IS588: Research Design in Library and Information Science

Time: Monday 1:00-03:50pm (Fall 2017 semester)
Location: 204
Instructor: Jana Diesner
Contact: Email: jdiesner@illinois.edu,
Course Units: 4 GR hours.
Office hour: Mondays and Wednesdays, 4-5pm, Office 304 (Jana)

1. Short Description

This course provides an introduction to the design of IS research, including a consideration of the philosophical and logical underpinnings of research. We survey different methods used in IS research and explore research design issues. Throughout the course the emphasis will be on research design choices, especially the connections between research problems or questions, and research methods. This course is open to all PhD students across campus.

2. Learning Objectives

Completing this course and its requirements should enable you to:

- Understand the fundamental concepts and approaches to using the scientific method, i.e., conducting systematic and empirical research.
- Gain an overview on data types (qualitative, quantitative) and method types (principles, appropriate use, best practices) to collect, prepare, and analyze data, and interpret analysis results.
- Apply this knowledge to understand and assess research conducted by others.
- Gain hands-on experience with fundamental research practices that are used throughout the research life cycle.
- Improve your academic and professional writing, speaking, communication, and presentation skills.

3. Materials

- Textbooks (mandatory):
    - BWR: Bernard, H. R., Wutich, A. & G. W. Ryan (2016). Analyzing qualitative data: Systematic approaches. SAGE publications, 2nd edition
    - CR: Connaway, L.S. & M.L. Radford (2016). Research Methods in Library and Information Science, Libraries Unlimited, 6th Edition (available as e-book from library)
- Other readings (required and optional) will be announced as needed.
- Software: We might use software tools. Information on that will be announced as needed.

4. Prerequisites

None. No programming or technical skills required.

5. Course Requirements

1. **Attendance and Participation:** You are expected to attend and participate in all class sessions. You are invited to initiate or engage in discussions on Moodle (post them to the "Open discussion" section).
2. **Reading and Discussions:** Readings are posted on Moodle. You are expected to read the book chapters assigned for each session AFTER each session. You are expected to read additional readings before class and be prepared to discuss them in class. This requirement is tested as part of participation and attendance, and homework assignments.
3. **Homework:** There will be several problem sets. You are expected to complete them on your own.

6. Evaluation and grading policy

Deliverable	Grade
Attendance and participation	25%
Homework assignments	75%

7. Course policies and expectations

You can expect me to provide you with feedback on any deliverable, to answer your emails within 24 hours, and to point you to further learning resources if you are interested.

To submit a deliverable, email it to me, put it into my mailbox, or slip it under my door. Petition for late submissions need to occur at a minimum of 24 hours prior to the due date. Lateness for turning in any item will reduce the grade by 33% for each 24 hour period late.

8. Academic Integrity

Please review and reflect on the academic integrity policy of the University of Illinois, http://studentcode.illinois.edu/article1_part4_1-401.html, to which we subscribe. By turning in materials for this course, you certify that all work presented is your own and has been done by you independently. If, in the course of your writing, you use the words or ideas of another writer, proper acknowledgement must be given (using a style manual of your choice). Not to do so is to commit plagiarism, a form of academic dishonesty. If you are not clear on what constitutes plagiarism and how to cite sources appropriately, please consult with me.

Plagiarism and cheating are not tolerated in this course. Plagiarism means using words, ideas, or arguments from other people or sources without citation. To prevent plagiarism, cite all sources consulted to any extent (including material from the internet). Four or more words used in sequence must be set off in quotation marks, with the source identified. Cheating means copying answers from other people or sources, or providing someone with such information.

9. Statement of Inclusion

As the state's premier public university, the University of Illinois at Urbana-Champaign's core mission is to serve the interests of the diverse people of the state of Illinois and beyond. The institution thus

values inclusion and a pluralistic learning and research environment, one in which we respect the varied perspectives and lived experiences of a diverse community and global workforce. We support diversity of worldviews, histories, and cultural knowledge across a range of social groups including race, ethnicity, gender identity, sexual orientation, abilities, economic class, religion, and their intersections.

