

# Course Syllabus

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## SI 840: Research Methods, v2.0

Instructors: Paul Edwards and Erin Krupka

**Meets: Thursday 12:30-3:30 (note unusual time slot), 2245 North Quad**

**Office hours: Edwards, M 3-4 and Th 11-12**

**Course overview:** The intellectual agenda of the School of Information draws upon many referent disciplines. Thus, students doing research that is at the intersection of disciplines require a foundation and fluency in the **nature of knowledge** and the **methods of knowing**. To this end, this course explores what constitutes knowledge, what it means to know something and the conventions that have been adopted in the social sciences as methods of knowing.

### Required books (please buy these):

- Porter, Theodore M. *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton: Princeton University Press, 1995.
- Okasha, Samir. *Philosophy of Science: A Very Short Introduction*. Oxford Paperbacks, 2002.
- Booth, Wayne C, Gregory G Colomb, Joseph M Williams, Joseph Bizup, and William T FitzGerald. *The Craft of Research* (University of Chicago, 2016, 4th edition).

### Week 1, January 5: How do we know? Part 1

NB, please read these items before our first class session. No writing assignment is due, but our discussion will be much richer if everyone is prepared.

#### Readings:

- \*Okasha, Chapters 1-3
- \*Porter, Chapters 1-4. NB, in Chapters 3 and 4, Porter occasionally goes into extended narratives about historical episodes. The details of these are not important for our work; focus on the conceptual framework he develops.





### Week 2, January 12, How do we know? Part 2

#### Readings (read in the following order):







- \*Okasha, Chapter 5
- \*Frank Pajares, [synopsis of Thomas Kuhn, \*The Structure of Scientific Revolutions\*](https://www.uky.edu/~eushe2/Pajares/kuhnsyn.html) (1962). This isn't long, but because it's a synopsis of a book, the text is very rich. Please read slowly and carefully. Pajares also has an [outline version](https://www.uky.edu/~eushe2/Pajares/Kuhn.html) of the same synopsis. Some readers may find it useful to bounce back and forth between the synopsis and the outline.
- \*Porter, Chapters 8-9
- \*Burke, Peter. *A Social History of Knowledge II: From the Encyclopaedia to Wikipedia* (London: Polity, 2012), [Chapter 2](#). The purpose of this reading is to gain a fast, high-level view of the many different modes of analyzing knowledge and their historical origins. Details of the history are not important.

### Week 3, January 19, How do we know? Part 3

**Readings (read in the following order):**

- \*Latour, Bruno. *Science in Action: How to Follow Scientists and Engineers Through Society*. Cambridge: Harvard University Press, 1987. [Chapter 1](#)  
- \*Booth et al., Section 3, "Making an Argument," pp. 105-172
- \*Burke, Peter. *A Social History of Knowledge II: From the Encyclopaedia to Wikipedia* (London: Polity, 2012), [Chapter 1](#)  . The purpose of this reading is to gain a fast, high-level view of the many different modes of collecting information as input to C knowledge. Details of the history are not important.











**Week 4, January 26, Social loafing****Readings:**

- \*Beenen et al. (2004) "[Using social psychology to motivate contributions to online communities](#)  
- \*Erickson & Kellogg (2003) "[Social translucence: using minimalist visualisations of social activity to support collective interaction](#)  
- \*Karau & Williams (1993) "[Social loafing: A meta-analytic review and theoretical integration](#)  

**Week 5, February 2, Laboratory experiments**

Starting this week we will use group numbers to divide readings. Group numbers: (1) Rasha and Lia, (2) Elizabeth and Brad, (3) Heeryung and Jeremy, (4) Carl and Jiaqi, (5) Harman and Zhewei, (6) Ernest and Allison, (7) Danaja and Mohamed

**Readings (everyone read \*, groups 1-4 read ^, groups 5-7 read ~, others are optional):**







- \*Davis, D. D., & Holt, C. A. (1993). [Experimental economics: Methods, problems, and promise](#)  . *Estudios Economicos*, 179-212.
- \*Friedman and Sunder. [A primer for economists](#)  . Pages 1-29.
- ^Berg, Joyce, John Dickhaut and Kevin McCabe. [Trust, Reciprocity, and Social History, Games and Economic Behavior](#)  , Volume 10, Issue 1, July 1995, Pages 122-142,
- ~Bolton, Greiner and Ockenfels. [Engineering Trust: Reciprocity in the Production of Reputation Information](#)  , *Management Science* 59 (2), 2013, pages 265-285.
- Optional for all: Gergle and Tan, [Experimental Research in HCI](#)  , 2014

**Week 6 (Feb. 9) - Experiment or Happenstance Field / OLS Regression I**

*Discussion leaders:* Carl and Jiaqi (please only cover the research papers)

Reminder: If you are not a discussion leader, then your critique is due this week. Only critique those items with a \* and highlight or with a ~ and highlight or with a ^ and highlight.

