SCTS 205 ARTIFICIAL INTELLIGENCE & SOCIETY
(Winter 2019) (4 credits)

Instructor: Vincent Duclos, Ph.D.
Office Hours: Tuesday, 11:00 AM - 2:00 PM, and by appointment
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Meeting hours: Tuesdays and Thursdays, 9:30 - 10:50 AM
Term: Winter

COURSE DESCRIPTION

Intelligent machines, we often hear, are soon to become smarter than humans. They are to radically transform society. This course will examine artificial intelligence (AI) and related digital worlds from a science and technology studies (STS) perspective. Whether considered as a threat or celebrated for the promises it holds, AI has become the object of heated debates in recent years. In this course, we will challenge the myth of human life taken over by machines. After all, humans and machines have been entangled and have evolved together since time immemorial – examples including techniques such as maps, clocks, recording, computed calculation, and so forth. This being said, AI remains an important sociocultural phenomenon. This course will examine the origins of AI as well as the social orders and cultural practices involved in recent developments. It will explore its potential effects on society, the human psyche and the medical engineering of the body. Finally, the ethical and political implications of AI will be examined. Specific topics discussed will include: virtual words; the uploading of brains into computers; golems, monsters and posthumans; dreams of immortality; smartness and intelligence; bots and online contagion; machine learning, its impact and limits.

LEARNING OUTCOMES

If you complete this course successfully, you will learn to:

- Develop an understanding of STS approaches to artificial intelligence and related digital environments;
- Identify social orders and cultural assumptions that underlie recent advances in artificial intelligence;
- Situate artificial intelligence in relation to wider discussions of technology and humanity;
- Document the origins of artificial intelligence, computed automation and human-machine interaction;
- Recognize the primary sociocultural challenges associated with artificial intelligence and related digital environments.

REQUIRED READINGS (to be posted on Blackboard)

Bedini, Sylvio, "The Role of Automata in the History of Technology", *Technology and Culture*, No. 4, Spring 1964.

Bell, Genevieve, "The Secret Life of Big Data," in *Data, Now Bigger and Better*! Prickly Paradigm Press, pp. 9-26.

Bensaude-Vincent, B. & W.R. Newman. "Introduction: The Artificial and the Natural: State of the Problem", in *The Artificial and the Natural: An Evolving Polarity*. MIT Press, 2007, pp. 1-19.

Bohannon, John, "The synthetic therapist," *Science*, Vol. 349, Issue 6245, 17 Jul 2015, pp. 250-251

Breazeal, Cynthia. "Socially Intelligent Robots," *Interactions*, 12: 19-22, 2005.

Callon, Michel et al. (eds)(2001), "Hybrid Forums," *Acting in an Uncertain World*: *An Essay on Technical Democracy*. Cambridge and London: The MIT Press.

Carr, Nicholas (1), "A Brutal Intelligence: AI, Chess, and the Human Mind," *Los Angeles Review of Books*, 29 June 2017.

Carr, Nicholas (2), "These Are Not the Robots We Were Promise", *The New York Times*, 9 September 2017.

Daston, Lorraine, "Nature by design." In *Picturing science, producing art*. Routledge, 1998. Pp. 232-253.

Galison, Peter, "The ontology of the enemy: Norbert Wiener and the Cybernetic Vision", *Critical Inquiry*, 21, 1994: 228-266

Gillespie, Tarleton (2011). "Can an Algorithm Be Wrong? Twitter Trends, the Specter of Censorship, and Our Faith in the Algorithms around Us." *Culture Digitally*, http://culturedigitally.org/2011/10/can-an-algorithm-be-wrong/.

Haraway, Donna (1990). "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late 20th Century," *In* Nicholson, L.J. (ed.) *Feminism/Postmodernism*. New York and London : Routledge, pp. 190-233.

Highfield, Roger. "This AI could hold the key to decoding human intelligence," *Wired*, 11 September 2017.

Holt, Jim, "Code-Breaker: The life and death of Alan Turing", *New Yorker*, February 6, 2006.

