

Information Technology and Society

Syllabus, Spring 2017

Lectures: Tuesday/Friday 2-3 PM, LOW 4050

Recitations:

ITWS-01: TF 3-4 PM, LALLY 104 (TA: Garvey)

ITWS-02: TF 3-4 PM, CARNEG 208 (TA: Callahan)

IHSS-01: TF 4-5 PM, DARRIN 239 (TA: Garvey)

IHSS-02: TF 4-5 PM, LOW 3112 (TA: Callahan)

Professor: Dr. Jim Malazita (malazi@rpi.edu)

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Teaching Assistants:

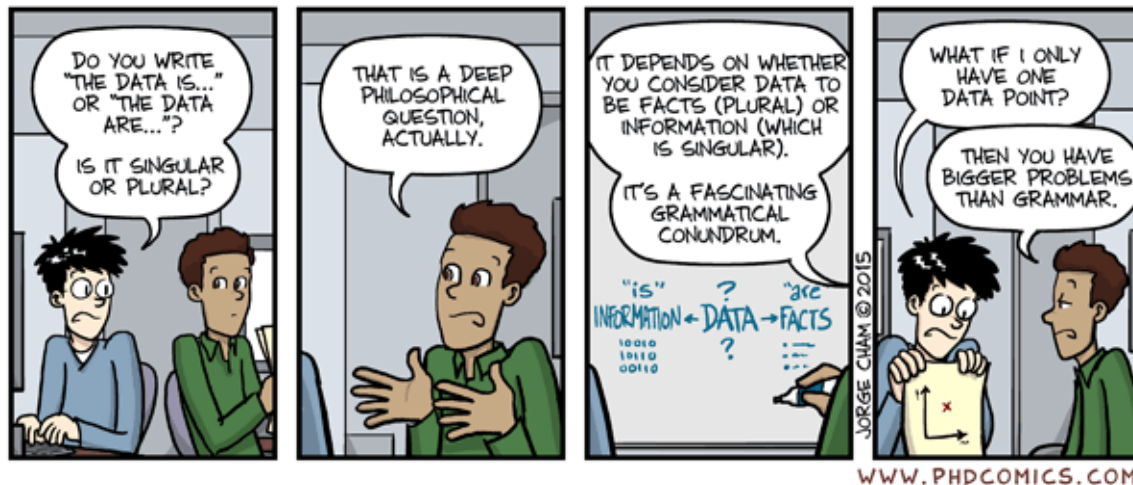
Colin Garvey (garvec@rpi.edu)

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Introduction:



“Anyway, those tickets, the old ones, they didn’t tell you where you were *going*, much less where you came from. He couldn’t remember seeing any dates on them, either, and there was certainly no mention of time. It was different now, of course. All this information. Archie wondered why that was.”

~Zadie Smith, from *White Teeth*

Businesses, science, sports teams, and political structures all rely on a constant flow of data in order to most efficiently generate revenue and knowledge. Web services like Google and Facebook are multi-billion dollar corporations that provide all of their content to their consumers free of charge, mostly because of the immense profit they make from aggregating and selling user-provided information and analytical tools to third parties. The social

stratification present well before contemporary computing technology further deepens when some groups of people have more access to information than others.

But what is information? Where did it come from? What does it do? How do we use it, and how **should** we use it?

In an effort to address these kinds of questions, students in this course will engage with ideas from social scientists, artists, and philosophers of information and technology through lectures, readings, and in-class open-discussions. In addition, students will also form teams to complete an end-of-semester project where insights gained in the class are applied to the design of a data collection system, and critical analysis of a data corpus.

Learning Outcomes:

Upon completion of this course, students should have the following sets of skills:

- 1.) The ability to speak competently about the underlying axiomatic structures of information and information technology, including non-linearity, affordances, and constraints
- 2.) A basic understanding of the multiple ways in which various types of power flow through information systems, from design and implementation, to gender politics, to resistance, to participatory culture
- 3.) An ability to consider the social, technological, and historical origins of the dominant Western worldviews of the role of technology, as well as alternatives and challenges to that worldview
- 4.) The ability to use these insights and understandings to analyze, organize, and criticize information systems and collections of data

Texts:

Readings will be posted on the course's Blackboard Page.