Read:

- \*Gujarati, D. N. (2009). *Basic econometrics*. Tata McGraw-Hill Education. [Chapters intro-1](#)   (we will read ch. 2 later — ignore it for now, even though it is in the PDF).
- \*Qiu, J., Tang, J., Liu, T. X., Gong, J., Zhang, C., Zhang, Q., & Xue, Y. (2016, February). [Modeling and predicting learning behavior in MOOCs](#)  . In *Proceedings of the Ninth ACM International Conference on Web Search and Data Mining* (pp. 93-102). ACM.
- ^Beheshitha, S. S., Hatala, M., Gašević, D., & Joksimović, S. (2016, April). [The role of achievement goal orientations when studying effect of learning analytics visualizations](#)  . In *Proceedings of the Sixth International Conference on Learning Analytics & Knowledge* (pp. 54-63). ACM.
- ~Sinha, T., Jermann, P., Li, N., & Dillenbourg, P. (2014). [Your click decides your fate: Inferring information processing and](#)











[attrition behavior from MOOC video clickstream interactions](#)  . *arXiv preprint arXiv:1407.7131*.

- (suggested) Harrison, G. W., & List, J. A. (2004). [Field experiments](#)  . *Journal of Economic literature*, 42(4), 1009-1055.

### Week 7 (Feb. 16) - Experiment or Happenstance field / Regression II and Simulation

*Discussion leaders:* Danaja and Mohamed (please only cover the research papers)











**Read (this week, read all three highlighted papers and the \* book chapter, but write your assignment only about the \* research paper and the one corresponding to your group. ^ groups 1-4; ~ groups 5-7.)**

- \*Gujarati, D. N. (2009). *Basic econometrics*. Tata McGraw-Hill Education. [Chapter 2](#)   (last part of the PDF from Week 6.)
- \*State, B. and Adamic, L. (2015, February). [The Diffusion of Support in an Online Social Movement: Evidence from the Adoption of Equal-Sign Profile Pictures](#)  . In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing* (pp. 1741-1750). ACM.
- ^Kim DA et al. (2015) [Social network targeting to maximise population behaviour change: a cluster randomised controlled trial.](#)   *The Lancet* 386(9989), 145-53.
- ~Centola, D. (2010). [The spread of behavior in an online social network experiment.](#)   *Science*, 329(5996), 1194-1197.
- (Suggested) Banerjee, A., Chandrasekhar, A. G., Duflo, E., & Jackson, M. O. (2013). [The diffusion of microfinance](#)  . *Science*, 341(6144), 1236498.

### Week 8 (Feb. 23) - Survey (cross sectional) / factor analysis

*Discussion leaders:* Rasha and Lia (please only cover the research papers)





**Read (this week everyone should read all the readings)**







- \*Booth et al., *The Craft of Research*, chapters 3-4. Read first — this may help you with your Intro/Abstract assignment.
- \*Müller, H., Sedley, A., & Ferrall-Nunge, E. (2014). [Survey research in HCI](#)  . In *Ways of Knowing in HCI* (pp. 229-266). Springer New York.
- \*Field, A. (2013). [Discovering statistics using IBM SPSS statistics](#). Sage. Chapter 17 (closely through section 17.4.2 and then skim other stuff. Again closely section 17.7).
- \*Leonardi, P. M., & Meyer, S. R. (2015). [Social media as social lubricant: How ambient awareness eases knowledge transfer](#)  . *American Behavioral Scientist*, 59(1), 10-34.
- \*Ellison, N. B., Steinfield, C., & Lampe, C. (2007). [The benefits of Facebook “friends:” Social capital and college students’ use of online social network sites.](#)   *Journal of Computer-Mediated Communication*, 12(4), 1143-1168.
- (Suggested) Hofmann, S., Beverungen, D., Räckers, M., & Becker, J. (2013). [What makes local governments' online communications successful? Insights from a multi-method analysis of Facebook.](#)   *Government Information Quarterly*, 30(4), 387-396.
- (Suggested) Guo, C., & Saxton, G. D. (2014). [Tweeting social change: How social media are changing nonprofit advocacy](#)  . *Nonprofit and Voluntary Sector Quarterly*, 43(1), 57-79.