Keim, Brandon, “Can a Computer Fall in Love if It Doesn't Have a Body?“, *Wired*, 28 February 2014.

Jones, Raya A. "What Makes a Robot ‘Social’?." *Social Studies of Science* 47, no. 4 (2017/08/01 2017): 556-79.

La Metrie, Julien Offrey de, “Man a Machine,” in *Machine Man and Other Writings*, Cambridge University Press, pp. 1-40.

Lewis, Paul, “Our minds can be hijacked': the tech insiders who fear a smartphone dystopia,” The Guardian, 6 october 2017.

Lock,Marget & Palsson, Gisli (2016). “Movable Concepts: Nature and Nurture,” in *Can Science Resolve the Nature/Nurture Debate?* Cambridge, Polity, 13-41.

Marcus, Gary, "What Comes After the Turing Test," *New Yorker*, June 9, 2014.

Metz, Cade, “Teaching A.I. Systems to Behave Themselves”, *The New York Times*, 13 October 2017.

Rees, Tobias. “The Human and the Machine: What Most Commentators Get Wrong About A.I.,” *Huffington Post*, 5 December 2016.

Searle, John, “What Your Computer Can’t Know”, *The New York Review of Books*, 9 October 2014.

Sloterdijk, Peter. “Controversial Philosopher Says Man And Machine Will Fuse Into One Being. An interview with philosopher Peter Sloterdijk,” *Huffington Post*, 10 September 2015.

Simon Schaffer, “Enlightened Automata” in *The Sciences in Enlightened Europe*, edited by William Clark, Jan Golinski, and Schaffer, Chicago University Press, 1999.

Suchman, Lucy. "Subject Objects." *Feminist Theory* 12, no. 2 (2011/08/01): 119-45.

Turkle, Sherry, “Stop Googling, Let’s Talk,” *The New York Times*, 26 September 2015.

Weatherby, Leif. “The Cybernetic Humanities,” *Los Angeles Review of Books*, 2 January 2017.

COURSE EVALUATION

The primary components of your course grade are as follows:

1. Class participation 10%
2. Reading assignments 25%
3. Take-home midterm exam 25%

4. Research paper 40%

- **Grading Scale:**

• A+	97-100	C+	77-79
• A	93-96	C	73-76
• A-	90-92	C-	70-72
• B+	87-89	D+	67-69
• B	83-86	D	60-66
• B-	80-82	F	<60

ASSIGNMENTS/EXAMS

1. Class Participation (10%)

Attendance is very important to your success in this class. Attendance will be taken each class. For each class you miss after the first time, you will lose 1% point for participation. Participation means being prepared to complete the readings by the date they were assigned, and be prepared to talk about them. I expect you to participate in class discussions and ask questions about the material.

2. Reading Assignments (25%)

Every student will have to hand in 5 reading assignments over the course of the quarter. Reading assignments are written responses to a given week's assigned texts. Responses should be more or less one single-spaced page or 400 words in length. Your response should not be a summary of the entire set of readings. Rather, choose a specific theme or question to guide you in writing your critical response. Your response may also engage with material covered in class, although the main focus needs to be on texts read for the week. These assignments are a way to practice your reading and writing skills. What we will be evaluated is the general clarity of your response, your capacity at identifying the main arguments in the texts, and your ability at linking the texts to broader issues either discussed in class or which are important to you. Your response must be turned in, on 5 weeks of your choosing, in class. Each written response will be 5% of your final grade.

3. Take-home midterm exam (25%)

There will be a midterm exam due on week 6. The exam will cover required readings, lectures and films through week 5. It will be comprised of essay questions. I will hand out the exam one week before the due date. Late submissions will be penalized by a lower grade.

4. Research paper (40%)

You will have to write a research paper (10-12 pages, double space, Times New Roman 12). While the range of topics is large, it should be related to material discussed in class, and include relevant literature. The bibliography should include at least 5 references. You are strongly invited to consult with the me 3-4 weeks before the due date about the topic of their essay. You may also submit a preliminary bibliography, and meet me during office hours. The deadline for submitting your final essay is due during finals week. Late submissions will be penalized by a lower grade.