Assignments and Grade Breakdown:

"What is an Information System?" Paper: 15%

"Power through Technology" Paper: 15%

Final Project Dataset: 5%

Final Project Group Peer-Review Document: 5%

Final Project Presentation and Write-Up: 35%

-Final Presentation: 15%

-Group Write-up: 20%

-Individual Group Evaluation

Reading Write-Ups: 24%

Kindness of Jim's Heart: 1%

Project Descriptions:

All text portions of projects (papers, write-ups) must be submitted to the course's Blackboard page by midnight the night the assignment is due. Papers submitted must be in **.doc, .docx, or .rtf format**.

All Citations must use the Chicago Manual Of Style Guide:

(http://www.chicagomanualofstyle.org/tools_citationguide.html)

Paper 1: What is an Information System?

Length: 2000 Words

Due Date: Week 5, February 17th

In this paper, students will explore the ways in which information flows throughout technological systems. Students will be assigned an information system at random, chosen by the instructors. Students will then:

- 1: Briefly describe the information system, including its history and its current state
- 2: Referencing the readings, lectures, and discussions, justify why their information system *is* an information system
- 3: Describe how information moves between the system and a human user of the system
- 4: Describe how information interacts with other information systems
- 5: Describe how human users interact with one another through this information system

Paper 2: Power through Technology

Length: 2000 Words

Due Date: Week 10, March 24th

In this paper, students will analyze how power exerts itself through in an information system assigned to them by the instructors. In particular, students will explore, in-depth, ways in which an information system constrains and affords a type of social action, and the ways in which ethical and social normativity is enforced and coded by the system. Remember that information systems are meshes of people, things, and natural environments; while your analysis should be specific and in-depth, it should also not limit itself to mechanical affordances.

For example, an analysis of the pre-2012 Facebook interface profile creator could take note of the mechanical and economic implications of the radio button selector for gender—Facebook required its users to select one of male or female for gender, most likely to get “cleaner” data for demographic studies and marketing materials. In addition to this analysis, I would also expect students to think about the reinforcement of the Western gender binary (literally, in binary!), as well as the implicit coding of only two acceptable genders in society, and the relatively small amounts of social commentary on this design choice.

Students should reference 5 to 8 sources from social science, humanities, or philosophy peer-reviewed sources in their analyses. Students should use the JSTOR Database accessed through the RPI Library. The peer-reviewed sources should be a

combination of previous academic analysis of the student's information system (or, if unavailable, a similar system) as well as more broad theoretical lenses to help the student in their own analysis.

Final Project: Critical Data Analysis

Presentation and Write Up (6000 words) Due Date: Week 16, May 2nd, **Before the Start of Class**

Students will form teams of 4 to produce a data analytics document that observes the shapes, textures, and political structures of social media "movements" over time. Students should follow the tools and tutorials like (or similar to) those provided in this link:

<http://schoolofdata.org/harvesting-and-analyzing-tweets/>

Student groups will be assigned a Twitter #hashtag by their discussion leader. The #hashtag will represent an important political, ethical, or social moment currently trending. Students will use data analytics and mapping tools to delve into the networks of power, spaces, and rhetorical devices deployed in each movement, and will use social theory discussed in class, along with independent research, to break down and evaluate their findings. Student groups will present their findings and analysis during the last day of class in a 10-minute presentation with visual aids, with 3 minutes for Q+A.

Each student group will:

1: Run "live collections" of twitter data over the course of three weeks, **that will begin no later than March 31st**. Collected information must include, at a minimum, the twitter user, the content of the tweet, any hashtags in that content, time of posting, and location of posting (depending on the group's skill level, this may be done via geolocation tracking or via the self-reported location of the twitter user).

2: Using the collected data file, groups will perform a network analysis that shows where the centers and peripheries of speech are within the social media movement.

3: Perform a word network analysis and wordcloud analysis to determine what words were most commonly used, and what words were used in conjunction with one another.

4: Perform a data-mapping analysis to track the geo-location of each tweet, and the general locations from which the tweets were generated. Students will track both the total volume of tweets, as well as the movement and density of tweets over time.

