DATASETS

In class, I will primarily use data from the International Social Survey Programme, including modules on attitudes, social networks, work, social inequality, and the environment. I may also occasionally use data from research projects that I am working on, or from the following sources:

1. Anything from the list of awesome public datasets

2. Elementary-Secondary Education Survey (ESES) and other surveys from Statistics Canada
3. Women in Parliament, 1945-2003: Cross-National Dataset
4. Aid Data: Open Data for International Development
5. Canadian Community Health Survey - Annual Component (CCHS)
6. British Household Panel Survey
7. Public use data from Statscan, including crime statistics
8. Government of Canada Open Data Portal
9. Any of the datasets available from the ICPSR repository or from Dataverse. There is a Dataverse repository for researchers affiliated with Ontario universities.

You are free to use any of these datasets in your own work. Feel free to consult me about using other datasets.

SUBMITTING WORK & LATE POLICY

I will only grade work that you upload to Learn. If it is not on the Learn website, I will not grade it. Do not ever submit a Microsoft Word document. Submit a PDF file instead. I will deduct **5 points** a day for every day, or part of a day, that your work is late, including weekends. I will not make exceptions without a medical note.

Plagiarism Detection Software (Turnitin)

Plagiarism detection software (Turnitin) will be used to screen assignments in this course. This is being done to verify that use of all materials and sources in assignments is documented. In the first week of the term, details will be provided about arrangements for the use of Turnitin in this course.

Turnitin: Text matching software will be used to screen assignments in this course. This is being done to verify that use of all materials and sources in assignments is documented. Students will be given an option if they do not want to have their assignment screened by Turnitin. If you do not wish to submit your work to Turnitin, your group can schedule a meeting with me to discuss your submissions in person.

LAPTOPS AND THE FACEBOOK PENALTY

Laptops may be used in the classroom on the honors system. If I see Facebook, email, an IM client other than #slack, a newspaper story, a blog, or *any* other content not related to the class, I will remove 1 point from your participation grade on the spot. No exceptions.

COMMUNICATION

We will be using the collaboration tool slack for all class communication. Of course you are free to email me, but I tend to respond to slack messages from students faster than I respond to emails. *I use the do not disturb settings on #slack, so I will not see any messages you send me outside of normal working hours.* Sign up and sign into slack by going to slack.com. There are slack apps for Mac OS X, iOS, and Android. If you are a Linux or Windows user, there is a very good web app.

Feedback

I will solicit brief, informal, and confidential course evaluations throughout the semester. These will only take a few minutes of your time. The purpose is to make sure that we are moving at a comfortable pace, that you feel you understand the material, and that my teaching style is meeting your needs. I will use this ongoing feedback to make adjustments as the course progresses. Although you are not obligated to do so, please fill out the evaluations so that I can make this the best learning experience for you, and the best teaching experience for me.

ON CAMPUS RESOURCES

The Writing Centre

Although I will be giving you feedback on your work throughout the term, I encourage you to make appointments with people at the writing centre. Their services are available to all UW students.

Access Ability Services

The AccessAbility Office, located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the AccessAbility Office at the beginning of each academic term.

Mental Health

The University of Waterloo, the Faculty of Environment, and our Departments consider students' well-being to be extremely important. We recognize that throughout the term students may face health challenges – physical and / or emotional. Please note that help is available. Mental health is a serious issue for everyone and can affect your ability to do your best work. Counselling Services is an inclusive, non-judgmental, and confidential space for anyone to seek support. They offer confidential counselling for a variety of areas including anxiety, stress management, depression, grief, substance use, sexuality, relationship issues, and much more.

UNIVERSITY POLICIES

Academic Integrity

In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility.

We will all uphold academic integrity policies at University of Waterloo, which include but are not limited to promoting academic freedom and a community free from discrimination and harassment. You can educate yourself on these policies – and the disciplinary processes in place to deal with violations – on the Office of Academic Integrity website.