COURSE POLICIES

Attendance
Attendance will be taken each class. For each class you miss after the first time, you will lose 1% point for participation. The only exceptions to the one absence rule are religious holidays, or illnesses documented by a health professional.

Communication Policy
I will make every effort to respond to your email questions promptly during normal work hours. You can generally expect a reply within 24 hours on week days. Do not hesitate to write to me. However, please try to keep emails as clear and concise as possible.

Plagiarism/Academic Honesty
All your work must be your own. That means that you must *always* cite source material, including information found online. Put simply, you are not allowed to copy and paste chunks of texts from the Web into your exams or papers without citing the source. I *will* pursue disciplinary action for any dishonesty, cheating, plagiarism or other academic integrity violation. Students who engage in any type of academic misconduct will fail the course. For more information about Drexel's policies and procedures on academic integrity, plagiarism and cheating, see the following websites:

Drexel's policy on Academic Integrity: http://drexel.edu/provost/policies/academic-integrity/
Drexel's Student Code of Conduct:
http://drexel.edu/studentaffairs/community_standards/studentHandbook/general_information/code_of_conduct
Details on the disciplinary process in cases of plagiarism:
http://drexel.edu/studentaffairs/community_standards/facultystaff/integrity/

CLASSROOM BEHAVIOR
The use of electronic devices in class should remain limited. If you need a laptop or tablet for taking notes, that's fine. However, please do not use them for any purpose unrelated to our class. You are expected to participate actively in class. If you are distracted by your computer or tablet (or are distracting others) I will ask that you refrain from using it in class. All devices should be silenced. Cell phones should be put away, and texting, email or other social media activity is not permitted. Anyone who is observed texting during class will be asked to leave. You are also not allowed to take pictures or video during class.

ADD, DROP AND WITHDRAWAL POLICIES

- Please review Drexel's add and drop policies at:
  http://drexel.edu/provost/policies/course-add-drop/
- The course **withdrawal** deadline is in week 7. You will have received some graded work prior to this deadline. If you have any questions about your progress at any time of the term, please contact me. If you choose to withdraw, a "W" will be recorded in your transcript:
  See http://drexel.edu/provost/policies/course-withdrawal

DISABILITY ACCOMMODATIONS

It is the University's policy to provide a learning environment that provides all students with the opportunity to realize their full potential. To this end, the goal of the Office of Disability Resources ("ODR") is to assist students with disabilities in becoming self-sufficient, independent, and successful members of the University's community and to provide students with disabilities with equal opportunity of access to University courses, programs, facilities, services, and activities. Students seeking reasonable accommodations for their disabilities must first register with ODR. The staff of ODR will work closely with students to review medical documentation, assess their individual needs, and link them with the services necessary to ensure them the opportunity to participate fully in college life. The Office of Disability Resources website can be found at **http://www.drexel.edu/oed/disabilityResources/Overview/**

Course Schedule: The instructor reserves the right to make adjustments to this schedule; you will receive an email to your Drexel account or a handout in class if any changes are made. Important due dates are indicated in **BOLD.**

Date	Topics/Readings	Assignments/Due
Week 1	**Introduction to the Class** Highfield; Lewis; Rees; Sloterdijk	
Week 2	**How Artificial is AI?** Bensaude-Vincent & Newman; Daston	
Week 3	**Automation: the Human Machine** La Metrie; Schaffer	
Week 4	**Cybernetics, Communication & Control** Galison; Weatherby	
Week 5	**Deep Learning, Deep Thinking** Carr[1]; Holt; Marcus; Searle	
Week 6	**Sociable Machines** Haraway; Suchman	Take-home exam due

Week 7	**In Love with a Robot** Bohannon; Breazeal; Keim	
Week 8	**A World of (Big) Data** Bell; Gillespie	
Week 9	**Artificial Life & Medicine** Lock & Palsson	
Week 10	**Futures of AI** Callon; Carr[2]; Metz; Turkle	Research paper due following week