California State University, Long Beach (CSULB) was ranked as one of the top three public masters universities in the west by *U.S. News and World Report* in its 2005 “America’s Best Colleges Guide”, based on measures indicating the academic quality of colleges and universities. The Department of Mechanical and Aerospace Engineering (MAE) is one of the five departments in the College of Engineering (COE). The department has 20 full-time faculty, more than 15 part-time faculty, 4 full-time staff, 480 undergraduate and 140 graduate students, and houses several state of the art facilities and laboratories. The MAE Department has a long history of collaboration in the areas of research and education with many government agencies and major local companies such as The Boeing Company, Northrop Grumman, and Honeywell.

**Program Educational Objective**
The Master of Science in Mechanical and Aerospace Engineering programs have been created to educate students in subjects relevant to the requirements of industry and in deductive reasoning which will benefit them and the community. These programs are unique in their emphasis on practical applications and intimate interaction with industry. They involve the most modern computational and experimental methods and provide the essential information permitting the students to acquire knowledge and skills of immediate practical importance. This knowledge is communicated in the courses and used in the conduct of a thesis project to be carried out with participation from industry.

Graduate program information and course descriptions can be found on the MAE web site @ [http://www.csulb.edu/colleges/coe/mae/](http://www.csulb.edu/colleges/coe/mae/).

**Master of Science in Aerospace Engineering (MSAE):** [MAE_MS01]
- Space Systems Engineering
- Aerodynamics & Computational Fluid Dynamics (CFD)
- Aerospace Structures and Materials

**Master of Science in Mechanical Engineering (MSME):** [MAE_MS02]
- Dynamics, Vibration and Controls
- Fluid and Thermal Sciences
- Materials
- Mechanics
- Design and Manufacturing

**College of Engineering Programs:**

**Master of Science in Engineering (MSE):** [COE_MS01]
with an area concentration in:
- Management Engineering
- Interdisciplinary Engineering

**Ph.D. in Engineering and Industrial Applied Mathematics:** [COE_PH01]
Graduate program information and course descriptions can be found on the MAE web site @ [http://www.csulb.edu/colleges/coe/mae/](http://www.csulb.edu/colleges/coe/mae/).

The MAE Department Office is located in the Engineering & Computer Science (ECS) building, Room 635, Phone: (562) 985-1563, Email: me-info@csulb.edu, Mailing Address: Department of Mechanical and Aerospace Engineering California State University, Long Beach 1250 Bellflower Boulevard Long Beach, California 90840-8305

**Department Chairperson:** Dr. Hamid Hefazi, ECS-606, (562) 985-1502, hefazi@csulb.edu

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<th>AE GRADUATE ADVISOR</th>
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<td>DR. HSIN-PIAO CHEN</td>
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The College of Engineering has a Center for Recruitment and Retention, which has important information about applications, admissions and advising: [http://www.csulb.edu/colleges/coe/aac/](http://www.csulb.edu/colleges/coe/aac/). Enrollment Services at CSULB also has information about admission, registration, financial aid, graduation, etc. [http://www.csulb.edu/depts/enrollment/](http://www.csulb.edu/depts/enrollment/)

**Student Projects**

These projects are important opportunities for students to apply their knowledge to practical application. Current projects include:

**CALVEIN Rocket Project:** In this nationally recognized project, interdisciplinary teams of students develop and flight test (from a site in Mojave Desert) prototype liquid-propelled launch vehicles. Students of all levels (freshman to senior) can participate. The project also offers a number of paid scholarships to qualified and active students. ([http://www.csulb.edu/rockets](http://www.csulb.edu/rockets))

**Formula SAE Competition:** The Formula SAE competition is for SAE student members to conceive, design, fabricate, and compete with small formula-style racing cars. The restrictions on the car frame and engine are limited so that the knowledge, creativity, and imagination of the students are challenged. The cars are built with a team effort over a period of about one year and are taken to the annual competition in Pontiac, Michigan (Pontiac Silverdome) for judging and comparison with approximately 120 other vehicles from colleges and universities throughout the world.

**Mini-Baja:** The object of the Mini-Baja West competition is to provide SAE student members with a challenging project that involves the planning and manufacturing tasks found when introducing a new product to the consumer industrial market. Teams compete against one another to have their design accepted for manufacture by a fictitious firm. Students must function as a team to not only design, build, test, promote, and race a vehicle within the limits of the rules, but also to generate financial support for their project and manage their educational priorities.

**Human-Power Vehicle (HPV):** HPVs are aerodynamic, highly engineered vehicles that may be used on land, in the water, or in the air. ASME holds a Human Powered Vehicle Challenge each spring. ASME sponsors the Human Powered Vehicle Competition in hopes of finding a design that can be used for everyday activities ranging from commuting to and from work to going to the grocery store.

**Internships at the Boeing Technology Center**

The CSULB College of Engineering is designated as a Boeing company “focus school”, and is home to the “Center for Advanced Technology Support for Aerospace Industry (CATSAI)”. A strategic partnership between the Boeing Company and CSULB, the center offers many opportunities for MAE students and faculty to work with Boeing company engineers, as interns, on real engineering projects.