### Week 9 (Mar. 9) - Interview and text analysis / grounded theory methods

*Discussion leaders:* Allison and Earnest (please only cover the research papers)

**Read (this week everyone should read all the readings):**

- \*Michael Muller (2014) “[Curiosity, Creativity, and Surprise as Analytic Tools: Grounded Theory Method](#)  .
  - \*Charmaz, K. (2006). “[Coding in grounded theory practice](#)  .
- ch. 3 of *Constructing grounded theory: a practical guide through qualitative analysis*. London: Sage, 42-71. We're reading this to get a sense of the actual practice of coding (described in Muller, above). You can read it lightly.

- \*Marin, Alexandra (2012). [“Don’t Mention IT: Why People Don’t Share Job Information, When They Do, and Why IT Matters.”](#)   *Social Networks* 34:2 : 181-92.
- \*Jansen, B. J., Jansen, K. J., & Spink, A. (2005). [Using the web to look for work: Implications for online job seeking and recruiting.](#)   *Internet research* 15(1), 49-66.
- (Suggested) Miles, M. B., Huberman, A. M., & Saldana, J. (2014). [Chapter 4: Fundamentals of qualitative data analysis.](#)   From *Qualitative data analysis: a methods sourcebook* (3rd ed.) Thousand Oaks: Sage, 69-104.

### Week 10 (Mar. 16) - Survey (cross sectional) and Happenstance Field / selection bias

*Note about homework for this date:* follow the usual weekly assignment format, but add one bullet point to your discussion. For each paper, determine whether sample selection bias might be present. Describe what that selection bias might be, and a statistical procedure (technique) or a new data collection procedure (instrument) you could use to remedy it.

*Discussion leaders: Zhewei and Harman (please only cover the research papers)*













#### Watch first:

- [Selection Bias: A Real World Example](https://www.youtube.com/watch?v=p52Nep7CBdQ) [\(https://www.youtube.com/watch?v=p52Nep7CBdQ\)](https://www.youtube.com/watch?v=p52Nep7CBdQ)



[\(https://www.youtube.com/watch?v=p52Nep7CBdQ\)](https://www.youtube.com/watch?v=p52Nep7CBdQ)





#### Read:

- \*Heckman, J. J. (1979). [Sample selection bias as a specification error](#)  . (extremely challenging)
- \*Marsden, P. V., & Hurlbert, J. S. (1988). [Social resources and mobility outcomes: A replication and extension](#)  . *Social forces*, 1038-1059.
- \*Gilbert, E., & Karahalios, K. (2009, April). [Predicting tie strength with social media](#)  . In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 211-220). ACM
- \*Jeon, G. Y., Kim, Y. M., & Chen, Y. (2010, April). [Re-examining price as a predictor of answer quality in an online Q&A site](#)  . In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 325-328). ACM.
- (Suggested) Harper, F. M., Raban, D., Rafaeli, S., & Konstan, J. A. (2008, April). [Predictors of answer quality in online Q&A sites.](#)   In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 865-874). ACM.
- (Suggested) Marsden, P. V., & Campbell, K. E. (1984). [Measuring tie strength.](#)   *Soc. F.*, 63, 482.
- (Suggested) Haythornthwaite, C. (2002). Strong, weak, and latent ties and the impact of new media. *The information society*, 18(5), 385-401.



### Week 11 (Mar. 23) - Interpretivist - ethnography

*Discussion leaders: Elizabeth and Bradley (please cover only the research papers)*

#### Read (this week everyone should read all the readings):

- \*Paul Dourish (2014) [“Reading and Interpreting Ethnography](#)  ,” in J. Olson & W. Kellogg, eds, *Ways of Knowing in HCI*, 1-24
- \*Janet Vertesi (2012) [“Seeing like a Rover: Visualization, embodiment, and interaction on the Mars Exploration Rover Mission](#)  ,” *Social Studies of Science* 42:3, 393-414
- \*Lee, D. T., Kleinman, J., & Kleinman, A. (2007). [Rethinking depression: an ethnographic study of the experiences of](#)

[depression among Chinese.](#)   *Harvard Review of Psychiatry*, 15(1), 1-8.

- \*Nguyen, T., Phung, D., Dao, B., Venkatesh, S., & Berk, M. (2014). [Affective and content analysis of online depression communities.](#)   *IEEE Transactions on Affective Computing*, 5(3), 217-226.

