

## Nanoscience Lab Syllabus

### Description:

Welcome to Nanoscience Lab! This course is designed for high school students who are interested in learning the basics of nanoscience and some key applications. During this intensive five-day program, you will develop skills in hands-on nanoscience experimentation and scientific communication, while also learning how nanoscience is applied to everyday life.

### Education Director:

Rita Blaik, PhD

### Education Manager:

Cheylene Tanimoto, PhD

### Program Coordinator:

Elaine Morita, PhD

### Instructor of Record:

Prof. Sarah Tolbert, Department of Chemistry & Biochemistry

### Course Hours and Structure:

MTWRF 9:00 AM - 5:00 PM PDT in the California NanoSystems Institute Presentation Space. A course schedule is attached. **Note that on Monday, we will start at 8:15 AM.** Our mornings will be focused on giving you a hands-on experiment, and the afternoon will have activities that augment what you learned.

Even though course hours are only 9:00 AM - 5:00 PM, you are expected to follow attendance codes of conduct for Summer Sessions and this course for the duration of the program unless prior written permission is obtained at least three days before the beginning of the course. You should also expect to spend about 1-2 hours per night on homework.

### Safety Dress Code:

Lab safety is very important. You must wear long pants and shoes that cover the entire foot. A lab coat, safety glasses, and gloves will be provided when necessary. If you arrive in inappropriate clothing, you will be sent to purchase some at the UCLA store. **If you are not dressed appropriately, you will not be allowed to participate in the day's experiment.**

### Course Website:

Course documents will be posted on a Padlet website, including experiment protocols and presentations that will be beneficial for students to reference when completing their homework assignment. For B Session (commuters only), homework help hosted by a graduate student instructor will take place in the evenings on Zoom.

### Pre-Homework:

You are responsible for a set of vocabulary terms that will be sent out before the course begins. We look forward to everyone bringing their own strengths from their own unique background,

but we also want to make sure everyone is familiar with some basics by the time we begin. These terms come from biology, chemistry, physics, and engineering and we want you to be familiar with them before they are used throughout the course. We will call on students to define words throughout the course and we will have trivia-based fun activities that might include some of these key terms. You will also be required to complete the Environment, Health, and Safety (EH&S) Laboratory Safety Fundamentals online course through [worksafe.ucla.edu](https://worksafe.ucla.edu) to understand the basic safety precautions when working in a laboratory environment.

**Homework:**

There will be four homework assignments given during the week; each one requires you to visually explain the concepts you learn about the day's experiment. These assignments are due at 9:00 AM the day after they are assigned. They will be graded for effort on a scale of unsatisfactory (✓-), satisfactory (✓), or excels (✓+). These will be explained in more detail during class.

**Final Presentations:**

On Friday, you will present in groups on one of the experiments you learned during the week. More details will be given later in the week. We invite your families to attend, with questions! This presentation session will be held from 2:00 - 4:30 PM.

**Grading: Pass/No Pass**

The grading structure is as follows:

- Completion of homework assignments with an average grade of satisfactory (30% of total grade)
- Participation in all workshop activities and lab activities (30%)
- Final presentation (40%)

A passing grade requires a total score of at least 70%. In addition, any student who fails to abide by the proper codes of conduct as defined in the course introduction and our safety rules may receive a "no pass" grade. If you ever feel like you're struggling, please feel free to come talk to any of the instructors!

**Code of Conduct:**

All students are expected to follow the UCLA Summer Sessions code of conduct as well as the safety guidelines outlined in our safety and liability waivers, which you should all have signed prior to the first day of class. Students are expected to follow instructions set out by instructors, especially when in laboratory spaces and performing experiments. During our course introduction we, as a class, will discuss and develop a set of community agreements that students will be expected to adhere to.

We look forward to meeting every student and making this the best program it can be. We will be flexible and patient with various issues that might come up (health issues, not being able to get supplies, deadlines, emergency situations that may arise, etc.) and we ask that you will be patient with us as well.