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ENGINEERING STUDENT SERVICES

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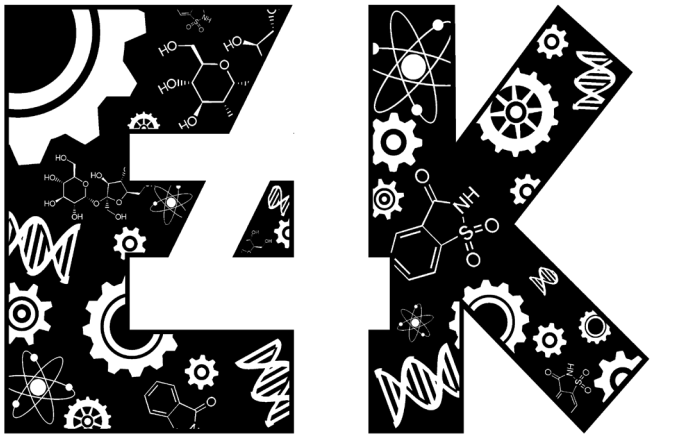
ANIMATION STUDIOS



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PASSPORT

STUDENT SOCIETIES

Engineering for Kids Day was planned, designed, and run by the following UC Berkeley engineering student societies:

- American Institute of Chemical Engineers (AIChE)
- American Nuclear Society
- Berkeley Engineers and Mentors (BEAM)
- Bioengineering Honors Society
- Biomedical Engineering Society (BMES)
- CalSol: UC Berkeley's Solar Vehicle Team
- Electrical Engineering Outreach at Berkeley
- Engineers for a Sustainable World
- Engineers Without Borders
- IEEE
- Materials Science and Engineering Association (MSEA)
- oSTEM at Berkeley
- Pi Tau Sigma Mechanical Engineering Society
- Pilipino Association of Scientists, Architects, and Engineers (PASAE)
- Science and Engineering Community Outreach
- Society of Women Engineers
- Tau Beta Pi
- Theta Tau

SPECIAL THANKS

Pam Armstrong
Gian Bruno
Linda Cicarella
Dan Essley
Lydia Raya
Shareena Samson
Deepak Sharma
Jennifer Teverbaugh
Paula Zamora
Cheese 'N' Stuff

WHAT IS ENGINEERING?

PROBLEM SOLVING Just like any homework problem, engineering is looking at any problems that exist in the real world and solving them using math and science.

MATH AND SCIENCE In order to solve problems, engineering uses a foundation based on principles of science and math that are taught as far back as first grade.

CREATIVITY The problems that engineers solve can be very complex. Creativity (just like in art and music) must be used to apply scientific principles to solve these problems.

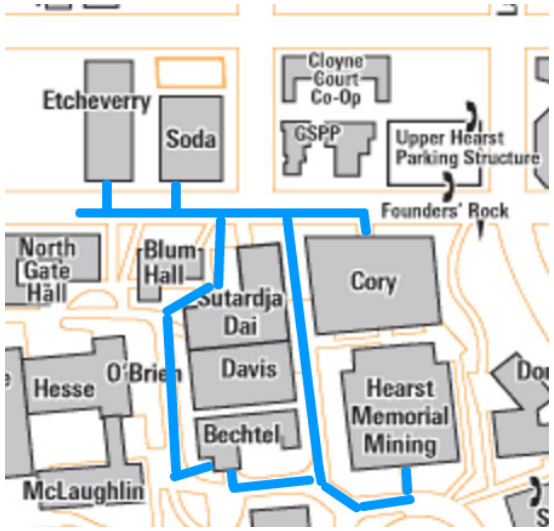
LEARNING Even after finishing school, engineers are always learning from everything they see and experience so they can apply it to new problems that they encounter.

