

Intensive Freshman Seminar Syllabus Outline

Fall 2021

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Course title: Algorithms in Culture

Introduction

I'm an Assistant Professor and head up the Discovery and User Experience department for IU Libraries. I spend my days managing the web platforms that mediate IU students' research experiences. I have previously taught information literacies, specifically digital literacy, in academic and public libraries. Algorithms play an outsized role in our daily lives yet continue to be misunderstood by the general public. This course seeks to equip students, who need no previous background in computer science or coding, with vocabulary and tools to demystify artificial intelligence and understand how algorithms heighten existing inequalities in society.

Course Description

This course introduces students to a multidisciplinary approach for understanding algorithms and how they impact day-to-day life. Specific algorithms analyzed include the Google PageRank algorithm, the Google autocomplete algorithm, and Facebook's advertising algorithms. We'll read scholarly and news publications that analyze algorithms through cultural/media studies, Black feminism, information and library science, and psychology. Given my background as a librarian, the content will be considered through various types of literacies including metaliteracy, digital literacy, and algorithmic awareness.

No computer science background is necessary to take this course, in fact, we'll start off by learning the fundamentals of what artificial intelligence is, a history of the internet, and the difference between hardware and software. Understanding the basic functions of computer science, and possessing the ability to explain foundational concepts of technology to a variety of audiences, is a key goal of this course. We'll use this new knowledge to identify technochauvinism (the belief that technology is always the solution) in current events.

And we won't just study the role algorithms play online, we'll also contribute to the conversation. After learning how algorithms impact the creation and dissemination of content online, students will create and re-design online content and platforms to combat the inequalities algorithms magnify.

Assignments include re-designing popular applications and websites using techniques from ["humane technology"](#) and creating content on Wikipedia to [combat algorithmic oppression by making visible](#) the knowledge of marginalized communities who are underrepresented online. To prepare for the Wikipedia writing assignment, students will complete assignments about how to conduct research using academic databases as well as how to quote, summarize, paraphrase, and cite their sources.

Some very specific questions that exemplify this course's scope of interest:

1. What was white supremacist Dylann Roof's Google search history in the months leading up to his killing of eight black people at Emanuel African Methodist Church in Charleston, SC?
2. Why do most voice assistants have feminine names? (Siri, Alexis, Cortana)?
3. Why is it impossible for algorithms that measure a criminal's risk of reoffending to treat black and white defendants equally?

Required texts

Students will be required to purchase *Artificial Unintelligence* by Meredith Broussard. All other readings will be available through the library or the course portal.

Assignments

Examples of assignments

- Knowledge of key concepts will be tested in daily reading quizzes and a cumulative final exam.
- Contributing content to Wikipedia using assignment guidelines from IU's Information Literacy Toolkit and Whose Knowledge. Whose Knowledge is an organization led by academics and activists who campaign to ["center the knowledge of marginalized communities on the internet"](#).
- Taking sections of academic and non-academic works and properly summarizing/paraphrasing/quoting them as well as citing them using ALA.
- As a content strategist and UX designer, I utilize design thinking in my work and will teach students games/activities from the realm of design thinking to help us consider real-world challenges in new, innovative ways.
- Students will work in small groups to redesign a popular application interface using humane technology and algorithmic awareness that will be due at the end of the course. In an accompanying individual writing assignment, they'll have to connect their group's decision decisions with key concepts discussed in class.

Course schedule

Before class every day students will have to complete a quiz on the reading material assigned for that day. We'll start class by going over the quiz to cement key concepts. This will be followed by a lecture that builds on the day's reading material and then a discussion or activity. During a long lunch break, students will be assigned a short reading or activity that will be the basis of afternoon class. Some days will conclude with a free-write reflection of the day's material and activities.

Merits of the course

1. **Introduction to academic libraries and librarians.** Library classification systems inspired Larry Page's Google PageRank algorithm and in one text we will read that libraries are considered the intellectual predecessor of search engines. We will compare the societal function of libraries and Google and use this conversation to introduce students to IU Libraries' services, spaces, and resources. Given that I am a librarian and based in Wells Library, this class will likely take

multiple trips to libraries on campus to utilize various resources. Building a relationship with me, a librarian, early in their time at IU will hopefully increase their likelihood they will utilize library experts, resources, and services to enhance the quality of their work and life at IU.

