Does your company have potential BE Capstone Design Projects?

Do you want to support the BE Capstone Design Program?

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Support BE Capstone Design Projects for:

- **Solutions to industry challenges**
- **Future employees with experience**

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MICHIGAN STATE UNIVERSITY

Department of Biosystems & Agricultural Engineering

Biosystems Engineering Capstone Design Projects

Real world design projects:

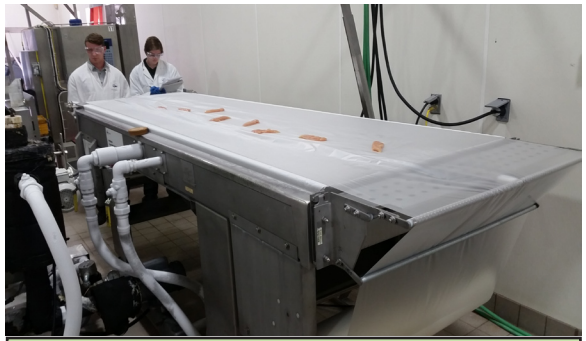
- **Solved by student teams**
- **Advised by faculty**
- **Supported by industry**

Specialty areas:

- **Bioenergy Engineering**
- **Biomedical Engineering**
- **Ecosystems Engineering**
- **Food Engineering**

A Capstone Design Project:

- Requires engineering design
- Combines biology and engineering
- Solves a real problem
- Uses a holistic and systems approach
- Interprets data and statistics
- Interprets social and environmental impacts
- Evaluates economic feasibility
- Delivers a comprehensive, professional design report
- Requires team presentations to industry, faculty, general community, and peers



Since 1906, the Department of Biosystems & Agricultural Engineering has responded to the changing needs of society by integrating and applying principles of engineering and biology in a systems context. Today, biosystems engineers at MSU solve complex, rapidly-changing problems related to food production, quality and safety, ecosystems protection, homeland security and health protection, biomass utilization, and renewable energy development.

Recent Project Examples:

Bioenergy Engineering

Torrefaction Process Improvement
Increase product yield of torrefaction process.
Sponsor: Heat Transfer International

Wastewater Treatment Using Anaerobic Digester
Design and develop a novel, efficient pilot-scale (0.45 m3) up flow and fixed film anaerobic digester.
Sponsor: Technova

Biomedical Engineering

Dried Blood Storage Device
Filter paper to efficiently dry and store blood samples.
Sponsor: Pfizer, Inc.

Design of a LED/Fiber Optic Treatment for Infant Jaundice
Design a portable, wearable, cost-efficient treatment for infant jaundice.
Sponsor: Sygiene

Ecosystems Engineering

Site Evaluation and Design Plan for a Created Forested Wetland Student
Designed wetland for US 27 road construction site.
Sponsor: Michigan Department of Transportation

Water Quality Best Management Practices Design for a City of Lansing Re-Development Project
Design of an efficient stormwater runoff treatment system for a parking lot re-development.
Sponsor: Tetra Tech

Food Engineering

Hydroponic Processing Optimization for Mung Bean Sprouts
Optimization of hydroponic system for mung bean sprouts.
Sponsor: ConAgra

Redesign of ProMix Batter Mixer Cooling Mechanisms
Redesign batter coolant system.
Sponsor: JBT FoodTech

Faculty:

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Narendra Das, PhD
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Biosystems Engineering (BE) is an ABET accredited B.S. degree program at MSU that prepares students for success by:

- identifying and solving problems at the interface of biology and engineering, using modern engineering techniques and the systems approach,
- analyzing, designing, and controlling processes and systems that involve critical biological components,
- demonstrating a professional foundation that includes vision, adaptability, creativity, a practical mindset, effective communication skills, continuing professional growth, and ethical conduct, and
- working inclusively and equitably in diverse, cross-disciplinary environments towards sustainable solutions.