En 100: Artificial life Jocelyn Holland Office: Dabney 301a Email: jholland@caltech.edu

(This is a preliminary syllabus - there might be slight changes between now and the first meeting, but they will not amount to an increase in workload)

Course overview:

The goal of this course is to examine relations between humans and automata from different perspectives. We will start by looking at early visions of the automaton in literature and mythology as well as how early technological innovations tried to make those visions a reality. We then move into more modern literary experiments, where the distinction between the human and the automaton becomes more difficult to define.

One of the objectives of this course is for you to develop your own thoughts about some of the big questions surrounding automata, particularly those that exhibit extremely lifelike human behavior: what is it that makes them similar to or different from us, and to what degree do we feel compelled to treat them as 'humanlike' if not precisely human?

In the second half of the quarter we shift our attention from automata in general to robots in particular by immersing ourselves in two literary worlds that describes a technological future where humans and machines interact in surprising ways. These texts will help us address questions such as:

- at what stage of technological development, if any, are we obligated to treat robots ethically?
- what does it mean to be "transhuman" and how does this term force us to reconsider what it means to be human?
- how does the current state of robotics and AI research today compare with the fictional visions we are studying?

Course requirements:

- In-class attendance
- Perusall comments (this is a collaborative pdf annotation app)
- Homework assignments (two, around 1,000 words each)
- Final project (individual or collaborative; this will have a presentation and essay component)

Note: We will be using a grading contract, where your grade is scaled according to work completed.

Early Automata

April 4	Introduction: the ancient art of automata
April 6	The original fembots: the "Pygmalion" and "Pandora" myths
April 11	Guest discussion with Cristiano Zanetti on Renaissance-era Automata
	Eighteenth-/Nineteenth-century Man (and Animal) Machines
April 13	La Mettrie, The Man-Machine (excerpt)

April 18	Heinrich von Kleist, "The Marionette Theater" (1810)
April 20	Hoffmann, "The Sandman" (1816)
April 25	Hoffmann, "The Sandman" (1816)
April 27	Edgar Allen Poe, "Maelzel's chess player"
	Imitation Games
May 2	Alan Turing, "Computing Machinery and Intelligence"
May 4	Philip K. Dick, Do Androids Dream of Electric Sheep?
May 9	Do Androids Dream of Electric Sheep?
May 11	Do Androids Dream of Electric Sheep?
May 16	Martha Wells, Artificial Condition (The Murderbot Diaries)
May 18	Artificial Condition
May 23	Artificial Condition
May 25	Film discussion: ex machina
May 30	In-class project work
June 1	Seniors present their projects
	[Seniors are finished!]
June 6	Non-seniors present their projects

June 8 Writing workshop + course review