

Industrial Engineering

Combine engineering skills with business principles

Industrial Engineering is concerned with the design, improvement, and installation of integrated systems. These systems may involve people, materials, information, equipment, or energy. The work of industrial engineers involves carefully analyzing and improving these systems. IEs have a strong background in mathematical, physical, and social sciences, as well as in engineering analysis and design.

The Big Picture

Industrial engineers have a slightly different focus than other engineers. Instead of focusing on engines, gears, circuits, or bridges, IEs concentrate on overall systems and processes. They step back and look at the big picture so they can improve quality and productivity in a wide range of environments.

List of Scholarships

Presidential Scholarship

Deans Scholarship

Caterpillar Employee Dependents Scholarship

Legacy Scholarship

State-Specific Scholarships

Transfer Scholarship

Transfer Excellence Scholarship

IMET Scholarships

Nearly \$65,000 in department scholarships are awarded annually to undergraduate students enrolled in Industrial Engineering, Manufacturing Engineering and Manufacturing Engineering Technology.



Engineering
Accreditation
Commission

*The baccalaureate program in Industrial engineering is accredited by the Engineering Accreditation Commission of ABET,
<http://www.abet.org>*

Reasons to Choose this Program

1. The average entry-level salary for industrial or manufacturing engineers with a BS degree is **\$61,887** which is higher than that of engineers holding 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.
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.
5. Team projects are directly related to the field, so students get a hands-on experience before they graduate.

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.
Caterpillar Professor
Department Chairman
Phone: (309) 677-2740
Office: 110B Morgan Hall
Email: jchen@bradley.edu

Degree Obtained at



Transfers To



Industrial Engineering Program

Transfer From Black Hawk to Bradley University

Department of
Industrial & Manufacturing
Engineering & Technology

Updated: March 7, 2018



Program of Study – Pre-Engineering(IE), Black Hawk

First Year

First Semester – 17 hrs (16 BU credits)

CHEM 101 General Chemistry I (CHM 110+111 -4*)	4
ENG 101 Composition I (ENG101 -3*)	3
GE 101 Engineering Graphics & Geometry (IME103 -2*)	3
MATH 124 Calculus I (MTH 121 -4*)	4
ECON 222 Micro Economics (ECO 221 -3 *)	3

Second Semester – 15 hrs (15 BU credits)

MATH 225 Calculus II (MTH122 -4*)	4
PHYS 201 General Physics (PHY110 -4*)	5
SPEC 101 Prin. of Speech Communication(COM 103-3*)	3
BCC Multidisciplinary Integration**	3

Second Year

First Semester – 16 hrs (14 BU credits)

MATH 226 Calculus III (MTH223 -4*)	5
PHYS 202 General Physics (PHY201 -4*)	5
GE 201 Analytical Mechanics: Statics (CE150 -3*)	3
CS 101 Intro to Structured Programming (IME 110 -3*)	3

Second Semester – 15 hrs (15 BU credits)

MATH 235 Differential Equations (MTH224 -3*)	3
GE 205 Ele. Mechanics of Deformable Bodies (CE270-3*)	3
BCC Humanities**	3
BCC Fine Arts **	3
BCC Global Perspectives**	3

*Credits Transfer to Bradley

**Bradley Core Curriculum (BCC) courses may be fulfilled at Black Hawk or Bradley. Consult an advisor for approved courses

For Information Contact:

Cathryn Lass ,Articulation/Transfer Coordinator
Phone: (309)-796-5474 or
email: lassc@bhc.edu

BSIE – Bachelors of Science in Industrial Engineering

Bradley University

Junior Year

First Semester- 16 hrs

IME 101 Intro. To Industrial & Manufacturing Eng.	1
IME 301 Engineering Economy	3
IME 311 Intro to Engineering Statistical Methods	3
IME 313 Operations Research I	3
IME 341 Intro to Manufacturing Processes	3
ENG 305 Technical Writing	3

Second Semester- 17 hrs

IME 341 Intro to Manufacturing Processes	3
IME 305 Engineering Economy II	2
IME 312 Engineering Statistical Methods	3
IME 331 Fundamentals of Materials Science	3
IME 386 Industrial & Managerial Engineering	3
Technical Elective I	3

Summer Session — 3 hrs

Technical Elective II	3
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Senior Year

First Semester 18 hrs

IME 466 Facilities Planning	3
IME 485 Occupational Ergonomics	3
Concentration Core (or) IE Elective I	3
Concentration Core (or) IE Elective II	3
Technical Elective III	3
Technical Elective IV	3

Second Semester 15 hrs

IME 361 Simulations & Expert System	2
IME 422 Manufacturing Quality Control	3
IME 499 Senior Design Project	4
Concentration Core (or) IE Elective III	3
Concentration Core (or) IE Elective IV	3

For Information on Industrial Engineering Contact:
Dr. John Yoo at (309) 677-3248 or jyoo@bradley.edu

Concentration Requirements

The program offers students three concentration options:

Engineering Management Concentration

The Engineering Management concentration incorporates 15 hours from the existing minor in Management that is already being offered by the Foster College of Business (FCB).

ML 250 Interpersonal Effectiveness in Organizations - 2hrs
ML 350 Managing for Results in Organizations - 2 hrs
ML 357 Leading Organizations - 2 hrs
ML 356 Human Capital in Organization - 3 hrs
Approved Management Minor Electives- 6 hrs
Technical Electives - 9 hrs

Logistics Engineering Concentration

The Logistics Engineering concentration emphasizes courses that will improve the student's analytical skills, particularly as they pertain to material procurement within complex supply chain systems.

PSY 321 Industrial and Organizational Psychology - 3 hrs
IME 481 Lean Production Systems - 3 hrs
IME 483 Production Planning and Control - 3 hrs
IME 486 Logistical Analysis Supply Chain Systems - 3 hrs
Technical Electives - 12 hrs

Systems Engineering Concentration

The Systems Engineering concentration gives the student a program that most closely resembles our traditional IE program.

IME 314 Operations Research II - 3 hrs
IME 461 Simulation of Human-Machine systems - 3 hrs
IME 468 Introduction to AI and Expert Systems - 3 hrs
IME 483 Production Planning and Control - 3 hrs
Technical Electives - 12 hrs

Notes

- Additional courses may be required.
- Two Writing Intensive Tagged Courses Required (See advisor for the list)
- Some courses of community colleges may not be transferable to technical electives of BSIE at Bradley. Please refer to the approved List of BSIE Electives for each BSIE concentration.
- Approved BCC classes are listed on the website at: https://www.bradley.edu/admissions/transfer/transfer_guides/