TYPES OF ENGINEERING

Bioengineering
Civil Engineering
Chemical Engineering
Electrical Engineering
Environmental Engineering
Industrial Engineering
Materials Engineering
Mechanical Engineering
Nuclear Engineering

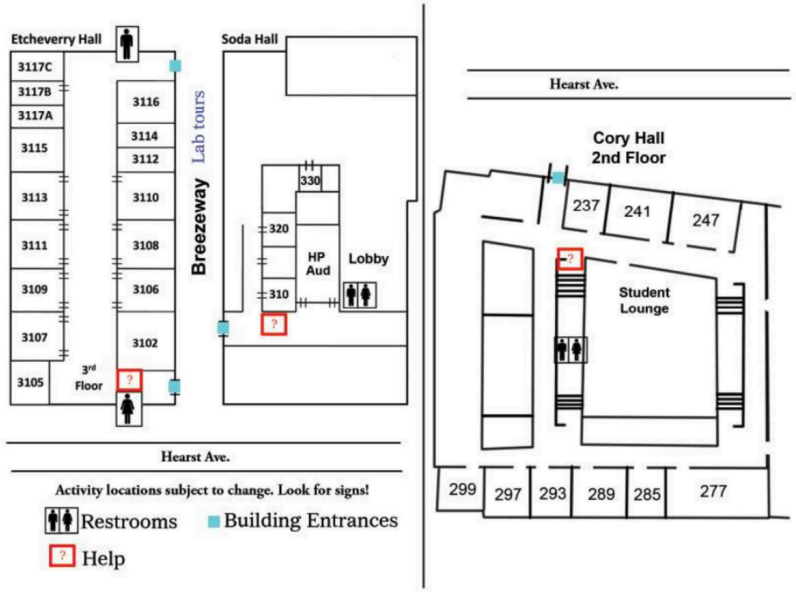
For more information, visit
coe.berkeley.edu/departments

MAP OF FACILITIES



Please feel free to ask a student volunteer if you have trouble finding a location!

**Sibley Auditorium and Garbarini Lounge are in Bechtel.*



ENGINEERING FOR KIDS DAY

Thank you for participating in the eighth annual Engineering for Kids Day at UC Berkeley! We hope you will enjoy today's activities as well as be inspired to explore the many possibilities and fields that engineering has to offer.

HOW E4K WORKS

For the kids, we have **18 core 25-minute activities** running multiple times throughout the day. These begin every 30-minutes (5 min passing period), and there are 6 sessions for each activity through the day.

Activities will be in designated rooms in Etcheverry, Soda and Cory Halls, as well as in the Garbarini Lounge. Students can enter any open door to join an activity. However, **if the door is closed, that means the activity is full or closed**. Students should either look for an open door, wait until the next session, or explore the activities and demonstrations in Garbarini Lounge.

At each of the 25-minute activities, your passport will be stamped after you complete the activity. **If you collect at least 5 stamps, with at least 1 from a demonstration, you will receive a goody bag at the end of the day and be entered into a raffle for bigger prizes!** The raffle will take place at the closing ceremony.

Activities will break from 12:00 – 12:30 when our volunteers are eating lunch.

PLACE STAMP HERE

Tabletop Hovercrafts

Room: Garbarini Lounge

Come make a floating disc that skims across a surface similar to the way an air hockey puck or hovercraft does! Learn about friction and how it affects motion.

PLACE STAMP HERE

Squishy Circuits

Room: Garbarini Lounge

Learn how to make circuits out of Play-Doh!

(This activity will only be available for a limited number of sessions.)

PLACE STAMP HERE

Reverse Engineering

Room: Garbarini Lounge

Ever wonder whats inside an XBOX? Or a TV? Come take electronics apart and see whats inside!

SCHEDULE

<table>
<tr><th></th><th>Team Blue</th><th>Team Gold</th></tr>
<tr><td>9:00-10:00</td><td colspan="2">Check-In (Hearst Memorial)</td></tr>
<tr><td>10:00-10:30</td><td colspan="2">Activities</td></tr>
<tr><td>10:30-11:00</td><td colspan="2">Activities</td></tr>
<tr><td>11:00-11:30</td><td colspan="2">Activities</td></tr>
<tr><td>11:30-12:00</td><td rowspan="2">Lunch</td><td>Activities</td></tr>
<tr><td>12:00-12:30</td><td rowspan="2">Lunch</td></tr>
<tr><td>12:30-1:00</td><td>Activities</td></tr>
<tr><td>1:00-1:30</td><td colspan="2">Activities</td></tr>
<tr><td>1:30-2:00</td><td colspan="2">Activities</td></tr>
<tr><td>2:00-3:00</td><td colspan="2">Closing Ceremony (Sibley Aud.)</td></tr>
</table>

To ease the distribution of lunch, kids' lunch will be split up into two times: Team Blue will have lunch from 11:30-12:30 and Team Gold will have lunch from 12:00-12:30. Your team is determined by the mark on this pamphlet.

