BIOL 115 – Essential Biology

In this course, we will learn about living organisms at a variety of levels, from molecules to populations. Since Biology is an enormous field, it is impossible to cover it completely in a single course. As a consequence, this course will address five fundamental themes (see below). Within those themes, an effort will be made to relate the facts presented to pressing matters in our daily lives. For instance, when we discuss genetics we will talk about genetic engineering and its impact on society, and when we talk about evolution we will talk about viral evolution and pandemics. This approach means that the course will tend to be topical, focusing on interesting observations and trying to explain them on the basis of biological knowledge.

Because the course is online this year, we are changing the course format to provide lecture content in digestible increments and increase opportunities to interact with professors and teaching assistants. We are in the process of adapting to the online format, and our plans have not yet solidified, but we can give you an idea of what we’ve been considering.

For course content, each week, we will present content in multiple, pre-recorded 15 minute lectures. During class times professors will host interactive sessions where you will have the opportunity to ask questions and we will discuss examples and concepts in more detail. These sessions will be recorded. TAs will also host weekly Q&A sessions to go over specific questions that you have on the material.

We are still in the process of structuring assessments for the course. However, our main approach will be to use quizzes and assignments as the primary forms of assessment. Quizzes will be short answer and directly address material covered in the lectures. Assignments will require finding recent articles or TV shows/films/videos about science and critiquing either the news source or the description of the science. Details on all assessments will be posted prior to the start of the class.

General topics for Fall 2020:

MODULE 1: SCIENCE & LIFE (Woolley)
Intro to the Scientific Method
Biology- Life & Diversity

MODULE 2: CELL BIOLOGY (Vogel)
Chemistry & Molecules of Life
Cell Function & Structure
Enzymes & Metabolism
Cellular Respiration
Carbon Flow & Photosynthesis

MODULE 3: GENETICS, CANCER & BIOTECHNOLOGY (Vogel)
DNA Structure, Replication & Forensics
Readings: This year, rather than using a textbook, we will be assembling chapters and readings from multiple sources.
(Note: subject to change; do not purchase before receiving course syllabus)

Method: Four to five pre-recorded 15 minute lectures/week
Two professor lead 30-45-minute interactive discussions/week on Zoom or similar platform
Two Q&As with TAs/week

Evaluation: Written assignments and short answer based quizzes