5: The results of the network and data analysis will be due in recitation on April 21st. Student groups will work in teams to peer-review each other's data, and to brainstorm directions for critical data analysis. Recitation instructors will also weigh in. **Students will then submit the notes from their peer-reviews to LMS the night of the 21st.**

6: Student groups will then produce a 6000-word data analysis document that both illustrates the results of their data analytics, as well as offers hypotheses to explain them. Each data analytic image will be attached to the document as a separate appendix, and does not count towards the final word count of the paper, nor do references.

The paper will be broken into 5 sections: A 1000-word Introduction, three 1500-word analysis chapters, and a 500-word conclusion.

The Introduction will serve as a broad overview of the #hashtag, including a brief history of the popularity of the tag, as well as a brief outlining of its social importance.

Each chapter will illustrate and attempt to explain the findings. Students must reference 4-8 peer-reviewed, social scientific sources for each chapter. Further guidance will be given in class throughout the semester.

The conclusion will summarize the findings, outline their importance, and suggest directions for future research.

Reading Responses (Three One-Paragraph Responses Per Reading):

Every class meeting where a reading has been assigned, students will bring a handwritten response to the reading. Every reading will be accompanied by three assigned questions, which can be found in the description section of the reading assignment on LMS. Students must write, on a single page of loose-leaf, a one-paragraph response to each of those questions. These responses will be collected at the beginning of lecture, and will be used as the attendance measurement for the lecture portion of class. Responses handed in after the initial collection will be accepted, but will receive an attendance mark of "Late."

Every response will receive a grade of "Check," "Check Plus," or "Check Minus." Responses that demonstrate student engagement with the reading prior to class will receive a "Check." Responses that show lack of engagement with the reading (**engagement is not the same as understanding!**) will receive a "Check Minus." Responses that indicate a superior engagement with the reading, both in terms of the intellectual content and length of the response, will receive a "Check Plus." **A "Check" represents full credit for the assignment. A "Check Plus" effectively represents extra credit, and can theoretically raise a student's final grade above "100."**

Every reading assignment is worth 1 point. The grade breakdown per response is:

- Not Turning in a Response: 0 points, plus attendance penalty (unless registered with your recitation leader)
- Check-Minus: .5 Points
- Check: 1 Point
- Check Plus: 1.5 Points

No Laptop Policy:

Unless noted by the instructor or recitation leader, or unless the students provide a medical note from the Disability Office stating that they require their laptop for notetaking, students may not be on their laptop during lectures or during discussions. Students who are observed on their laptops during lecture or recitation will have a "late" penalty added to their class attendance for each infraction.

Schedule:

Week	Theme	Tuesday Class	Friday Class
Week 1, Jan 17 th and 20 th	Introduction	Syllabus overview, meet and greet	“The Garden of Forking Paths,” by Jorge Luis Borges
Week 2, Jan 24 th and 27 th	What is Information?	<i>Information: A History, a Theory, a Flood</i> , by James Gleick, Prologue and Chapter 1	<i>Information: A History, a Theory, a Flood</i> , by James Gleick, Chapter 7 Topics for Paper 1 Assigned
Week 3, Jan 31 st and Feb 3 rd	Cybernetics	NO CLASS	“The Cybernetic Hypothesis” by Alexander Galloway
Week 4, Feb 7 th and Feb 10 th	Reshaping Media	“The Medium is the Message,” by Marshall McLuhan	“As We May Think,” by Vannevar Bush
Week 5, Feb 14 th and 17 th	Power and Technology	“Do Artifacts have Politics?” by Langdon Winner	Paper 1 Due “Can an Algorithm be Agonistic?” by Kate Crawford
Week 6, February 21 st and 24 th	Information Production	NO CLASS (Follow Monday’s Class Schedule)	Topics for Paper 2 Assigned “Cognitive Capitalism: Electronic Arts,” by Dyer-Witheford and De Peuter
Week 7, February 28 th and March 3 rd	Information Colonization	“African Influences in Cybernetics” by Ron Eglash	“The Myth of Analog Africa,” by Delinda Collier (pgs. 73-95)
Week 8, March 7 th and 10 th	Critical Data Studies	“Critical Questions for Big Data,” by danah boyd and Kate Crawford	“The Nice Thing about Context is that Everyone Has it,” by Nick Seaver
Week 9, March 14 th and 17 th	Spring Break: NO CLASSES		
Week 10, March 21 st and 24 th	Intersectionality and Technology	“Digital Dead End,” by Eubanks	Paper 2 Due

