



WESTERN ILLINOIS UNIVERSITY

# Engineering

**Western Illinois University–Quad Cities, College of Business & Technology**

## **Program of Study**

The Engineering degree program prepares graduates to lead and thrive in the technology-driven global workplace. The program focuses on the practice of engineering with a broad curriculum that emphasizes basic engineering fundamentals. The program allows students to select electives from a number of areas to increase depth and expertise, including Mechanical, Civil, Materials, Manufacturing, Quality, Electrical, and Computer Engineering, and Engineering Management.

Western Illinois University–Quad Cities provides junior and senior Engineering courses at the Quad Cities campus, and the program articulates with Pre-Engineering transfer programs at the WIU-Macomb campus and community colleges in Illinois, Iowa, and Missouri. WIU-QC offers a dual enrollment program where students simultaneously enroll at a partner community college and the Engineering program. (Students enroll in the WIU Pre-Engineering program during their first 60 semester hours (SH) prior to full admission to the Engineering program.)

## **State-of-the-Art Engineering Program**

Western is the first public institution in the Quad Cities to offer Engineering. The program is unique because of its incorporation of design and teamwork throughout the curriculum, with ample opportunities for practical, hands-on engineering educational experiences. The program links to businesses, industry, and the Midwest Intellectual Property Management Institute (IP Institute) through required internships and senior capstone design projects.

## **Western and IP Institute Partnership**

The WIU-QC Engineering program is proud to announce its partnership with the IP Institute. This partnership allows Western to offer student internships and hands-on experiences working with government entities and international corporations. The IP Institute also provides students with opportunities to gain skills and knowledge from experts in the field of engineering. Intellectual Property (i.e., patents) will also be made available for students to transform into products and technologies to build wealth, provide research and development opportunities, and aid in the development and innovation in the Quad Cities and greater Midwest area.

## **Scholarships and Honors in Engineering**

Scholarship information and eligibility for the Centennial Honors College is available from the College of Business and Technology office, (309) 298-2442; Western's Scholarship Office, (309) 298-2001; and on the Web at [wiu.edu/Scholarship](http://wiu.edu/Scholarship) and [wiu.edu/Honors](http://wiu.edu/Honors).

## **Student Activities**

Western is proud to host a chapter of the Society of Manufacturing Engineering (SME), the world's leading resource for manufacturing knowledge. Students involved in this organization are exposed to a large network of professional manufacturing engineers and have opportunities to attend events such as conferences and seminars. In previous conference competitions, Western students won several first place awards in categories such as continuing education, tabletop display, and technical presentation.

HIGHER VALUES IN HIGHER EDUCATION

## Special Opportunities

The Engineering program is dedicated to leadership and quality standards for students as we seek accreditation through the Accreditation Board for Engineering and Technology (ABET). This accreditation ensures that quality standards are met according to the demands of the engineering profession for which we are preparing our students.

All students must pass the Fundamentals of Engineering Examination prior to graduation. This is a comprehensive, professional exam that measures basic engineering knowledge. It is also a step toward registration as a professional engineer (PE). Students seeking admission to the Engineering program must have earned 45 SH of credit with an overall grade point average of 2.5, and a grade of "C" or better in any Math, Science, or Engineering courses listed below, or the equivalent transfer courses.

## Curriculum: Bachelor of Science – Engineering: 121 sh

**Core Courses**.....49 SH

Engr 207 – Introduction to CAD (3 SH)	Engr 3xx* – Mechanical Design (3 SH)
CS 225 – Programming for Engineering & Science (3 SH)	Engr 3xx – Manufacturing Engineering (3 SH)
Engr 212*/Phys 312 – Statics and Dynamics (4 SH)	Engr 343* – Engineering Materials Science (3 SH)
Engr 251 – Strength of Materials (3 SH)	Engr 3xx* – Structural Design & Analysis (3 SH)
Engr 271 – Introduction to Electronics (3 SH)	Engr 385 – Electronics I (3 SH)
Engr 3xx*/Phys 354 – Thermodynamics (3 SH)	Engr 477 – Mechatronics I (3 SH)
Engr 311 – Fluid Dynamics (3 SH)	Engr 493 – Internship (2 SH)
Engr 331 – Engineering Project Management (3 SH)	Engr 499 – Senior Design (4 SH)

\*Changes to take effect in January 2010; all students must take these courses.

**Electives** .....9 SH

**Note:** Any electives can be taken as long as the prerequisites are satisfied. Electives below are shown in logical groupings for those wishing to take coherent sequences of courses leading to greater depth and specialization. The availability of course offerings will be determined on class interest.

### Option A – Mechanical

Engr 4xx – Mechatronics II (3 SH)	Engr 4xx – Introduction to Composite Design (3 SH)
Engr 4xx – Thermo-Fluids Dynamics (3 SH)	Engr 4xx – Lightweight Structural Design & Analysis (3 SH)
Engr 4xx – Heat Transfer (3 SH)	Engr 482 – Computer Aided Design & Analysis (3 SH)

### Option B – Civil Engineering

Engr 4xx – Steel Design (3 SH)	Engr 4xx – Soil Mechanics (3 SH)
Engr 4xx – Concrete Design (3 SH)	Engr 3xx – Advanced Surveying (3 SH)

### Option C – Quality/Manufacturing

Engr 345 – Quality Engineering (3 SH)	MET 400 level courses
OM 455 – Total Quality Management (3 SH)	

### Option D – Engineering Management

OM 352 – Operations Management (3 SH)	Other Operations Management (OM) or Management (Mgt) 400-level courses
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### Option E – Electrical/Computer Engineering

CS 211 – Principles of Computer Science I (2 SH)	CS 350 – Data Structures I (3 SH)
CS 212 – Basics of Java (1 SH)	Engr 471 – Micro-Electronics (3 SH)
CS 214 – Principles of Computer Science II (3 SH)	Engr 478 – Industrial Controls (3 SH)

## For More Information

For admissions process and general program information, contact Western Illinois University–Quad Cities, 3561 60th Street, Moline, IL 61265, (309) 762-9481. For specific program questions, contact our Advising Center at (309) 762-1988, or visit our website at [wiu.edu/qc/engineering](http://wiu.edu/qc/engineering).

# wiu.edu/qc/engineering

## Caxton Block Building–Engineering Center

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