



Communicating Science to K-8 Students (MAE 194) Guidelines – Fall 2014

Building Engineers and Mentors (BEAM) provides engaging science and engineering activities to K-8 students across Los Angeles. Our goal is to stimulate the younger generation's interest in pursuing careers in STEM fields (science, technology, engineering, and math). UCLA students ("mentors") will work directly with K-8 students, teaching STEM concepts through hands-on activities. To award dedicated student volunteers for their contributions to BEAM, mentors have the option of enrolling in this 2-unit course, Mechanical and Aerospace Engineering 194, by attending weekly volunteering opportunities (planning sessions and site visits) and creating a STEM lesson plan to be used in future quarters.

During planning sessions, authors of each lesson plan will provide a demonstration of the lesson for that week's site visit followed by an opportunity for mentors to try the lesson out themselves.

Please note that the enrollment in the course is optional. Mentors who wish to get more involved are strongly encouraged to take the course and complete a lesson plan. However, all BEAM members are welcomed to come to the planning sessions and site visits, regardless of the enrollment status.

Course Information

Course number: 210-866-201

Grading: 2 units, S/U grading only

Faculty Advisors

Prof. Greg Carman	carman@seas.ucla.edu
Prof. Richard Wirz	wirz@ucla.edu
Prof. George Youssef	george.youssef@csun.edu

Planning Sessions

Tuesday 6–7 pm, 7702 Boelter Hall (TANMS Conference Room)

Mentors are highly recommended to attend the weekly on-campus planning session before going to sites, even if they are not officially enrolled in the course.

Site Visits

Crescent Heights Language Arts & Social Justice Magnet Elementary
Melrose Elementary School
Playa Vista Elementary

Mentors attend one of these site visits each week (preferably the same site every week).

Involvement Opportunities

- Attend the on-campus **planning session** every week.
- Attend **site visits** during 3rd – 8th week.
- Complete and give a brief presentation of your own **lesson plan** at the last planning session.

Expectations

According to the MAE Department's requirements, mentors who choose to enroll in MAE 194 need to

- **attend at least 3 site visits, and**

- *successfully complete the **lesson plan** to receive academic credits.*

Livescans

- For safety purposes, all new mentors must complete a Livescan at the UCPD.
- The appointment takes less than 10 minutes but should be scheduled during weeks 1 or 2, to accommodate UCPD's busy schedule.
- Take the two provided Livescan forms to your appointment.
- You will **NOT** be allowed to attend any site visits until these forms are turned in.
- If you've done a Livescan for a different group, you need to do it again for BEAM.
- If you've done a Livescan for BEAM in the past, please talk with our Internal Vice President, Marina Dannecker (marinae.d@gmail.com), to confirm.

Contact Us

Have questions about BEAM and/or MAE 194? Need help coming up with lesson plan ideas? Have ideas how to improve BEAM and/or MAE 194? Interested in becoming more involved? BEAM course advisors Steven (smoran1@ucla.edu) and Zhihao (zhihao1993@ucla.edu) will be willing to help!

Course Schedule

Week 1: Overview of BEAM, course structure and expectations (info-session)

Week 2: TBD

Week 3: Planning session: Rockets

Week 4: Planning session: Microscopes

Week 5: Planning session: Bridges

Week 6: Veteran's Day (no planning session): Candy Chromatography

Week 7: Planning session: Lava Lamps

Week 8: Thanksgiving week: No site visits

Week 9: Lesson plan showcase and end-of-quarter party

Benchmarks toward Final Project

For the **Lesson plan**, you may work in groups of 1-3 mentors. Our experienced curriculum team and course advisors will be available to help you brainstorm ideas and provide feedbacks along the process.

Below is a suggested timeline for your reference:

Week	Lesson Plan
1	begin forming groups
2	choose lesson topic
3	complete "student objectives" and "topics"
4	complete "materials" section with budget
5	complete "procedure"

6	complete “overview of the lesson process”
7	complete “introduction”
8	add “resources” including optional links for a complementary YouTube playlist.
9	final revisions, prepare final presentation