Engineering for a sustainable world
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Bachelor of Bioproducts and Biosystems Engineering (BBE)

Bioproducts Engineering Emphasis
- Design and develop sustainable process and product solutions to meet the world’s growing materials, chemicals, and energy demands
- Apply process engineering principles and practices to renewable bioresources
- Design and improve sustainable manufacturing of biobased, green products, such as biofuels, bioenergy, biochemicals, bioplastics, paper, building materials, and composites

Food Engineering Emphasis
- Create sustainable solutions to address the global need for food security
- Provide safe, high quality, and nutritious food and promote healthy living
- Design, develop, and implement food processing and manufacturing technologies

Bioproducts Engineering Emphasis
- Explore, develop, and implement effective systems and sound solutions to address human impact on our natural environment
- Focus on applications to land and water resources, and water, air, and soil quality
- Utilize and improve methods of land-use management, ecosystem services, ecological restoration, and waste management

Environmental and Ecological Engineering Emphasis
Bioproducts Engineering

Emphasis

**DESIGN**

Sustainable processes and products, including renewable and clean energy, renewable materials, and biochemicals.

**CURRICULUM**

Strong foundation in math, science, and engineering fundamentals, including their applications to biological processes, biological resources, and their effective conversion to biobased products and their end-use applications.

**CAREER OPPORTUNITIES**

BBE graduates specializing in bioproducts engineering pursue exciting careers involving the design, development, and implementation of process technologies and solutions for the sustainable utilization of renewable bioresources and manufacturing of biobased products, including biofuels, bioenergy, biochemicals, bioplastics, paper, building materials, biocomposites, and their applications.

**POSITIONS**

- Process Engineer
- Bioprocess Engineer
- Bioproducts Engineer
- Product Design Engineer
- Product Development Engineer
- Production Engineer
- Technical Sales Engineer
- Engineering Consultant
- Plant Manager

**EMPLOYERS**

- 3M
- Appvion
- Boise Paper
- Cargill, Inc.
- Ecolab, Inc.
- Georgia-Pacific
- Amec Foster Wheeler
- Anderson Corporation
- Donaldson Company
- Renewable Energy Group, Inc.
- Kerry Group
- POET
- Virent, Inc.
- WestRock
- Weyerhaeuser
- POET
- Virent, Inc.
- WestRock
- Weyerhaeuser
- POET
- Virent, Inc.
- WestRock
- Weyerhaeuser
CREATE
important processes, systems, and solutions to address the world’s growing need for food security, food safety, and healthy lives.

CURRICULUM
Strong foundation in math, science, engineering fundamentals, food science, and their applications to food processing, biological processes, food quality, food safety, and food security.

POSITIONS
- Food Engineer
- Bioprocess Engineer
- Process Engineer
- Product Design Engineer
- Plant Manager
- Research Engineer
- Engineering Consultant

CAREER OPPORTUNITIES
With the growing world population and the increasing demand for safe and healthy food, the job market for BBE graduates with food engineering emphasis is excellent. Innovative careers are available in a variety of sectors, including food processing, bioprocessing, ingredient manufacturing, food packaging, machinery, equipment, instrumentation and control, as well as pharmaceutical, nutraceutical, and health care.

EMPLOYERS
Cargill, Inc.  SSOE Consulting
FiberStar Inc.  Virent, Inc.
Frito-Lay, Inc.  Weyerhaeuser
General Mills Inc.
Hormel Foods Corp.
Kellogg Company
Kerry Group
Land O’ Lakes, Inc.

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Environmental and Ecological Engineering

**Emphasis**

*EXPLORE*

engineering, environmental, and ecological principles to develop sustainable solutions to address human impact while protecting and enhancing the environment.

**CAREER OPPORTUNITIES**

BBE graduates specializing in environmental and ecological engineering pursue a wide range of exciting careers addressing water resources and water quality, air quality and pollution control, soil conservation and sustainable use of natural resources. Areas include erosion and sediment control, bioreactor design and use, environmental bioremediation, pollution mitigation, and watershed management.

**EMPLOYERS**

- Barr Engineering
- MN Board of Water and Soil Resources
- MN Department of Natural Resources
- MN Department of Transportation
- MN Pollution Control Agency
- Short Elliott Hendrickson (SEH), Inc.
- SRF Consulting Group
- Watershed Districts

**CURRICULUM**

Strong foundation in math, science, engineering fundamentals, and their applications to environmental and ecological systems, natural resources and their conservation, waste management, and environmental sustainability.

**POSITIONS**

- Environmental Engineer
- Ecological Engineer
- Biosystems Engineer
- Water Resources Engineer
- Engineering Consultant
- Project Manager
- Resource Conservation Engineer
- Project Engineer
Studying Bioproducts and Biosystems Engineering has given me the opportunity to explore a variety of interests and industries, all while knowing that what I’m doing will make a difference. From studying renewable energy production in Scandinavia to an internship working on global food security in East Africa and sustainable agriculture here at home, I’ve been lucky to learn from some truly incredible experiences.

— Elizabeth

“BBE has given me an education that extends beyond the classroom. Interning with the department and participating in student groups has provided an opportunity to utilize class concepts and get to know fellow students and staff. The BBE department recognizes hard working students with great scholarship opportunities and makes students feel appreciated.”

— Blair

The Student Experience

BBE is an innovative engineering program that provides a small-college experience with all of the advantages of a Big Ten research university:

- Small class sizes
- Numerous student-organized groups
- Exceptional student support and mentoring
- Opportunities to get to know and work with faculty
- Personal and professional development
- Internships and research opportunities
- Experiential learning

“Studying Bioproducts and Biosystems Engineering has given me the opportunity to explore a variety of interests and industries, all while knowing that what I’m doing will make a difference. From studying renewable energy production in Scandinavia to an internship working on global food security in East Africa and sustainable agriculture here at home, I’ve been lucky to learn from some truly incredible experiences.”

— Elizabeth
Your future looks bright with BBE

“My degree in BBE fills a very important niche in society and one that is only set to grow exponentially.”

- Nicholas

An engineering curriculum that will prepare you for a vital role in the global, sustainable bioeconomy.

Nearly 100% job placement for students who take advantage of internships, co-ops, and mentoring opportunities.

Closely aligned with employer demand, this degree has excellent career opportunities in consulting and engineering firms, industry, and government agencies. Graduates will also be prepared for continuing their education at the graduate level in engineering, science, business, medicine, and law.

Competitive starting salaries

Process Engineer
Environmental Engineer
Food Engineer
Project Engineer
Ecological Engineer
Product Development Engineer

Bioprocess Engineer
Research Engineer
Water Resources Engineer
Engineering Consultant