To insure that disability-related concerns are properly addressed from the beginning, students with disabilities who require assistance to participate in this class are asked to contact the instructor as soon as possible. The University office of Disability Resources and Educational Services (DRES) can assist you in obtaining disability-related academic adjustments and/or auxiliary aids (http://www.disability.illinois.edu/). Please contact them as soon as possible by calling 217-333-1970; 217-689-0564 (VRS); or e-mail disability@illinois.edu

10. Tentative Course Schedule

Session	Date	Topic	Concepts	Deliverables	Readings
1	9/11	Introduction Library resources: Presentation from Dan Tracy	- Qualitative data - Qualitative methods - Quantitative data - Quantitative methods - Mixed data - Mixed methods - Epistemology - Positivist tradition - Humanist tradition - Empiricism - Local library resources (Tracy)	HW1 out	BWR1 CR1, 7
2	9/18	Research topics and writing - Finding a research topic - Writing up your research idea	- Inductive and deductive research - Hypothesis - Literature Search - Publishing	HW1 due, HW2 out	BWR2 CR2 (only 68-80)
3	9/25	Research design - Sampling	- Measurement - Unit of analysis - Validity - Non-probability samples - Probability samples - Causality	HW2 due, HW3 out	BWR3 CR3 (only 80-85) CR4 (only 133-153) CR5
4	10/02	Research design - Data collection - Presentation from UIUC survey center	- Trace data - Archival data - Secondary analysis - Observation - Elicitation	HW3 due, HW4 out	BWR4 CR4 (only up to 132) CR8
5	10/09	Finding themes in data - Codebooks and coding - Presentation of manual annotation or	- Observational techniques - Intercoder and intracoder reliability - Ontologies, taxonomies, classification - Precision and recall	HW4 due, HW5 out	BWR5,6 CR6,8

		evaluation project from current PhD students			
6	10/16	Finding themes in data and data analysis - Grounded theory - Content analysis - Narrative Analysis - Schema analysis	- Induction and deduction in action - Mental models - Hermeneutics - Sociolinguistics	HW5 due, HW6 out	BWR10, 11 CR10
7	10/23	Data representation and analysis - Models - Modeling	- Conceptual models - Computational models - Simulation - Explanation - Prediction	HW6 due, HW7 out	BWR7,8 Gilbert & Troitzsch 1,2
8	10/30	Data analysis - From qualitative data to insights	- Types of variables (nominal, ordinal, interval) - Attributes - Data representation - Data structures - Algorithms	HW7 due, HW8 out	BWR9 CR6
9	11/06	Methods - Cultural analysis - Ethnographies	- Prompting - Pile sorting - Cluster analysis - Multidimensional scaling	HW8 due, HW9 out	BWR16, 18 CR9
10	11/13	Methods - Unsupervised methods	- Grouping - Topic Modeling - Evaluation	HW9 due, HW10 out	
11	11/27	Methods - Supervised methods	- Classification - Evaluation	HW10 due, HW11 out	
13	12/04	Research regulations and ethics - Guest talk by Chieh-Li Chin	- Institutional and Sectoral Norms and Regulations (IRB, HIPAA, Menlo) - Privacy and Security laws and regulations - Terms of service, terms of use - Personal Values - Technical solutions - Crowdsourcing of tasks (worker treatment, sampling, performance) - Anonymization and deidentification	HW11 due, HW12 out	Kosinski et al. (2015), Zimmer (2010)
14	12/11	- Publishing and presenting - Research proposals		HW12 due In class presentation	CR13, 14

Additional readings (will also be listed on Moodle):

- Gilbert, N. & K.G. Troitzsch (2005). Simulation for the social scientist. Open University Press, 2005. 2nd ed. (coordinating with library, no need to purchase)
- Kosinski, M., Matz, S. C., Gosling, S. D., Popov, V., & Stillwell, D. (2015). Facebook as a research tool for the social sciences: Opportunities, challenges, ethical considerations, and practical guidelines. *American Psychologist*, 70(6), 543-556.
- Zimmer, M. (2010). "But the data is already public": on the ethics of research in Facebook. Ethics and Information *Technology*, 12(4), 313-325

11. Grading Scale

Grading Scale	
Grade	**Points Range**
A	94 - 100
A-	90 - 93
B+	87 - 89
B	84 - 86
B-	80 - 83
C+	77 - 79
C	74 - 76
C-	70 - 73
D+ and below	- 69