Bioengineering 101

Videos can be found at: https://www.youtube.com/playlist?list=PLCSscNo4GNRgNJtnImXmW1vxtYFCDaBnf

Instructor(s)
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Course Description

This course will go from cells to DNA to protein. It will give students a basic understanding of how to genetically edit cells and what that means. The course also provides an extensive hands-on component so that students by the end should be able to genetically modify cells on their own and understand physically what that constitutes.

Course Goals

Students who complete this course successfully will be able to:

- Use laboratory equipment like scales and pipettes
- Understand sterile technique and antibiotic usage
- Culture bacteria
- Genetically modify bacteria
- Use CRISPR and design their own CRISPR experiments

Required Texts, Materials, or Equipment

- Molecular Biology of the Cell Book https://drive.google.com/open?id=1rCcsybOZGc0pok5-HRHvXlZAVYkdk-Xs
- Snapgene Viewer http://www.snapgene.com/products/snapgene_viewer/
- VMD https://www.ks.uiuc.edu/Research/vmd/
- All physical materials are included in price of class

Weekly Work/Homework

Each week there will be assigned readings and experiments to perform. They should take no more than a few hours investment each week.

Course-Specific Support or Supplementary Instruction

The internet has a wealth of information on the topics presented in class. If you don't understand something search it out. If you still don't understand it then ask.

When trying to access papers behind paywalls use http://sci-hub.tw for free access to most any paper

Syllabus Bioengineering 101

Preliminary Schedule of Topics, Readings, and Assignments

Start Date	Topics/Assigned Readings/Homework	Finish By
	MBotC Chapter 1 MBotC Chapter 2*Optional Reading	
	MBotC Chapter 3	
	MBotC Chapter 6 MBotC Chapter 7*Optional Reading	
	CRISPR Readings will be assigned	