The College of Engineering and the University of Hawai‘i at Mānoa

The College of Engineering is a multifaceted institute comprised of approximately 55 faculty members, 950 undergraduate students, and 180 graduate students, with external funding of $8.5 million per year.

SUSTAINABILITY The College takes inspiration from traditional Native Hawaiian land management systems, once able to sustain large populations, in order to create programs that address the challenges now faced by the islands. Such examples include building and maintaining renewable energy resources, providing clean drinking water, mitigating the effects of sea-level rise associated with global warming, becoming resourceful recyclers and re-manufacturers, minimizing the need for imported goods and sustaining a pristine environment.

INFRASTRUCTURE IN SUPPORT OF THE ENVIRONMENT
Graduates of our College are employed throughout the state to manage all aspects of its environment, from its buildings and roadways, to its harbors, sea defenses and water and waste systems, thus making it imperative that we retain capacity in order to continually service Hawai‘i’s future growth.

IT AND CYBER SYSTEMS The College is well known for its contributions to “clean” technologies such as information technology (IT) and communications infrastructure, which will be central to the future of Hawai‘i’s industry.

RESEARCH CLUSTERS The College also has identified eight cross-cutting research clusters that all departments and centers in the College contribute toward:

• Autonomous Systems and Robotics
• Big Data and Cyber Security
• Biomedical Engineering
• Coastal Infrastructure
• Computer and Computational Engineering
• Sustainable Materials and Manufacturing Technology
• Renewable Energy and Island Sustainability
• Water, Waste and Environmental Engineering

These areas have been chosen to reflect faculty interest and expertise, as well as the evolving needs of Hawai‘i. They also represent some of the main interests of the College’s collaborators in their research efforts inside the University, within the local community and further afield. The College is especially interested in extending these relationships to local and mainland companies, U.S. mainland and Asian universities, as well as other potential partners.
The Engineering Program

The engineering program is widely considered to be one of the most challenging at UH Mānoa. However, College of Engineering students can choose to participate in the UH Mānoa Honors Program, which provides students with additional challenges and corresponding rewards, while enjoying the best of both worlds of the small college environment created by the Honors Program and the large research university environment provided by UH Mānoa. This option is available to all undergraduate students pursuing any of the College’s undergraduate degrees: civil and environmental engineering, electrical engineering, computer engineering and mechanical engineering.

Interested Students

Students interested in the Honors Program option should consult the following prior to making a decision: a College of Engineering undergraduate advisor and faculty advisor, and an Honors Program advisor. Interested students should also visit the Honors Program website: www.honors.hawaii.edu

Honors Program Components and Requirements

The Honors Program has two distinct components and corresponding requirements in the lower division and upper division:

SELECTED STUDIES – Lower Division Component

Selected Studies is the lower division component of the Honors Program for freshmen and sophomores. Benefits of this program include:

• early registration
• scholarship funds for independent research
• small, rigorous, discussion-based classes
• personalized academic advising
• engagement in leadership and service
• housing with other Honors students
• graduate school preparation

To remain in good standing for Selected Studies, students must:

• take at least one A Section or Honors course per semester,
• maintain a cumulative GPA of 3.2, and
• fulfill the Engagement Requirement

Please refer to the Honors Program web site for specific information on these requirements.

UPPER DIVISION HONORS – Upper Division Component

To be eligible to graduate with an Honors Degree, upper division students must earn a total of 12 credits, six of which are in preparatory seminar classes, and six of which are credit for independent research and creative work.

Currently, the graduation requirements for Honors Students comprise of the following:

• HON 491 Junior Seminar (3 credits) “Project-based experiential learning involving community-based research or creative work. Focus on project design, practical skills, and teamwork” OR any 6XX course in Engineering

• HON 495 Introduction to Research (3 credits) “Library research skills; scholarship of research and creative work; methodological and ethical issues; development of individual proposal or prospectus for Senior Honors Project”

As part of the Honors Program requirements, students must present their research proposals (oral or poster format) at the Fall Forum or Spring Symposium.

COLLEGE OF ENGINEERING SUBSTITUTIONS FOR SENIOR HONORS PROJECT HON 496

In lieu of the 6-credit/2-semester HON 496 requirement, Honors track majors will take the following courses, depending on their major, to work on the project that will be the foundation for their Senior Honors Project.

Civil and Environmental Engineering

• CEE 490 Senior Design Project
• HON 496 Senior Honors Project

Electrical Engineering/Computer Engineering

• EE 496 Capstone Design Project
• EE 496 Capstone Design Project (3 credits) or HON 496 Senior Honors Project

Mechanical Engineering

• ME 481 Design Project I
• ME 482 Design Project II

In order to ensure that honors students perform beyond what is required of all students, the College of Engineering requires them to complete a Senior Honors Project (sometimes referred to as the Honors Thesis). This project should expand the research and design projects that students undertake in their design courses, be closely supervised by a faculty member (thesis advisor) in the department, and be written up according to the criteria of the Honors Program. The Senior Honors Project may build on or include one of the following:

• Participation in a national competition for the design
• A patent disclosure on the design with the approval of the instructor, Chair, and Dean
• Submission or presentation of a conference paper on the design
• Participation in the UH Business Plan competition based on the design, which is sponsored by the Shidler College of Business PACE Program

As part of the requirements, students must give an oral presentation of their Senior Honors Project at the Fall Forum or Spring Symposium.