Biology/Psychology - BY100/PY178: Science and Ethics of Biotechnology

Block 1- Ralph Bertrand
Block 2- Lori Driscoll

*This Course fulfills the Critical Perspectives: Scientific Investigation of the Natural World requirement.*

The first block of this course will cover issues in contemporary genetics from conceptual and laboratory-based approaches that foster critical thinking, laboratory skills and quantitative reasoning. Students will discuss the ethical and moral dilemmas associated with contemporary genetics (social, legal, and medical) using their newly acquired knowledge of the science. Students will develop communication skills through oral presentations, use of the library, and a writing assignment that includes a synopsis of a scientific article. The course also contains a laboratory component that allows students to participate in several genetic experiments.

In the second block of the course, we will specifically examine the scientific, social, and ethical issues associated with the research and implementation of "enhancement" technologies in neuroscience, such as brain-machine interfaces, pharmacological enhancements, and genetic technologies not covered in the previous FYE block. We will cover background material in neuroanatomy and neuropharmacology, and we will use this knowledge to critically evaluate popular books and primary scientific articles on current and future neural enhancement technologies. We will also design and conduct a behavioral experiment and write a report of our findings in scientific format.

*A two-block course with a unique instructor each block; each block will receive a separate grade.*

**Details:**
- Course involves occasional laboratory exercises
- No prior scientific experience necessary
**History- HY 105: Civilization of the West**

Blocks 5 and 6- Tip Ragan

*This two-block course fulfills the Critical Perspectives: The West in Time requirement.*

This course explores the history of Mediterranean and European peoples. It poses a central historical question: how did the people of the past construct their individual and community identities? We will also interrogate the concept of "European civilization" from a wide variety of perspectives, including political, social, cultural, religious, and gendered by critically examining historical texts, from ancient philosophical discourses to novels of the contemporary period. Finally, we will engage in knowledge production through writing essays analyzing primary sources.

Class discussions as well as student writing and presentations will be centered on the texts and artifacts left behind by ancients, medievals, and moderns. Films, readings, and classroom discussion will suggest the ways in which others of our times have understood prior European cultures, but emphasis here will be for this group—its students and teacher working together—to build a common sense of the Western past from the raw materials of historical literature and documents.

*A two-block course with one instructor; one grade will be given for the course as a whole.*

**Details:**
- This course serves as a gateway to the History major.
- Class will have some afternoon activities, such as visiting the College Press, Special Collections at Tutt Library, the Learning Commons, and so forth.
Environmental Science- EV 128/EV 260: Introduction to Climate Change/Sustainability Through Land Use Policy

Block 5- Miroslav Kummel

Block 6- Phil Kannan

This two-block course fulfills the Critical Perspectives: Scientific Investigation of the Natural World and the Critical Perspectives: Quantitative Reasoning requirements.

EV 128- Introduction to Climate Change

The goal of this course is for you to develop solid understanding of basic components of the earth climate “machine”, the nature of human influence on the climate system, the geologic and historical climate records, climate modeling and future projections as well as the impact of changing climate on biota, policy, economics, international affairs. The ethical and philosophical dimension of climate change will also be addressed. Our goal is for you to learn to think about global climate change from a “whole system perspective”. This is a demanding course but you will learn a lot of fascinating information as well as have fun doing science in one of the most beautiful places in the world.

EV260- Sustainability through Land Use Policy

Sustainability is a systems-based approach to improving (for both the present and future generations) (1) the environment, (2) the economy, and (3) society. A government’s land use policies impact all three of these “pillars of sustainability” by determining development patterns. In this course we will explore major land use policies, their impacts on sustainability, and possible innovations in land use policy that can lead to a more secure future. We will consider such questions as: How can land use policies mitigate global climate change and the harm it causes? How can land use policies promote the social and economic development within a community and at the same time reduce air pollution and habitat destruction?

A set of linked, one-block courses that must be taken together, with one instructor in each block; separate grades.

Details:
• This course serves as a gateway to the Environmental Science and Environmental Policy majors.
• This course fulfills major prerequisites in EV integrated science and EV policy (1 unit).
• Class will be held for an additional hour every afternoon in Block 5 to cover special topics in climate change. There will be a few afternoon meetings in Block 6.
• No prerequisites necessary (beyond basic fluency in algebra).
• Class will involve one overnight field trip in Block 5, either to Pikes Peak (treeline/snow hydrology) or to Denver/Boulder (Ice core lab/NCAR/NOAA).