Manufacturing Engineering

What Do Manufacturing Engineers Do?

Manufacturing engineers use complex systems, high-tech equipment, robots, and machines to convert a few pennies worth of raw materials into finished products worth hundreds of times that. Be ready for the exciting world of manufacturing.

What Skills Are Needed?

Manufacturing engineers draw upon a wide array of skills—math, science, and interpersonal. They also need good manual skills and an appreciation for things well made. Most of all, they need vision, creativity, and ambition.

Where Can I Work After Graduation?

Bradley manufacturing graduates currently hold leadership positions at companies such as The Boeing Company, Caterpillar Inc., John Deere & Co., Ford Motor Company, Motorola, and Hewlett Packard. Bradley's manufacturing graduates have an average starting salary exceeding $57,734 per year.

Reasons to Choose this Program

1. The average salary for industrial or manufacturing engineers with a BS degree is $57,734, which is higher than that of engineers holding a BS in some other disciplines.

2. CNN Money reports that Industrial (System) Engineering is ranked #1 for the top 50 US jobs with a 45% job growth outlook from now to year 2016.

3. Our department has constructed a new curriculum focusing on engineering management courses in industrial, manufacturing, health care, service, and supply chain fields.

4. In our department, you will have an opportunity to learn new technologies in the "Manufacturing Laboratory" for new Generation Engineers - a $2 million federal grant announced December 4, 2009.

5. Team projects are directly related to the field, so students get a hands-on experience before they graduate.

6. Internship opportunities are provided for our students with hourly rate wages ranging from $15-$19 per hour.

Bradley University Contact Info

Check out our website at http://imet.bradley.edu/

For faculty and staff contact information, please see the individual faculty and staff pages on the website.

Should you wish to contact us regarding the program, please direct your special inquiries to:

Dr. Joseph Chen, Ph.D., P.E.
Department Chairman
Phone: (309) 677-2740
Office: 110B Morgan Hall
Email: jchen@bradley.edu
Program of Study – Engineering, College of Lake County

First Year

**First Semester — 19 hours (17 BU credits)**
- CHM 121 General Chemistry (CHM 110+111-4*) 5
- ENG 121 English Composition I (ENG 101-3*) 3
- EGR 121 Engineering Graphics (IME 103-3*) 3
- MTH 145 Calculus I (MTH 121-4*) 5
- General Education 3

**Second Semester — 20 hours (16 BU credits)**
- MTH 146 Calculus II (MTH 122-4*) 4
- CHM 123 General Chemistry II (CHM 112-3*) 5
- CMM 121 Fundamentals of Speech (COM 103-3*) 3
- PHY 123 Physics for Science and Eng. I (PHY 110-3*) 5
- General Education 3

**Summer Session - 7 hours (5 BU credits)**
- EGR 222 Engineering Mechanics: Dynamics (CE 270-3*) 3
- PHY 221 Physics for Science and Eng. III (PHY 202-2*) 4

Second Year

**First Semester — 18 hours (17 BU credits)**
- MTH 246 Calculus III (MTH 223-4*) 4
- PHY 124 Physics for Science and Eng. II (PHY 201-4*) 5
- EGR 125 Statics (CE 150-3*) 3
- General Education 3

**Second Semester — 15 hours (11 BU credits)**
- EGR 225 Dynamics (CE250-3*) 3
- MTH 227 Ordinary Differential Equations (MTH 224-3*) 3
- MCS 140 Computer Programming for ENg.(IME 105-2*) 3
- General Education 3

*Credits Transfer to Bradley University

**A transfer student can receive a minor in Business Administration at Bradly with only 16 credits in addition to the total credit hours regained for major.

For Information Contact:
CLC Counseling Center Rm C-110
Phone: (847) 543-2060

---

BSMFE – Bachelors of Science in Manufacturing Engineering, Bradley University

**Junior Year**

**First Semester - 16 hours**
- IME 101 Introduction to Industrial and Manufacturing Engineering 1
- IME 341 Introduction to Manufacturing Processes 3
- IME 331 Fundamentals of Materials Science 3
- IME 395 Solid Model & Rapid Prototyping 3
- IME 301 Engineering Economy 3
- Technical Elective 3

**Second Semester - 15 hours**
- IME 386 Industrial & Managerial Engineering 3
- IMT 362 Metrology and Instrumentation 3
- IME 441 Advanced Manufacturing Processes I or IME 443 Advanced Manufacturing Processes II 3
- IME 302 Introduction to Quality Engineering 3
- Concentration Core (or) MFE elective I 3

**Senior Year**

**First Semester 18 hours**
- Technical Elective 3
- IME 431 Materials Engineering 2
- IME 333 Materials Science Laboratory 1
- Concentration Core (or) MFE elective II 3
- Concentration Core (or) MFE elective III 3
- EE 327 Fundamentals of Electrical Engineering I 3
- IME 445 Computer Aided Manufacturing Processes 3

**Second Semester 16 hours**
- IME 499 Senior Design Project 4
- Eng. 305 Technical Writing 3
- Concentration Core(or) MFE elective IV 3
- Technical Elective 3
- Technical Elective 3

For Information on Manufacturing Engineering Contact:
Joseph Chen at (309) 677-2740 or jchen@bradley.edu

---

Concentration Requirements

The program offers students two concentration options:

**Process Engineering Concentration**

Process engineering concentration would be aimed at providing the graduates with a strong set of knowledge and skills in product design, manufacturing processes, materials selection and design, automation, and manufacturing systems. The unique courses for this concentration are:

- IME 325 Transport Phenomena
- IME 441 Advanced Manufacturing Processes I or IME 443 Advanced Manufacturing Processes II
- IME 447 Advanced Joining and Fabrication
- IME 495 Design for Manufacturability

**Lean Manufacturing Concentration**

Lean manufacturing concentration on the other hand would prepare the graduates to concentrate on creating more value with less work, through cost reduction by the elimination of waste in manufacturing. They would learn about principles like pull processing, perfect first-time quality, waste minimization, continuous improvement, Six Sigma utilization, flexibility, and production flow. The unique courses for this concentration are:

- IME 412 Design & Analysis of Experiments
- IME 466 Facilities Planning
- IME 481 Lean Production Systems
- IME 486 Logistical & Supply Chain Systems

*in process of approval