### Week 12 (Mar. 30) - Mixed Methods

*Discussion leaders: Heeryung and Jeremy (please cover only the research papers)*

#### Read:

- \*Guo, P. J., Kim, J., & Rubin, R. (2014, March). How video production affects student engagement: An empirical study of MOOC videos. In *Proceedings of the first ACM conference on Learning@ scale conference* (pp. 41-50). ACM.
- \*Kizilcec, R. F., & Halawa, S. (2015, March). Attrition and achievement gaps in online learning. In *Proceedings of the Second (2015) ACM Conference on Learning@ Scale* (pp. 57-66). ACM.
- \*Zheng, S., Rosson, M. B., Shih, P. C., & Carroll, J. M. (2015, February). Understanding student motivation, behaviors and perceptions in MOOCs. In *Proceedings of the 18th ACM conference on computer supported cooperative work & social computing* (pp. 1882-1895). ACM.

### Week 13 (April 6) - Project IA

Presenters (7 students, TBD): Apply the weekly assignment rubric to ***your own precandidacy proposal***. Present your proposal to the class, covering the main elements of the rubric along the way






Non-presenters: Apply the weekly assignment rubric to ***one core paper from your lit review***. Be prepared to explain it in detail to other students.

### Week 14 (April 13) - Project IB

Presenters (7 students, TBD): Apply the weekly assignment rubric to ***your own precandidacy proposal***. Present your proposal to the class, covering the main elements of the rubric along the way

Non-presenters: Apply the weekly assignment rubric to ***one core paper from your lit review***. Be prepared to explain it in detail to other students.


## Course Summary:

Date	Details	
Thu Jan 12, 2017	 <a href="#">Paradigm affiliation note card</a> ( <a href="https://umich.instructure.com/courses/122789/assignments/255095">https://umich.instructure.com/courses/122789/assignments/255095</a> )	due by 11:59pm
Thu Jan 26, 2017	 <a href="#">Assignment #1 - in pairs - generate topics and readings</a> ( <a href="https://umich.instructure.com/courses/122789/assignments/257980">https://umich.instructure.com/courses/122789/assignments/257980</a> )	due by 12:30pm
Thu Feb 2, 2017	 <a href="#">Week 5 writing on readings: Non-parametric analysis of correlation</a> ( <a href="https://umich.instructure.com/courses/122789/assignments/268347">https://umich.instructure.com/courses/122789/assignments/268347</a> )	due by 11:59pm
Thu Feb 9, 2017	 <a href="#">Week 6 - discussion of readings</a> ( <a href="https://umich.instructure.com/courses/122789/assignments/269838">https://umich.instructure.com/courses/122789/assignments/269838</a> )	due by 9am
	 <a href="#">Literature review for precandidacy project</a>	due by 11:59pm

<https://umich.instructure.com/courses/122789/assignments/266624>

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Thu Feb 16, 2017

 [Week 7 - discussion of readings](#)  
<https://umich.instructure.com/courses/122789/assignments/269850>

due by 9am

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Thu Feb 23, 2017

 [Week 8 - discussion of readings](#)  
<https://umich.instructure.com/courses/122789/assignments/269851>

due by 9am

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 [Introduction or abstract for precandidacy project](#)  
<https://umich.instructure.com/courses/122789/assignments/266625>

due by 11:59pm

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Thu Mar 9, 2017

 [Week 9 - discussion of readings](#)  
<https://umich.instructure.com/courses/122789/assignments/269853>

due by 9am

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Thu Mar 16, 2017

 [Week 10 - discussion of readings](#)  
<https://umich.instructure.com/courses/122789/assignments/269855>

due by 9am

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Thu Mar 23, 2017

 [Week 11 - discussion of readings](#)  
<https://umich.instructure.com/courses/122789/assignments/269856>

due by 9am

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Thu Mar 30, 2017

 [Week 12 - discussion of readings](#)  
<https://umich.instructure.com/courses/122789/assignments/269857>

due by 9am

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Tue Apr 11, 2017

 [Project presentations \(group I\) and weekly assignment \(group II\)](#)  
<https://umich.instructure.com/courses/122789/assignments/295469>

due by 12:40pm

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Fri Apr 14, 2017

 [Project presentations \(group II\) and weekly assignment \(group I\)](#)  
<https://umich.instructure.com/courses/122789/assignments/297248>

due by 11:59pm

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Thu Apr 20, 2017

 [Final precandidacy proposal](#)  
<https://umich.instructure.com/courses/122789/assignments/266627>

due by 11:59pm

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