

2009-2010

# *B.S. in Industrial Technology*

## *With a Specialization in CAD/CAM*

**College of Sciences and Technology**

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### *What is the study of Industrial Technology with a Specialization in CAD/CAM?*

The Bachelor of Science degree program in Industrial Technology prepares graduates to practice a range of technical skills and to enter supervisory and management levels in industry. The CAD/CAM specialization provides expertise in advanced 3D parametric modeling and in the planning and programming of CNC equipment used for designing and fabricating products and tooling. It builds upon a fundamental understanding of materials, processes, business, and economics introduced in the program. Graduates of this program hold positions in product/tooling design, manufacturing, and management throughout the Northwest.

### *Why should I consider This Major?*

This program provides the technical ability to convert product ideas into reality through the systematic use of software, processes, and equipment. These skills and the ability to supervise and manage the underlying technologies are critical to a wide range of technical industries.

### *How to Declare:*

Students should declare their major early and seek departmental advisement.

### *Mid-Program Checkpoint:*

Students intending to complete a Bachelor's of Science degree in Industrial Technology with a specialization in CAD/CAM within four years should complete the following courses by the start of their junior year. Students are expected to follow all prerequisite requirements for courses and seek early departmental advisement.

#### **Coursework:**

Etec 110, 111, 220, 222, 223, 224, 225

MATH 114, 115 (or 118), 124 or 134, 125 or 135

CSCI 138 or 140

CHEM 121

PHYS 114, 115

Minimum of 24 credits of GURs

### *Contact Information:*

Engineering Technology  
Department Website:  
<http://www.etc.wvu.edu/>

CAD/CAM Advisor:  
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### *Sample Career Fields:*

Graduates of this program are employed in:

- Product/tooling design and CAD modeling
- Engineering Drafting
- Programming and operation of CNC equipment
- Consulting in CAD/CAM technologies
- Supervision and management



# Industrial Technology Major Requirements: 110 Credits

## Core Courses: 73 Credits

EETC 110 Engineering Design Graphics I (3)  
EETC 111 Engineering Design Graphics II (3)  
EETC 220 Introduction to Engineering Materials (4)  
EETC 223 Machine Metal Processes (4)  
EETC 224 Applied Engineering Statics (3)  
EETC 225 Strength of Materials (5)  
EETC 327 Manufacturing Economics (3)  
EETC 333 Polymer Technology (5)  
EETC 351 Electronics for Engineering Technology (4)  
MATH 114 Precalculus I (5)  
MATH 115 Precalculus II (5)  
Or MATH 118 Accelerated Precalculus (5)  
MATH 124 Calculus and Analytic Geometry  
Or MATH 134 Honors Calculus I (5)  
MATH 125 Calculus and Analytic Geometry  
Or MATH 135 Honors Calculus II (5)  
CHEM 121 General Chemistry I (5)  
CSCI 138 Programming Fundamentals in Visual Basic (4)  
Or CSCI 140 Programming Fundamentals in C++(4)  
PHYS 114 Principles of Physics I (5)  
Or PHYS 121 Physics with Calculus I (5)  
PHYS 115 Principles of Physics II (5)  
Or PHYS 122 Physics with Calculus II (5)

These courses are required (or advised) for this major and may be used to satisfy GUR or Writing Proficiency requirements:

**QSR:** MATH 124 and higher

**LSCI:** CHEM 121, PHYS 115

**SCI:** PHYS 114

**WP:** Three Writing Proficiency points are required for graduation (they are noted as WP1, WP2, and WP3). Check [Classfinder](#) or [Online Timetable](#) for departmental offerings each quarter.

## CAD/CAM: 37 credits minimum:

EETC 222 Foundry, Forming and Joining (4)  
EETC 322 Numerical Control Operations (4)  
EETC 335 Tooling for Plastics Processing (3)  
EETC 344 Industrial Quality Assurance (4)  
EETC 361 Advanced CAD: Assembly and Design & Mechanisms (4)  
EETC 362 Advanced CAD: Surface Modeling (4)  
EETC 427 Tool Design (3)  
MATH 245 Statistics for Engineering Technology (3)  
**Choose one:**  
EETC 426a Advanced Computer Numerical Control - Surfacing and Contours (3)  
EETC 426b Advanced Computer Numerical Control-Mill/Turn (3)  
EETC 426c Advanced Computer Numerical Control - Hi-Speed Machining (3)  
EETC 426d Advanced Computer Numerical Control - EDM Electrical Discharge Machining  
**Optional:**  
EETC 312 Industrial Design CAD Skills (4)  
EETC 313 Architectural Concepts & Residential Planning (5)  
EETC 334 Reinforced Plastics/Composites (5)  
EETC 338 Injection Molding (4)  
EETC 402 Cooperative Work/Study (1-9)  
EETC 419 Directed Research in Drafting/Design (1-3)  
EETC 425 Machine Design (4)  
EETC 426 Advanced Computer Numerical Control (3)  
(Additional versions)  
EETC 428 Advanced Manufacturing Laboratory (3)  
EETC 431 Plastics Product Design (3)  
EETC 461 CAD Automation (4)  
Electives by advisement

## Other Industrial Technology options:

B.S. Electronics Engineering Technology (149 credits)

B.S. Industrial Design (135 credits)

B.S. Manufacturing Engineering Technology (144 credits)

B.S. Plastics Engineering Technology (139 credits)

B.S. Vehicle Engineering Technology Option in Plastics Engineering Technology (139 credits)

Minor in Embedded Systems (27 credits)

Minor in Sustainable Design (30-32 credits)

Minor in Industrial Technology-Vehicle Design (25 credits)

Minor in Manufacturing Engineering Technology (18 credits)