Data and Society
Syllabus

All information as of 1/11/19.

Check the website (https://www.cs.rpi.edu/~bermaf/Data%20Course%202019/Data.html) for course updates and assignment templates and instructions as they are given.

Spring 2019
Data and Society, Low 3039
CSCI 6370 (Grads) / 4370 (Undergrads)
ITWS 6960 (Grads) / 4960 (Undergrads)

• Professor: Dr. Fran Berman
• Office: AE 218, 276-3794
• Office Hours: Friday 1-2 or by appointment (send email to bermafa@rpi.edu)
• Course website (linked off Fran’s RPI web page): https://www.cs.rpi.edu/~bermafa/Data%20Course%202019/Data.html
Data and Society – about this course

• This course will provide a broad (but not comprehensive) snapshot of the data-driven world
  – We’ll skim the sea of interesting data stuff, but we won’t / can’t include everything
  – We’ll focus on the impacts of technology on society
  – The course should provide a complement to the data technologies material in the ITWS Data Science, Web Science, Data Analytics and other courses

• The course will be structured to
  – Develop your critical thinking around data and help you become a more data-literate professional
  – Evolve your oral and written communication and assessment skills

Course foci:
• Implications for data-driven commerce, science, society
• Data infrastructure, stewardship, policy, regulation
• Current and next-generation challenges and opportunities

Guest Speakers this Semester:
• Andy Maltz, March 15?
• Kathy Pham, April 19?
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<th>Wednesday Section</th>
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<td>January 9: NO CLASS</td>
<td>January 11: INTRO – DATA AND SOCIETY</td>
<td>Fran presentation demo</td>
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<td>January 16: NO CLASS</td>
<td>January 18: BIG DATA 1; Topic groups / Topic materials information</td>
<td>Student presentations</td>
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<td>January 25: BIG DATA 2</td>
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<td>February 1: DATA AND SCIENCE</td>
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<td>February 8: DATA STEWARDSHIP AND PRESERVATION</td>
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<td>February 15: INTERNET OF THINGS</td>
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<td>February 22: DATA AND PRIVACY / FOUNDATIONS</td>
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<td>March 1: DATA AND PRIVACY / POLICY AND REGULATION</td>
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<td>March 6: Spring Break</td>
<td>March 8: Spring Break</td>
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<td>March 13: Student presentations</td>
<td>March 15: DATA AND ENTERTAINMENT [ANDY MALTZ?]</td>
<td>Student presentations</td>
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<td>March 20: TOPICS PRESENTATIONS 1</td>
<td>March 22: DATA AND DATING</td>
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<td>March 27: Student presentations</td>
<td>March 29: DIGITAL RIGHTS 1</td>
<td>Student presentations</td>
<td>Op-Ed Finals due</td>
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<td>April 5: DIGITAL RIGHTS 2</td>
<td>Student presentations</td>
<td>Briefings due</td>
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<td>April 10: Student presentations</td>
<td>April 12: DATA AND ETHICS</td>
<td>Student presentations</td>
<td>Op-Ed Finals returned, Topic Reports 2 due</td>
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<td>April 17: Student presentations</td>
<td>April 19: CAREERS IN TECH [KATHY PHAM?]</td>
<td>Student presentations</td>
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<td>April 24: Student presentations</td>
<td>April 26: TOPICS PRESENTATIONS 2</td>
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Course Information
https://www.cs.rpi.edu/~bermaf/Data%20Course%202019/Data.html

• Course website (above) will have all up-to-date information and materials
  – Syllabus may evolve slightly

• Presentation articles will be on the web for the week they will be given.
  – Embedded reference materials in the lecture will be given by URL. Lectures will be on the web.

• You are responsible for managing your assignments and participating in the class discussion. No late work.
How you’ll be graded

- **Topic Report and Presentation (Group), 35**
- **Presentation 1, 15**
- **Presentation 2, 15**
- **Op-Ed Final, 15**
- **Part. / Attend., 10**

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What you’ll be graded on 1
(additional grading specifics for Presentations later today)

• **Presentations (2, 15 points each, individual):**
  – Presentations on data-oriented current topics from the popular press.
  – **Students are responsible for scheduling their own Presentations and ensuring that both are done.** The expected Presentation template will be demonstrated at the end of today’s class.

• **Op-Ed (1, Final 15 points, individual):**
  – Op-Eds are a written “elevator pitch” designed to persuade the reader of a point of view.
  – Students will do a best effort “Draft Op-Ed” and receive feedback for their final Op-Ed. The **final op-ed should be a revision of the draft op-ed**, not a different topic / write-up. **The Final Op-Ed grade will be the one recorded for this assignment.** Op-Ed instructions will be given on January 25.
  – Students who are happy with their grades on the Draft Op-Ed can choose not to submit a Final Op-Ed. In that case, **please inform Fran** and the Draft Op-Ed grade will be recorded as the Final Op-ed grade.
What you’ll be graded on 2

• **Class participation (10 points based on attendance):**
  – Students are expected to attend 20+ out of 22 Wednesday and Friday class meetings for full Attendance credit.
    • You are responsible for making sure you sign the attendance sheet each time you are in class.
    • If you will miss class and your RPI school provides a written excuse, your absence will not be counted against your attendance grade
  – You are expected to participate in class discussions and be an attentive audience (and question asker) for speakers

• **Briefing (1, 10 points, individual)**
  – Short (2 pages undergrads, 3 pages grads) topic-focused paper
  – Instructions given March 1
What you’ll be graded on 3

