

COLLEGE OF CHEMISTRY COURSE GUIDE (../INDEX.HTML)

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BIOE 140L - SYNTHETIC BIOLOGY LABORATORY (4 UNITS)

(Taken from the UC Berkeley Course Guide (<http://guide.berkeley.edu>))

COURSE OVERVIEW

SUMMARY

This laboratory course is designed as an introduction to research in synthetic biology, a ground-up approach to genetic engineering with applications in bioenergy, healthcare, materials science, and chemical production. In this course, we will design and execute a real research project. Each student will be responsible for designing and constructing components for the group project and then performing experiments to analyze the system. In addition to laboratory work, we will have lectures on methods and design concepts in synthetic biology including an introduction to Biobricks, gene synthesis, computer modeling, directed evolution, practical molecular biology, and biochemistry.

PREREQUISITES

BIOE 11 ([bioe11.html](#)) or BIO 1A ([bio1a.html](#))

TOPICS COVERED

Designing and interpreting biological experiments; Learning how to plan, coordinate, and implement a genetic engineering project in a group format; To master the wetlab techniques of synthetic biology

Students will be able to examine analytical data, interpret controls, and make decisions about next steps. Students will be able to perform synthetic biology experiments including reagent preparation, DNA manipulation, analytical methods, and microbiological techniques. Students will be able to understand responsible conduct expectations for wetlab experimentalists. Students will be able to understand the techniques and protocols used in synthetic biology. Students will be able to work within a team and develop communication skills.

WORKLOAD

TIME COMMITMENT

2 hours of lecture and 6 hours of laboratory per week.

UC Berkeley Course Guide (<http://guide.berkeley.edu>)

COLLEGE OF CHEMISTRY PEER SERVICES

Made by Angela Lee, c/o 2019



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