

CAL POLY MATERIALS ENGINEERING SENIOR PROJECTS



SENIOR PROJECTS as a Capstone Experience in the MATE Curriculum

The Materials Engineering Senior Project Design sequence takes place during the last, complete academic year for MATE students. Students may work in teams or individually, and are advised by a MATE faculty member. The projects can be student-generated, part of faculty research, or sponsored by industry or community partners.

<p>Fall (MATE 482) Project & Advisor defined Literature Review Project Proposal</p>	<p>Winter (MATE 483) Design of Experiments Safety & Expt. Procedures Design Review</p>	<p>Spring (MATE 484) Tech Conference Presentation Project Expo Poster Project Report (digital commons)</p>
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Sponsored projects provide context that:

- Enables students to obtain a well-rounded experience focusing on real world engineering problems.
- Gives your organization a new look at problems you need to solve. Both students and faculty will focus their experience and abilities on solving your problem.
- Allows you to observe individual students who you may consider for future hiring.
- Gives you the chance to directly contribute to the education of future engineers.

Interested parties can contact the MATE Department, matedept@calpoly.edu to discuss project sponsorship. Faculty typically define projects with collaborators and sponsors during the summer.

2015-16 MATE SENIOR PROJECTS:

- 13 Industry Sponsored Projects (provided project idea/mentorship, paid fee, and/or furnished supplies)
- 6 Faculty Research
- 2 Student Generated Projects

Project examples that demonstrate a breadth of project topics to serve a diverse set of student goals and interests, *from basic research to applied development:*

Flexible Polymer to Protect Carbon Fiber Wallet Hinges
 Durability of P2-Etched Adhesively Bonded Al Alloys
 PLA/Carbon Black Conductive Composites for FDM Feedstock
 Tensile Strength of Connecting Rod Bolts for Race Car Engines
 Mechanical Properties of Solid-State Resistance Welded Medical Guide Wires
 Characterization of Optically Telegraphed Composite Laminations

Prior Austenite Grain Size Comparison from McQuaid-Ehn and Picric Acid Tests
 Hydrogen Effects in High Strength Landing Gear Steel
 Reducing Packaging Waste with Edible Fruit-Based Packaging Prototypes
 Qualifying Welding Procedures in A36 Steel
 Casting and Testing of Arabinan-Cellulose Nanocomposites