Note: please be patient with us as all our volunteers and coordinators are full-time students and are putting this event together on our free time.

PLACE STAMP HERE

Scuba Diver in a Bottle

Room: 3119 Etcheverry

Come make your own scuba diver and learn how to make the scuba diver move up and down inside a bottle!

PLACE STAMP HERE

Solar Vehicle Racing Team (Demo)

Room: Etcheverry Hallway

Composites, tubing, solar cells, electric boards - see the processes behind building a car!

PLACE STAMP HERE

Candy Structures

Room: Etcheverry Hallway

Come make structures with candy! You'll compete with others to see whose structure can hold the most weight and learn about civil and structural engineering. The top builders will win prizes!

PLACE STAMP HERE

Anaerobic Digester and Algae Biofuel Reactor (Demo)

Room: Garbarini Lounge

We will have samples of digestate from the anaerobic digester that has started to produce methane (captured in a large balloon), as well as algae and biodiesel samples from the lab. See how your food scraps can be used to create clean energy!

STUDENT ACTIVITIES

PLACE STAMP HERE

Electronic Circuit Music Workshop

Room: 212 Cory

Build your own musical circuit! Come learn how sound is produced, and then build a circuit to play your own music!

PLACE STAMP HERE

Fun with Circuits

Room: 258 Cory

Circuit Games- Have you ever wondered why your lights turn on when you flip a switch? Come visit our table to learn about circuits and see how we used circuits to make our very own interactive Angry Birds Game that you can play!

PLACE STAMP HERE

Oil Spill Solutions

Room: 293 Cory

Oh no!! There has been a giant oil spill in our very own San Fransisco Bay. Only you can help clean up this spill. Come learn about how engineers help solve problems in the environment.

PLACE STAMP HERE

Popping Boba/Juice Caviar

Room: 299 Cory

Want to learn how to make your own popping boba? Come make some yummy popping boba and learn about polymers and spherification!

PLACE STAMP HERE

Make Your Own Ice Cream!

Room: 3108 Etcheverry

Come learn how to make your own ice cream! We'll teach you the chemistry involved and how liquid nitrogen can be used to make it!

PLACE STAMP HERE

Make Your Own Silly Putty!

Room: 3109 Etcheverry

Come and learn the chemistry behind this bouncy, moldable, shapable putty, and make some yourself in just a few minutes!

PLACE STAMP HERE

Licorice Half-life

Room: 3111 Etcheverry

Come learn about how we use the lives of atoms to date dinosaurs, with yummy licorice along the way!

PLACE STAMP HERE

Marble Roller Coasters

Room: 3113 Etcheverry

Discover the science behind roller coasters by building your very own track! Using marbles and foam tubes, we will explore how roller coasters use potential energy to gain speed and perform amazing tricks like loop-de-loops and roundabouts. Come hang with BEAM to build some sick designs and learn something new about your favorite rides!

PLACE STAMP HERE

Strawberry DNA Extraction

Room: 3105 Etcheverry

Find out how to extract the secrets of life from a simple strawberry. BioEHS will show you what DNA is and how to get it from pretty much anything.

PLACE STAMP HERE

Food Science

Room: 3106 Etcheverry

Learn about some cool science that can be done with food! pH indicators, laminar flow, and strong eggs, oh my! Be wowed by everyday edibles that can serve a greater purpose beyond consumption!

PLACE STAMP HERE

Egg Drop

Room: 3107 Etcheverry

"Humpty Dumpty sat on a wall,
Humpty Dumpty had a great fall.
But all the Berkeley engineers and all the E4K children,
Made a way to protect Humpty again and again!"

Learn how to protect an egg from a super high fall using random recycled materials that you can find at home. We'll teach you all about how important safety is when it comes to engineering so your egg can survive anything!