EnVision
Arts and Engineering Maker Studio

Transforming Education

A new 3,000 square foot maker studio at UC San Diego provides engineering and visual arts students with a wide range of design, fabrication and prototyping tools.

It's a creative, experiential space where students are empowered to think, design, make, tinker, break and build again.

UC San Diego faculty create innovative, hands-on courses that take advantage of the studio's 3-D printers, welding stations, laser cutter, PBC mill and much more. Every project is tied to concepts and theory that students will encounter in more advanced classes.

EnVision opened to students in January 2016, and more than 400 students worked in the maker studio during its first quarter of operation.

"We are giving students new opportunities to gain the confidence and motivation they will need to succeed in classes, internships, faculty research projects and ultimately their careers."

Albert P. Pisano, Dean
Jacobs School of Engineering
UC San Diego

EnVision Maker Studio: it's a creative space.

- Laser cutter
- Vacuum thermo former
- Printed circuit board mill
- 3-D printers

- Soldering stations
- Microscopes
- Prototyping stations
- Hand tools on mobile tool carts

More Making Capacity

With high voltage circuits, 3-phase power, and ample venting, the studio has room for additional making equipment.

Nate Delson
Maker Studio Faculty Director

Jesse DeWald
Maker Studio Staff Director

Contact Us
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Experience Engineering Initiative

Hands-on Education

The Jacobs School of Engineering's Experience Engineering Initiative is a school-wide effort that aims to give engineering and computer science undergraduate student a hands-on or experiential engineering course or lab each and every year — starting freshman year. These hands-on classes serve as "spring training" for future internships, research projects and full-time jobs.
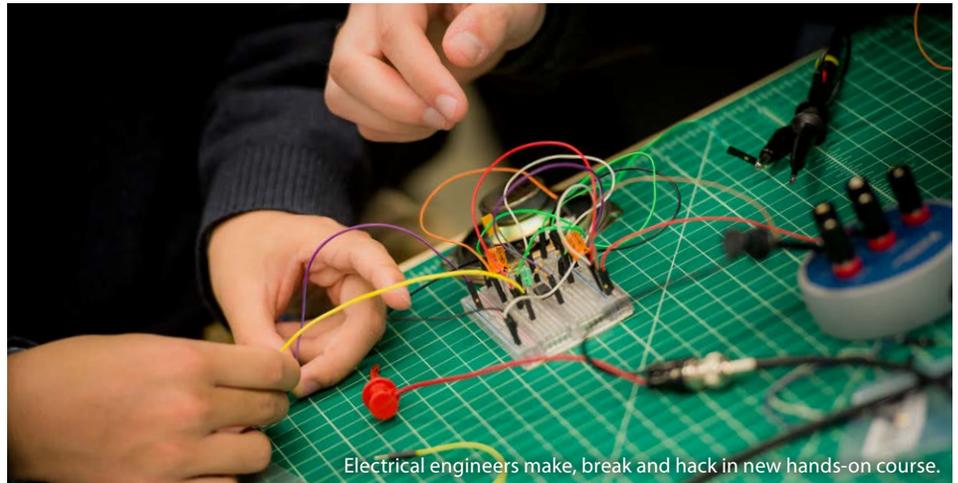
Electrical engineers make, break and hack in new hands-on course.

Experience Engineering Courses Examples

ECE 5 **Making, breaking and hacking electrical engineering**

Students debug sensors and microcontrollers, work on signal processing and programming, and build circuits and line-following robots.

BENG 1 **Introduction to bioengineering**

Hands-on intro to central topics and tools of bioengineering via projects involving electrophysiology, glucose monitoring for the blind, and 3-D bone printing.

CENG 4 **Experience chemical engineering**

Hydrogen fuel-cell cars, 3-D printed water cooling setups, and intuitive fluid dynamics projects expose students to modern chemical engineering.

MAE 3 **Introduction to engineering graphics and design**

Intro to the design process through hands-on team design projects such as building pendulum clocks and robots.

CSE 91 **Gadgetron Robot Factory**

Computer science students build and program robots while getting exposure to Gadgetron Robot Factory, Arduino, hand tools and the PCB mill.

NANO 4 **Experience nanoengineering**

Students build flexible, rechargeable batteries, split water and explore graphene electronics.

SE 1 **Introduction to structures and design**

Students explore structural engineering through hands-on projects. Some students even collaborate on final projects with visual arts students.