• Topics Materials (Groups of 4, Group presentation / 15 points, group Topic Report / 15 points, Coordination / at most 5 points, based on individual assessments);
  – Get/read Bruce Schneier’s book (didn’t order it at the Bookstore, should be available through Amazon, etc.)
  – Fran will form Topic Groups on January 18.
  – Choose a topic from Schneier’s book and submit a one-pager describing your topic to Fran by February 8 (more detail later). Choose your Topic Report date preference (March 20 or April 26). (Fran may rebalance …)
  – Assignment components:
    • Jointly written topic description / Feb. 8 – 0 points
    • Jointly written Topic Report (6-8 pages) – all must contribute – 15 points
    • Joint 15 minute talk (+ 5 min Q&A) (all must contribute) – 15 points
    • Individual assessment of group dynamics and coordination – used for 0-5 point coordination grade given to everyone
  – Topic reports will be provided on the web for the class to read.

Group grade (35 points):
• Joint Presentation: 15 points, usual rubric
• Joint written Topic Report: 15 points, group grade, information provided on Jan. 18
• Group coordination: at most 5 points for coordination based on materials and individual assessments
Grads and Undergrads

• There will be slightly different expectations for grad students and undergrads
  – Individual Briefing lengths and technical depth expectations in presentations and op-eds will be different.
  – In writing and presentations, each student will be assessed at a level appropriate to their educational level (undergrad or grad)
## Learning Objectives and Outcomes

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<tr>
<th>Learning Objective</th>
<th>Outcome</th>
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<tr>
<td>Develop greater data literacy</td>
<td>Be able to understand and explain the role that data plays as well as its limitations in various areas of research, commerce and modern life.</td>
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<tr>
<td>Develop critical thinking skills around data</td>
<td>Be able to read, understand, assess, and discuss data-oriented professional and popular publications and articles.</td>
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<tr>
<td>Develop communication skills around data</td>
<td>Be able to advance an evidence-based argument about data, data cyberinfrastructure and data-oriented efforts to both knowledgeable specialists within the field as well as non-specialists.</td>
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Academic Integrity

• Student-teacher relationships are built on trust. For example, students must trust that teachers have made appropriate decisions about the structure and content of the courses they teach, and teachers must trust that the assignments that students turn in are their own. Acts, which violate this trust, undermine the educational process. The Rensselaer Handbook of Student Rights and Responsibilities defines various forms of Academic Dishonesty and you should make yourself familiar with these.

• In this class, all assignments that are turned in for a grade must represent the student’s or group’s own work. In cases where help outside project expectations was received, a notation on the assignment should indicate your collaboration. If references or other materials are used, they should be cited. Submission of any assignment that is in violation of this policy will result in a penalty.

• If found in violation of the academic dishonesty policy, students may be subject to two types of penalties. The instructor administers an academic (grade) penalty, and the student may also enter the Institute judicial process and be subject to such additional sanctions as: warning, probation, suspension, expulsion, and alternative actions as defined in the current Handbook of Student Rights and Responsibilities. If you have any question concerning this policy before submitting an assignment, please ask for clarification.
You get out of the course what you put into it

• **Spend time on the writing and presentations.**
  Don’t do this at the last minute.
  – Do more than one draft of everything
  – Have someone “red team” the assignments for feedback
  – Talk to Fran during office hours
  – Go to the RPI Center for Communication Practices

• Be prepared to **ask good questions and engage in class.** Read as many of the presentation articles as you can.

• **You do the effort,** Fran = scorekeeper. Focus on building skills as an outcome of this class.

• **Do something hard** that stretches you and for which you can’t take shortcuts in this course (and otherwise)

**Skills you can improve if you spend time on the assignments and participating in class:**
• Persuasive writing
• Informative writing
• Presentation style
• Collaboration and communication skills
• Thinking on your feet (questions, discussion)
• Critical thinking / evidence-based reasoning
Grading Detail – Presentations

Do 2 of these, 15 points each

• You are responsible for ensuring that you sign up for 2 during the semester

• Note that you may do these on Friday Sessions or designated Wednesday Sessions

• Presentation articles will be given in class and can be found on the class website

• A print-out of your slides (please include your name) should be handed in by the beginning of the class in which you will present.

Point Distribution

- Content: 4 pts
- Visuals: 4 pts
- Talk: 5 pts
- Q&A: 2 pts

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Grading Detail – Presentations

Presentation components
(10 minutes presentation + 5 minutes Q&A):

1. Summary and main points
   • What is the article about?
   • What are the main points/questions/issues described of the article?

2. What are the infrastructure and data issues?
   • How is data used to support the article’s point of view?
   • What data infrastructure, policy, practice, etc. is needed to be there for the data to play its role?

3. Discussion
   • What questions/issues arise from reading this article?

Note: You may need to read additional publications, websites for your presentations and reviews

Presentation Grading Metrics:

Talk (5 pts):
• Is the presentation compelling?
• Does the presentation tell an interesting story?
• Did the speaker use the timeframe effectively?

Visuals (4 pts):
• Are the slides well-organized and informative?
• Do the slides help tell the story?
• Are the slides visually interesting?
• Is the font readable, are images used to help convey the points, etc.?

Content (4 pts):
• Does the speaker understand the topic?
• Has the speaker leveraged appropriate additional materials as needed to support their presentation?

Q&A (2 pts):
• Is the speaker well prepared for questions? Can they respond to them articulately?