A student is expected to know what constitutes academic integrity, to avoid committing academic offense, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about 'rules' for group work / collaboration should seek guidance from the course

professor, academic advisor, or the Undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline. For typical penalties, check Guidelines for Assessment of Penalties.

Grievances and Appeals

A student who believes that a decision affecting some aspect of his / her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70: Student Petitions and Grievances, Section 4. When in doubt please contact your Undergraduate Advisor for details.

A decision made or penalty imposed under Policy 70 – Student Petitions and Grievances (other than a petition) or Policy 71 – (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals).

Religious Observances

Student needs to inform the instructor at the beginning of term if special accommodation needs to be made for religious observances that are not otherwise accounted for in the scheduling of classes and deliverables.

SCHEDULE & READINGS

There is a lot of required reading in this course. You should pair up with someone (or a few people) at the start of the term to develop course notes collaboratively.

BB = the Babbie and Benaquisto (2013) textbook *Fundamentals of Social Research*

ID	DATE	TOPIC	QUIZ	PRES	LAB	READING
1	Sept. 8	Introduction, Ethical Social Research				Skim Tri-Council Policy Statement
2	Sept. 13	Empirical Research and Theory Construction				BB pp. 4-28, 31-33, 41-57
3	Sept. 15	Crafting Good Research Questions				Firebaugh Ch. 1
4	Sept. 20	Research Design and Causation	Q1			BB Ch. 4
5	Sept. 22	Operationalization and Measurement	Q2			BB Ch. 5
6	Sept. 27	The Logic of Sampling				BB Ch. 6
7	Sept. 29	Survey Research	Q3			BB Ch. 8
8	Oct. 4	Thinking Statistically	Q4			Bram Ch. 1
9	Oct. 6	Thinking Statistically				Bram Ch. 2-3
–	Oct. 11	**Study Day, No Class**				—
10	Oct. 13	Indexes, Scales, and Typologies	Q5	RPs		Babbie "Indices…" Ch. (on LEARN)
11	Oct. 18	Basics of Quantitative Data Analysis			R	BB 14 and Wickham tutorial
12	Oct. 20	Descriptive Statistics and Graphs			R	BB pp. 436-447 and Robbins Ch. 1
13	Oct. 25	Exploring Data with Graphs			R	Few Ch. 6 and *either* 9 or 11
14	Oct. 27	Exploring Data with Graphs			R	Robbins any 2 chapters
15	Nov. 1	Fundamentals of Inferential Statistics	Q6		R	BB pp. 447-459
16	Nov. 3	Designing a Qualitative Project	Q7			Aurini et al. Ch. 3
17	Nov. 8	Semi-Structured Qualitative Interviews				Aurini et al. Ch. 4
18	Nov. 10	Qualitative Data Analysis			NVivo	Aurini et al. Ch. 8
18	Nov. 15	Social Networks Research	Q8		R	Robins Ch. 1-2
10	Nov. 17	Social Networks Research			R	Robins Ch. 3, Ch. 8, skim Ognyanova
21	Nov. 22	Writing Empirical Research Articles				Silvia pp. 83-174
22	Nov. 24	Systematic Evaluation Research	Q9			BB Ch. 12

ID	DATE	TOPIC	QUIZ	PRES	LAB	READING
23	Nov. 29	Seven Rules of Social Research	Q10	Rules		Firebaugh – *read sections before now!*
24	Dec. 1	Debriefing				

REFERENCES

Aurini, Janice, Melanie Heath, and Steph Howells. 2016. *The How to of Qualitative Research*. SAGE.

Babbie, Earl, and Lucia Benaquisto. 2013. "Fundamentals of Social Research."

Bram, Uri. 2014. *Thinking Statistically*. Kuri Books.

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Wickham, Hadley. 2016. "Introduction to Dplyr." https://cran.rstudio.com/web/packages/dplyr/vignettes/introduction.html.