			Final Project #Hashtags Assigned “DIY Citizenship” by Christina Dunbar-Hester
Week 11, March 28th and 31st	Intersectionality and Technology	“Masculine Culture,” by Judy Wajcman	#Hashtag Data Collection must begin on or before March 31st “Practicing at Home,” by Ellen Seitier
Week 12, April 4th and 7th	Social and Networked Media	“Algorithmic Harms Beyond Facebook and Google,” by Zeynep Tufekci	“Alone Together,” by danah boyd
Week 13, April 11th and 14th	Information Geographies	“The Panopticon’s Changing Geography,” by Dobson and Fisher	“A Manifesto for Web Science,” by Halford, et. al.
Week 14, April 18th and 21st	The Technical and the Historical	“Tools, Minds, and Machines,” by Tim Ingold	Data Geographies Due to TAs in Recitation Group Peer-Review and TA Feedback writeup due to LMS by 11:59 PM after Recitation
Week 15, April 25th and 28th	AI Futures	“Why Heideggerian AI Failed,” by Richard Dreyfus	“Some Moral and Technical Consequences of Automation,” by Norbert Weiner AND “What your Computer Can’t Know,” by John Searle
Week 16, May 2nd	Final Presentations	Final Presentations + Final Write-up due	Study Days: NO CLASS

Attendance:

Students are expected always to be present during class and recitations. Excellence in

submitted work will not make up for delinquency in attendance. **More than three unexcused absences will result in a lowering of your final course grade by one mark. More than eight absences will result in the failure of the course. Three late arrivals will equal one missed class.** If you must miss a class, assignments are due before the class period begins.

Excusable absences include illness, family emergencies, and scheduled Rensselaer athletic events. All excused absences must be delivered to the professor via the Office of Student Life.

Attendance in lecture will be recorded via the turning in of the daily reading responses. Attendance in recitation will be taken orally by recitation leaders.

Academic Integrity:

Student-teacher relationships should be built on trust. Students should be able to trust that teachers have made responsible decisions about the structure and content of the courses they teach, and teachers must trust that the assignments students turn in are their own. Acts that violate this trust undermine the educational enterprise and contradict the very reason for your being at Rensselaer. *The Rensselaer Handbook of Student Rights and Responsibilities* defines various forms of academic dishonesty and procedures for responding to them. The policies laid out in the *Handbook* are intended to maintain a community of trust and will be strictly enforced. Please review these policies.

For this course, the following penalties will apply:

- Significant acts of plagiarism (e.g., text copied verbatim from an unidentified source): Failure of the course and a written judgment in the student's official record
- Minor acts of plagiarism (e.g., referencing the findings of others without appropriate citations): Failure of the assignment, plus reduction of final course grade by one letter grade
- Other acts of academic dishonesty: Penalties range from a warning to reduction of final grade by one letter grade to failure of the course, depending on the severity of the violation as determined by the instructor. As is evident above, penalties for plagiarism are significant. All direct use of another person's words must be placed inside quotation marks. You must also indicate where you paraphrase another's work and where you borrow another's specific ideas or interpretations. If you have questions regarding proper citation practices, see the instructor for clarification *before* the assignment is submitted. While collaboration is encouraged throughout the course, others cannot do work for you. All assignment activities must be carried out by the individual or team members submitting the assignment for a grade. Other people may show you *how* to do something (say, when using computer software), but you must follow up by doing the work yourself. *The Rensselaer Handbook* provides specific procedures by which a student may appeal a grade. You should speak to the professor before initiating an appeal. If this does not lead to satisfactory resolution, you have the option of appealing your grade by writing to the head of the STS Department no later than 10 days after your grade has been posted.