2. **Demystify scholarly writing and literature.** By reading and analyzing a variety of information sources using multiple information literacy frameworks, students will understand how to read across disciplines and identify bias. This will also help introduce them to reading scholarly works and contrast it with writing online for a resource like Wikipedia. This is perfect preparation for college-level research and writing.
3. **Create more critical, discerning consumers of online information.** Algorithms play an outsized role in our lives and magnify many of society's inequalities. By understanding the mechanics behind how their online experiences are impacted by artificial intelligence, students who take this course will be better equipped to critically analyze and evaluate the information online that impacts their day-to-day lives.
4. **Read writings by women and people of color and highlight the inequalities marginalized groups face as a result of new technologies.** Studying algorithms is an excellent introduction to Black Feminism, intersectionality, and the systemic mechanisms that shape students' own power and privilege online. Through case studies in technochauvinism, students will learn how to critically examine the impact of technology in society. A majority of the readings assigned in this course are written by women, many of whom are women of color.

Tentative Syllabus

Course title: Algorithms in Culture

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Course overview

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Course goals and learning outcomes

1. Understand the role of algorithms in culture.
 - a. Define internet, hardware, software, and algorithm.
 - b. Identify key algorithms that influence daily online activities.

- c. Describe the difference between traditional algorithms, machine-learning algorithms, and other AI.
 - d. Analyze contemporary examples of algorithms that magnify bias and oppression.
 - e. Learn and utilize design concepts of humane technology.
2. Increase comfort reading and analyzing different mediums including news and peer-reviewed publications from different disciplines.
 - a. Use techniques like RAADCAB, CRAAP, and fact-checking to analyze information online for the use of personal consumption or for school projects.
 - b. Find sources online that demonstrate a range of views on a subject.
 - c. Identify false, misleading, or poorly-researched information online.
3. Become a better writer of web content and prepare to engage in more advanced scholarly writing.
 - a. Write properly sourced content in Wikipedia using quotations, summarizing, and paraphrasing.
 - b. Summarize and properly cite sources in APA format in Wikipedia.
 - c. Learn basic rules of writing for the web including proper link formation, web accessibility, and document organization.

Course resources

Students are required to purchase *Artificial Unintelligence* by Meredith Broussard. All other readings and other course information will be available through the IU Canvas website (<http://canvas.iu.edu>).

Assignments

Daily reading quizzes. Before each day of class, students complete a reading quiz related to the day's assigned reading. We'll go over answers in class to kick the day off and identify which concepts need a deep dive.

Participation. This includes attendance, your participation in the daily activities, and your contribution to class discussion.

Daily assignments. Miscellaneous assignments assigned to accompany readings and deepen your engagement with course material.

Wikipedia assignment. This will be broken up into a series of assignments that will include picking an appropriate existing article that needs additional content and citations, picking proper academic and non-academic sources to cite and incorporate into the article, and then finally your actual additions to that article.

Humane technology group project. In a small group, you will redesign a popular application (e.g. Facebook, Snapchat, Instagram, Apple News) using humane technology design. You will be evaluated individually and as a group for the ability to analyze the application's manipulation of Human Sensitivities and the ability to communicate a cohesive redesign to minimize those manipulations and create a good user experience.

Final exam. A selection of questions from daily reading quizzes. Mainly short/long form answers requiring full sentences.

Grading

Daily quizzes on readings 10%

Participation 15%

Daily assignments 20%

Humane technology group project 20%

Wikipedia assignment 20%

Final exam 15%

Grade	%	What it means
A	100-90	Superlative. Addresses all assignment requirements in a thoughtful, engaging way. Impeccable attention to detail to ideas and in writing about them. Contributes meaningful to the scholarly conversation of the course.
B	89-80	Excellent work. Clearly addresses assignment requirements. Almost error-free.
C	79-70	Adequately addresses assignment requirements. Writing is readable overall with occasional straying from purpose. Mostly error free.
D	69-60	Does not meet some of the basic assignment requirements. Addresses some of issues/ideas but without nuance or insight.
F	Everything else	Does not meet basic assignment requirements. Doesn't address issues or ideas central to assignment. Lack of attention to style, correctness, citation, and punctuation.