Evolution, as it is understood by biologists and other scientists, refers to the process of generational change in the inherited characteristics of life forms. But it is also a powerful idea with ongoing significance for debates about human nature and the human relationship to nonhuman life and technology. Since its development in the nineteenth century, the idea of evolution has motivated countless writers, scientists, philosophers, and artists to imagine and advocate for diverse visions of the future of human life on earth and beyond. Through materials as diverse as Darwin’s own account of his formulation of the theory of evolution to science fiction films like Gattaca, we will consider a variety of engagements with evolutionary thought ranging from the construction of political utopias to programs in genetic manipulation and biohacking to efforts at preserving the past and future of endangered species. In so doing, we will analyze the history of evolutionary speculation, consider the ethical values associated with the various scientific, social, and cultural projects it has inspired, and develop the critical skills needed to tackle questions raised by developments in science and technology.
**STUDENT LEARNING OUTCOMES—**

- Improved understanding of the ongoing social impact of evolutionary theory, including contemporary ethical and political debates about the future evolution of humans in tandem with biotechnology
- Improved understanding of the function of scientific ideas in shaping politics, culture, and society, as well as a new appreciation for the way that literature, social theory, and the arts help shape the meaning and development of science
- Improved ability to critically assess developments in science and technology in relation to ideas about justice, ethics, and possible futures
- Introduction to key concepts in writing pedagogy across the curriculum
- Improved skills in the written and oral presentation of ideas and intellectual debate
- Improved skills in collaborative project management

**ASSESSMENT RUBRIC—**

Grades will be calculated based on the following percentages:

- Participation and engagement — 30%
- Reflection journal — 30%
- Group projects and presentations — 20%
- Final paper — 20%

**ASSIGNMENTS—**

**Resonance report:** Each student will develop a resonance report over the course of the class. This will be a Google doc in which students record thoughts and impressions of our course material and discussions throughout the summer session, focusing in particular on what resonates for them intellectually, creatively, or personally. Some posts will take the form of free-writes, while others will ask students to put into practice specific writing conventions that we cover in class: academic research, close reading, paraphrase, argument styles (e.g. position paper, compare-and-contrast, literary/rhetorical analysis). Students will write 2-3 resonance reports per week and we will devote some of our class time to writing them.
**Group projects:** Each week, students will collaborate with their peers in small groups in order to produce a written project that they will present to the class. I will hand out the group assignment for each week on Monday or Tuesday, and students will present their projects on Friday. The tentative prompts for each week’s project are as follows:

- **Week 1:** Imagine you are a team of anthropologists exploring a new environment on an extraterrestrial planet. Describe the environment and some of the life forms you encounter (individuals, groups, symbiotic organisms, etc.). Include illustrations or “photographs,” notes on nutritive and reproductive behavior, social organization, and interactions with other life forms.

- **Week 2:** Building on your work for last week’s group project assignment, write up a report in which you surmise about the evolutionary history of the planet based on your observations. Include, in your report, some speculation about how the planet may develop over a) the next 100,000 years and b) the next one million years.

- **Week 3:** Write a proposal in which you advocate for the development of an advancement in biotechnology with the potential for widespread application. This could be a prosthetic, a drug, a program in genetic engineering, or something else. Describe the possible impact and benefits for your innovation, and then take stock of ethical objections, possibilities for misuse, or unexpected social consequences. In arguing for your innovation, offer solutions or counterarguments to these objections and problematic future scenarios.

**Final paper:** Students will write a 3-5 page paper expanding on one or more of the resonance reports. Students will select one of the argumentation styles they have practiced in the class and work with at least three pieces of evidence.

**Sample in-class activities—**

**Guest speakers—**

- Week 1, day 4: Hilary Strang (Senior Associate Instructional Professor, English, University of Chicago) on feminist science fiction
- Week 2, day 4: Maria Lux (author of *Famous Monsters*, 2019) on species extinction and the graphic novel
• Week 3, day 1: Andrew Pilsch (author of *Transhumanism: Evolutionary Futurism and the Human Technologies of Utopia*, 2017) on transhumanism
• Week 3, day 4: Samantha Thomas, MD on genetic engineering and bioethics

**Class trip—**

• The Field Museum of Natural History
  ○ Exhibits of interest: *Griffin Halls of Evolving Planet, SUE the T.Rex, Elizabeth Morse Genius Hall of Dinosaurs, Nature Walk & Messages from the Wilderness, Abbott Hall of Conservation: Restoring Earth*

**Sample exercises—**

• Weeks 1-3 mini-lectures and in-class exercises. “Writing Like a College Student”: writing instruction based on the University of Chicago Writing Program’s approach to writing pedagogy. Over the course of the class, students will learn how to generate claims, use evidence and reasons, problem construction, and argumentative stakes.

• Week 1, day 4 in-class exercise. “Critical Dystopia- and Utopia-Building”: Drawing on Wells’s *The Time Machine* and Gilman’s *Herland*, design either an evolutionary dystopia or a utopia. Discuss the features of your dystopian or utopian world as they have evolved from features of our present world, including social structures, science and technology, politics, economic organization, and so on.

• Week 2, day 4 mini-lecture and in-class exercise. “Evolution’s Visual Rhetoric”: (1) mini-lecture on visual and media analysis, including a handout with a glossary of terms and useful vocabulary for talking about images; (2) as a class, view and discuss media and pop culture representations around evolution and the extinction of life, focusing on the visual rhetoric of each representation (i.e. tropes, embedded values, etc.).

