General Events

ME Student Instructional Shop Open House
Location: 1166 Etcheverry Hall
10am-noon & 1pm-3pm
Self-guided tour and demos of the Mechanical Engineering’s fully equipped student machine shop.

Hesse Hall Laboratories
Location: Hesse Hall
10am-noon & 1pm-3pm
Hesse Hall will be open for visitors to experience some of Mechanical Engineering’s Instructional Laboratories, including materials testing, combustion experiments, and various undergraduate learning spaces.

Information Session: The Mechanical Engineering Major
Location: 3106 Etcheverry Hall
Noon-1pm
Learn about exciting research in mechanical engineering, hear an overview of the undergraduate program, and discover why mechanical engineering is such a dynamic, versatile discipline.

MechE Student Panel
Location: 3106 Etcheverry Hall
1pm-2pm
Mechanical engineering will answer your questions about what the academics, diversity and climate are like in this exciting department. Learn why you might choose to attend Cal, and get tips on how to navigate your first year.

Organizations & Projects

AIAA - Design, Build, Fly
Sponsored by AIAA, Cessna Aircraft Company, & Raytheon Missile Systems, this annual competition invites graduates & undergrads from across the world to design, build, & test an unmanned, electric powered, remote-controlled airplane that can complete a pre-determined set of tasks.

ASME
The American Society of Mechanical Engineers is an international, professional organization connecting Mechanical Engineers, both in the field & in academia, around the world. Here at Cal, ASME is both a pre-professional & an educational organization geared towards fostering & enriching the academic experience of M.E. students at Berkeley.

CalSTAR (Space Technologies & Rocketry)
A UC Berkeley Space Technologies & Rocketry Team, is a non-profit organization whose purpose is to design, build, test, & launch rockets. Founded in Fall 2015, CalSTAR is an emerging team looking to compete in NASA’s Student Launch. Our beginning plans consist of team growth & certification for launching rockets.

Pi Tau Sigma
PTS is an International Mechanical Engineering Honor Society. Its mission is to foster high ideals in the engineering profession, stimulate & support departmental activities, promote professional welfare, & develop leadership & citizenship.

Questions?
Contact Shareena Samson
shareena@berkeley.edu
(510) 642-4094

Be sure to check out our AWESOME(!) Student Shop in 1166 Etcheverry Hall!

VEHICLES

CalSol (UC Berkeley Solar Vehicle Team)
A non-profit organization whose purpose is to design, build, test, & race fully solar powered vehicles. Composed of over 50 ugrads from a variety of disciplines, they provide students with hands-on experience with real world engineering, project management, & business aptitude.

Formula SAE
We design, fabricate, & compete with small formula-style racecars against other colleges from around the world. The FSAE set of rules is in place to test our engineering skills & creativity.

Hyundai Cars
The Model Predictive Control Lab will present & discuss their two new autonomous driving research vehicles. The lab’s Hyundai Genesis is a fully autonomous vehicle built with open source software, & features state-of-the-art sensors including Velodyne lidar & an OxTS inertial navigation system. The lab’s Hyundai Ioniq is used for research towards improving fuel economy by applying predictive control to modern hybrid electric powertrains.

Human Powered Vehicle
UCB’s HPV is a student group that conceptualizes & manufactures innovative forms of human powered transportation. Each year, we compete in the ASME HPV competition, & members gain valuable experience in the engineering design process, business management skills, & hands-on building experience.

INSTAR Research Lab
A UC Berkeley research group designing & manufacturing a high-power, cost-effective flywheel energy storage system for improving electric & hybrid vehicle system efficiency

Berkeley Formula Racing 2018 Vehicle Reveal
Time: 11:30
ME131 Vehicle Dynamics and Control (Course Demo)

**Location:** Hesse Hall, across the street, on campus downhill from the coffee shop in Sutardja Dai Hall

**Description:** The Berkeley Autonomous Race Car (BARC) set up is a teaching platform used in the vehicle dynamic and control design classes. The platform is based on a 1/10 scale RC car, equipped with onboard sensors and controlled by an embedded Linux computer. In the demonstration, we will provide the visitors with an RC car to race against our autonomous car. The BARC is controlled by a learning algorithm, the autonomous car first explores the race track and, at each lap, learns to race faster and faster while safely driving on the track. Join our demonstration to have more details about the set-up, the control algorithm and to have fun with RC cars!

**ME135/ME235 Mechatronics Lab (Course Demo)**

**Location:** Hesse Hall, across the street, on campus downhill from the coffee shop in Sutardja Dai Hall

Berkeley BioMechanics Lab

**Faculty:** Professors Grace O'Connell and Tony Keaveny  
**Student in Charge:** Shannon Emerzian

**Description:** The O'Connell Lab is focused on soft tissue biomechanics and tissue regeneration. Specifically, our goal is to understand the mechanical function of the healthy, degenerated and injured soft tissues, including the intervertebral disc and articular cartilage, in order to develop more physiologically relevant repair strategies. The Keaveny Lab studies bone biomechanics, including bone mechanical behavior, finite element modeling and experimentation, and design of bone-implant systems. Current projects are investigating the micromechanics of total disc replacements on the human spine, automotive safety biomechanics, the role of trabecular orientation in vertebral strength and the role of tissue-level ductility in hip and spine fractures, and the effects of ionizing radiation on the material properties of bone.

Berkeley Emergent Space Tensegrities (BEST) Lab

**Location:** 230 Hesse Hall

**Faculty:** Professor Alice Agogino  
**Student in Charge:** Alan Zhang

**Description:** The BEST Lab conducts research at the intersection of cutting-edge frontiers in design research, computational design, sustainability, gender equity, human-machine cognition, supervisory control, soft robotics, sensor fusion, design research and intelligent learning systems.

HiPeRLab

**Location:** 1176C Etcheverry Hall  
**Open Hours:** 11am-2pm

**Faculty:** Professor Mark Mueller  
**Student in Charge:** Xiangyu Wu

**Description:** The group focuses on low-level research on fundamental capabilities for Unmanned Aerial Systems. Areas of particular focus are safety and localization; we aim to enhance the systems' capabilities by advanced algorithms, mechanical design, and control strategies.

Model Predictive Control Lab

**Location:** 2169 Etcheverry Hall

**Faculty:** Professor Francesco Borrelli  
**Student in Charge:** Jon Gonzales

**Description:** Focuses on the theoretical and real-time implementation aspects of constrained predictive model-based control. We deal with linear, nonlinear and hybrid systems in both small scale and complex large scale applications. Our contributions include the discovery of fundamental theoretical results, the development of novel control algorithms and their experimental validation carried out with the help of coworkers from industries and universities. We deal with a wide range of systems in the automotive field, in the process industries and in robotics, including several full scale industrial problems.

Mechanical Systems Control Lab

**Location:** 2103 Etcheverry Hall

**Faculty:** Professor Masayoshi Tomizuka  
**Student in Charge:** Yongxiang Fan

**Description:** The MSC Lab focuses on designing and developing control strategies for mechanical systems.

Nano/Energy lab

**Location:** 4164 Etcheverry Hall

**Faculty:** Professor Chris Dames  
**Student in Charge:** Wyatt Hodges

**Description:** Our research spans a range of topics in nanoscale heat transfer and energy conversion. Both modeling and experiments are used to study a variety of classical and quantum size effects for improved fundamental understanding and device performance.