

Nature: Intersection of Science, Engineering, and the Humanities

Frequently Asked Questions (FAQ)

Why should I take this course?

This course builds insight into how we think and how we understand our world. The course is part of the University's Intellectual Foundations Program and satisfies an IFP requirement. It builds a foundation for insight and professional practice in any field, whether it is medicine, law, business, art, science, or engineering.

What is this course about?

This course is about how we think, and specifically, how we think about nature. Thinking about nature has changed over history. Even today, different people have different views, often reflecting different ways of thinking about things in general. Engineers may have different views than scientists and also different from poets.

We will look at the different types of theories that have been used to understand nature. We will look at theories from different times in history and from different perspectives today. We start with the premise: *"All theories are wrong. But some theories are more useful than others."*

What will the experience be like?

This is a reading and discussion course. This is not a technical course, in the sense that you are not expected to do math. You will be introduced to basic technical concepts, and the examples are all from science.

What will the homework be like?

- There will be weekly reading assignments with quizzes.
- There will be simple exercises (with detailed instructions) to watch computer simulations.
- There will be short written assignments and small group presentations.

For the simulation exercises, you will access the tools online through a department web site. To perform the exercises, you will copy handout examples and follow the instructions.

For the final project, you and a team-mate will think of a variation on one of the simulations, write a report, and present it in class.

Will we address the conflict between evolution and creationism?

Not really. We make no claims about truth. We are looking only for usefulness and insight. Evolution and its variations are discussed as examples of complexity. Other models are discussed as well.

Who is the instructor?

The instructor has a rich background from which to draw examples to stimulate thinking and motivate discussions. In the past he has taught the engineering senior project class, the senior seminar on ethics, project management, and computer programming classes.

- MIT graduate with degrees in Architecture & Urban Studies (7 years of academic bliss).
- City Planning for Grinnell, Iowa (2 years keeping poor people safe – with federal money).
- Astronomy at Harvard University (10 years using satellites and software to look at stars).
- Geophysics for the French Government (1 year measuring the earth's core - in Paris!).
- Product development for Hewlett Packard Labs (5 years making cool stuff).
- Assistant Professor at FAU (5 years teaching engineering and computer science).
- VP of a high-tech start-up (1 year trying to change the world).