

# IOWA STATE UNIVERSITY

## Department of Materials Science and Engineering

### What does DESIGN mean?

solving problems  
answering questions  
characterization  
modeling/calculation  
iterative design  
analysis  
recommendations for optimization  
evaluation  
development  
synthesis  
process

### What are the BENEFITS to our company?

students provide **insight** into existing problems

students and faculty mentor offer **specialized knowledge**

students provide **man power and time** for projects that may otherwise be put on hold

engage with students as **potential employees**

have access to **equipment and expertise** not available at your own site

**visibility** of your organization on campus

provides a **gateway for a broader relationship** with MSE

### What have other projects been?

**characterization** of material properties and understanding of **direct laser sintering**

investigating the **corrosion behavior in lead-free solders**

determining **mechanical properties** of maraging steel produced by **selective laser melting**

determining dependence of **physical properties of soluble glasses on synthesis route**

**rapid prototyping** of polyactic acid crystal models

### What should we do if we are interested?

Contact:  
**Martha Selby**  
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515-294-0195

fill out a **'Project Information Sheet'** with contact information, project description, resources, deliverables, interest area, and financial commitment

Determine **project objectives and criteria**

Recent senior design business partners include:

**Emerson/Fiser Controls | Metalcraft, Inc. | Honeywell | 3M | Ervin Industries | Ozonics Hunting SAFI-Tech | John Deere | Rockwell Collins | Stellar Industries | Wilson Trailer**

### How does it work?

- This is a 2 semester course, offered in both fall and spring semester.
- It is an industry sponsored project.
- There are teams of 3-4 students and 1 faculty mentor.
- Students work 10-15 hours/week or 500-700 student hours in total.
- A \$1000 financial commitment as a reimbursement for itemized costs is required and company approval is required before a group can go over that dollar amount.
- Companies must provide resources such as samples, supplies, or specialized equipment.
- An engineer within the company should be assigned as primary point of contact.
- Consider student travel to the company or a company visit to Iowa State University.
- Companies should provide deliverables such as reports/analyses, prototypes, models, data, etc.
- A non-disclosure agreement form is available in cases where confidential information is handled.
- There is also an agreement to assign any intellectual property to your company as desired.