Charles Darwin’s theory of evolution through natural selection brought about one of the greatest intellectual and cultural revolutions in the modern era. It profoundly altered the way we think of science, religion, philosophy – our modern society. We will attempt to integrate a study of evolution (science) with a study of society (humanities) to better understand the social, cultural, and scientific contexts of Darwin’s theory. The first part of the course will focus on Darwin’s ideas, the manner in which he came to them, and his argument’s explanatory power and weaknesses. The second part of the course will explore the diverse ramifications of Darwin’s theory, including the modern debates in science and religion, biotechnology, sociobiology, and other tricky contemporary issues. By studying Darwin’s ideas within their broader social, cultural, and scientific contexts, you will learn a base of knowledge that will enable you to critically analyze science, and enter, with an informed judgment, into the fascinating debate taking place today concerning biology’s increasing role in our society.
REQUIRED TEXTS
Mary Shelley, *Frankenstein*
David Quammen, *On the Origin of Species: The Illustrated Edition*
David Quammen, *The Reluctant Mr. Darwin*
H. G. Wells, *The Island of Dr. Moreau*
Richard Lewontin, *Biology as Ideology: The Doctrine of DNA*

Readings on Reserve
In addition to the above texts, we will also place readings on Reserve, denoted on your syllabus by an *. Additional items may be placed on reserve as the course progresses. These are required readings.

Mechanics:
The emphasis of the course – and thus your grade – will be on reading and critically analyzing Darwin’s theory and its ramifications. **THUS, IT IS IMPERATIVE THAT YOU ATTEND CLASS.** You must have the readings completed before class to contribute meaningfully to class discussion. Each week, you may be responsible for small in-class or take-home assignments that may include written analysis of the readings. A comprehensive final exam will be given on April 29th, from 2:00 – 3:50 pm.

In addition to studying the Darwinian Revolution, this is also a Contemporary Issues in Science (CS) course. Many of the issues and themes dealt with by modern scientists, especially biologists and social scientists, are rooted squarely within the Darwinian Revolution of the nineteenth century. You will be able to trace common themes – such as reductionism, the impact of social forces on science, and the impact of science on politics and economics – throughout the course. You will need to learn to recognize these themes, both within class lectures and within the assigned readings. You will then be expected to write a three-page paper, supported with material from class as well as some additional sources (more on this when paper assignments are handed out), focusing on one of these themes as it relates to the content of this course. This assignment is due Thursday, April 3rd in class.

Grades:
In-Class Tests on Required Books: 25%
In-Class Quizzes and Take-Home assignments: 25%
CS Paper: 25%
Final Exam: 25%
**Goals for the Course:**
In addition to studying evolutionary theory and the history of science, this course will also help develop your scientific and critical thinking skills. Throughout the term, we will emphasize:

- **the ability to understand and evaluate opposing viewpoints.** Differing viewpoints are common in science. Making an educated judgment requires a clear understanding of various claims and an ability to discern which one is most valid.
- **the ability to assess the quality of evidence and discern general patterns.** People may have different viewpoints on scientific issues and the quality of evidence supporting these views can vary considerably. Scientific thinking entails evaluating the caliber of evidence and developing plausible conclusions based on that material.
- **to understand the value and role of science in society.** Science does not occur in a bubble. It affects, and is affected by, society. This course will demonstrate some of the numerous ways in which evolutionary theory has influenced society, and how society has influenced evolutionary theory and the biological sciences.
- **to show a healthy skepticism toward science and scientific claims.** Unlike other ways of knowing the world, skepticism and the questioning of assumptions make up an essential part of the scientific process. You will develop a deeper understanding of what science can and can’t do; what science is and what it is not; which types of questions science can answer and which types it can’t; and finally, what is valid science and what is not.
- **an ability to discuss these topics in front of an engaged intellectual community of scholars.** Often times, knowing something is the easy part. Being able to explain that knowledge and communicate your viewpoint within a framework that others can understand and trust is often much more difficult.
- **Don’t mistake belief for knowledge (or, don’t always believe what you think).** Be skeptical, particularly of your own beliefs.
TENTATIVE SCHEDULE OF TOPICS, READINGS, AND ASSIGNMENTS

SECTION I: Approaches in the History of Science

WEEK ONE
Th Jan 9: Introduction; Discussion; Syllabus

WEEK TWO
T Jan 14: What is Science? What is the History of Science?
Th Jan 16: Case Study I: Copernicus and Revolution

WEEK THREE
T Jan 21: Case Study II: Gender and Science
Schiebinger Quiz and Discussion
Readings: *Londa Schiebinger, “Gender and Natural History”
Th Jan 23: Case Study III: Newton and the Reductionist Program in Physics
Readings: Mary Shelley, Frankenstein.

WEEK FOUR
T Jan 28: Case Study IV: Victor and the Reductionist Program in Biology
Readings: Mary Shelley, Frankenstein.
Th Jan 30: Test and Discussion on Frankenstein
Readings: Mary Shelley, Frankenstein.

Section II: The Roots of Darwin’s Ideas

WEEK FIVE
T Feb 4: Humboldt and Space; Lyell and Time
Th Feb 6: Adam Smith, Thomas Malthus, and the Social Construction of Evolution
WEEK SIX
T Feb 11: Voyage of the HMS Beagle
CS Paper Assignment Handout and Discussion
Readings: Quammen, The Reluctant Mr. Darwin, pp. 1-152.

Th Feb 13: Biogeography: Across Oceans and Up Mountains
Readings: Quammen, The Reluctant Mr. Darwin, pp. 1-152.

WEEK SEVEN
T Feb 18: Darwin after the Beagle (David Quammen)

Th Feb 20: Evolution Laboratory

Section III: Darwin’s Dangerous Idea

WEEK EIGHT
T Feb 25: Test and Discussion on Quammen, The Reluctant Mr. Darwin. Evolution Laboratory Report Due
Readings: Quammen, The Reluctant Mr. Darwin.

Th Feb 27: Darwin’s Text, Chapter by Chapter

WEEK NINE
T Mar 4: Whewell’s “Consilience of Induction”; or “One Long Argument”; or “No Longer a Savage Looking at a Ship”

Th Mar 6: Test and Discussion on Darwin’s On the Origin of Species

WEEK TEN: SPRING BREAK

Section IV: Reductionism in Modern Biological Thought

WEEK ELEVEN
T Mar 18: Review of the Origin; Mendel and the Modern Synthesis
Th Mar 20:  Vivisection
Reading:   H. G. Wells, *The Island of Dr. Moreau.*

**WEEK TWELVE**

T Mar 25:  **Test** and Discussion on H. G. Wells, *The Island of Dr. Moreau*
Readings:  H. G. Wells, *The Island of Dr. Moreau.*
Th Mar 27:  Social Darwinism and Eugenics

**WEEK THIRTEEN**

T Apr 1:  Science and Religion in the American Context
Th Apr 3:  Teaching Evolution
**CS Papers Due**

**WEEK FOURTEEN**

T Apr 8:  Modern Reductionism
Th Apr 10:  Mapping the Genome

**WEEK FIFTEEN**

T Apr 15:  Sociobiology and/or Evolutionary Psychology
Th Apr 17:  **Test** and Discussion on *Biology as Ideology*
Readings:  Lewontin, *Biology as Ideology,* pp. 61-123.

**WEEK SIXTEEN**

T Apr 22:  Darwin in Context; Final Thoughts
Readings:  *Quammen, “Was Darwin Wrong?”*
Th Apr 24:  Final Exam Review
T Apr 29:  **FINAL EXAM  2:00 – 3:50 pm**