

Intro to Synthetic Biology
Syllabus
Summer HSSP 2020

Instructors

Roopsha Bandopadhyay (S13986-teachers@esp.mit.edu)

Course Objectives

The intention of this course is for students to become familiar with current synthetic biology advances. Students will learn about how biological information is generated, measured, and manipulated. Along with technical scientific concepts about synthetic biology, students will become familiar with policies and media responses that are linked to these issues.

Materials

Course notes, documents, and assignments will be posted here:
https://esp.mit.edu/learn/HSSP/2020_Summer/class_docs/13986

Lectures

Lectures will be held each Saturday from July 11 to August 15 via Zoom. Classes run from 1:00pm – 2:00 pm EST. Although lectures cannot be recorded, associated notes and slides will be posted before lecture.

Weekly Schedule

A brief overview of what we will cover during the course:

- Week 1 – Introduction, Design Principles
- Week 2 – Logic and Circuits
- Week 3 – Assembly and Execution
- Week 4 – Outside the Lab
- Week 5 – Case Studies (assign groups and begin research)
- Week 6 – Case Studies (class presentations)

Grades and Assignments

No assignments or coursework are graded but are strongly encouraged. Assignments in this class include in-class exercises, article discussions, and case study analysis.

Article Discussions

Students will examine articles for in-class discussions. It is required to complete reading assignments and participate in discussions; preparing beforehand provides a better experience for everyone!

Case Study Analysis

Groups of students will receive a different challenge to address using synthetic biology. Using knowledge from the course, groups will brainstorm how to address their issue and present their solutions during the last class. Students are encouraged to interact with other groups' presentations with comments or questions.