• Week 3, day 2 in-class exercise. “Debating Transhumanism”: Half the class will generate arguments in favor of the transhumanist position of prioritizing biotechnology as central to human flourishing and ongoing social evolution; the other half will generate arguments against transhumanism. We will stage a debate in which each side strives to convince the other.
READING LIST—
(including sample exercises and assignments)

WEEK 1—Speculative evolution and experiments in deep time

Week 1 group project assignment: Imagine you are a team of anthropologists exploring a new environment on an extraterrestrial planet. Describe the environment and some of the life forms you encounter (individuals, groups, symbiotic organisms, etc.). Include illustrations or “photographs,” notes on nutritive and reproductive behavior, social organization, and interactions with other life forms.

Day 1— No reading
- Welcome, introductions, syllabus
- Mini-lecture: How to think about evolution as an (evolving) idea
- In-class reading: selection from Jeff Vandermeer, Annihilation (2014)

In-class mini-lecture and exercise. Writing like a college student (I): Generating claims

Day 2—Evolutionary exploration
- Charles Darwin, selection from The Voyage of the Beagle (1839)
- Wayne Douglas Barlowe, Expedition: Being an Account in Words and Artwork of the 2358 A.D. Voyage to Darwin IV (1990)

Day 3—Human evolution across the millennia
- H.G. Wells, selection from The Time Machine (1895)
- C.S. Koseman, selection from All Tomorrows: A Billion Year Chronicle of the Myriad Species and Varying Fortunes of Man (2006)
- In-class: selection from Alien Planet (2005, dir. Pierre de Lespinois)

Day 4—Experiments in feminist evolutionary history
- Guest speaker: Hilary Strang (Senior Associate Instructional Professor, English, University of Chicago) on feminist science fiction
- Charlotte Perkins Gilman, selection from Herland (1915)
● Joan Slonczewski, selection from *A Door into Ocean* (1986)

**In-class exercise.** Critical dystopia- and utopia-building: Drawing on Wells’s *The Time Machine* and Gilman’s *Herland*, design either an evolutionary dystopia or a utopia. Discuss the features of your dystopian or utopian world as they have evolved from features of our present world, including social structures, science and technology, politics, economic organization, and so on.

Day 5—In-class presentations on group projects

**WEEK 2—Fossils, proto-humans, and endlings: reconstructing species histories**

**Week 2 group project assignment:** Building on your work for last week’s group project assignment, write a report in which you speculate about the evolutionary history of the planet based on your observations of its present life. Include, in your report, some speculation about how the planet may develop over a) the next 100,000 years and b) the next one million years.

Day 1—Reconstructing social evolution
● David Graeber and David Wengrow, selection from *The Dawn of Everything* (2021)
● Peter Kropotkin, selection from *Mutual Aid: A Factor of Evolution* (1902)
● Richard Dawkins, selection from *The Selfish Gene* (1976)

**In-class mini-lecture and exercise.** Writing like a college student (II): Using evidence and reasons

Day 2—Imagining the prehuman past
● Jack London, selection from *Before Adam* (1907)
● *Prehistoric Planet* (Apple, 2022)

Day 3—**Class trip:** The Field Museum of Natural History
● Roy Plotnick, “This Land is Your Land, Your Fossil is My Fossil” (ch.16 in *Explorers of...*
Deep Time: Paleontologists and the History of Life, 2022)

Day 4—Evolution and extinction

**Guest speaker:** Maria Lux (author of *Famous Monsters*, 2019) on species extinction and the graphic novel


**Mini-lecture and in-class exercise.** Evolution’s visual rhetoric: (1) mini-lecture on visual and media analysis, including a handout with a glossary of terms and useful vocabulary for talking about images; (2) as a class, view and discuss media and pop culture representations around evolution and the extinction of life, focusing on the visual rhetoric of each representation (i.e. tropes, embedded values, etc.).

Day 5—In-class presentations on group projects

**WEEK 3—Techno-evolution: Darwinism among the machines**

**Week 3 group project assignment:** Write a proposal in which you advocate for the development of an advancement in biotechnology with the potential for widespread application. This could be a prosthetic, a drug, a program in genetic engineering, or something else. Describe the possible impact and benefits for your innovation, and then take stock of ethical objections, possibilities for misuse, or unexpected social consequences. In arguing for your innovation, offer solutions or counterarguments to these objections and problematic future scenarios.

Day 1—Transcending the human with transhumanism

**Guest speaker:** Andrew Pilsch (author of *Transhumanism: Evolutionary Futurism and the Human Technologies of Utopia*, 2017) on transhumanism

  https://nickbostrom.com/old/transhumanism
• Transcendent Man (2011, dir. Barry Ptolemy)

**In-class mini-lecture and exercise.** Writing like a college student (III): Problem construction and argumentative stakes

Day 2—Techno-evolutionary pessimism
• Samuel Butler, “The Book of the Machines” (ch.23-25 in Erewhon, 1872)
• Bill Joy, “Why the Future Doesn't Need Us,” Wired, April 1, 2000
• Kazuo Ishiguro, selection from Never Let Me Go (2005)

**In-class exercise.** Debating transhumanism: Half the class will generate arguments in favor of the transhumanist position of prioritizing biotechnology as central to human flourishing and ongoing social evolution; the other half will generate arguments against transhumanism. We will stage a debate in which each side strives to convince the other.

Day 3—Eugenics and genetic modification
• Francis Galton, “Eugenics: Its Definition, Scope, and Aims” (1904)
• Nancy Kess, selection from Beggars in Spain (1993)
• Gattaca (dir. Andrew Niccol, 1997)

Day 4—DIY evolution and “medical punk”
• **Guest speaker:** Samantha Thomas, MD on genetic engineering and bioethics
  • Lucy (dir. Luc Besson, 2014)

Day 5—In-class presentations on group projects