

# ADVANCED MANUFACTURING

SOUTHWEST



## CAREERS IN THIS FIELD

*CAD/CAM Specialist*

*CNC Operator/Programmer*

*Commercial and Industrial Designer*

*Electromechanical Technician*

*Industrial Machinery Mechanic*

*Manufacturing Engineer Technician*

*Mechatronics Technician • Production Supervisor*

*Quality Technician • Robotics Technician*

Manufacturing employs more people than any other industry in the state of Indiana. This means there's a high demand for educated and skilled advanced manufacturing technicians. The nationally recognized and portable MSSC Certified Production Technician (CPT) certification is available to all students in the Advanced Manufacturing program, with successful completion of all four (4) of the MSSC Certified Production Technician certification exams.

## AREAS OF EMPHASIS

### MANUFACTURING DESIGN

This emphasis prepares students to enter a variety of fields including CNC operations or programming, CAD/CAM specialties or commercial and industrial design. These students combine artistic talents with the latest technology for increased productivity in manufacturing settings.

### MANUFACTURING OPERATIONS

With an emphasis in manufacturing operations, students will have an understanding of all factors affecting manufacturing, including global impact, environmental concerns, continuous process improvement, quality operations and lean manufacturing. As a quality technician or production supervisor, these students will ensure that the production processes and methods are followed correctly and improved often.

## ASSOCIATE OF APPLIED SCIENCE (AAS) DEGREE

Two-year Associate of Applied Science degree programs prepare students for careers, career changes and career advancement. AAS programs may also prepare students for transfer to four-year institutions. The program content, which is approximately 30 percent general education, provides depth and breadth in conceptual and professional/technical skills. Professional/technical courses equip students with the skills to obtain employment and to advance in the workforce.



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## ASSOCIATE OF APPLIED SCIENCE

64-65 Credit Hours

### FIRST YEAR

#### First Semester

ADMF 101	Key Principles of Advanced Manufacturing
ADMF 102	Technology in Advanced Manufacturing
ADMF 103	Graphic Communications for Manufacturing
ADMF 113	Electrical & Electronic Principles for Manufacturing
IVYT 1XX	Life Skills Elective
MATH 136	Intermediate Algebra

#### Second Semester

ADMF 115	Materials & Processing for Manufacturing
ADMF 116	Automation & Robotics for Manufacturing I
ADMF 201	Lean Manufacturing
Elective*	Advanced Manufacturing Elective
MATH 137	Trigonometry with Analytic Geometry

### SECOND YEAR

#### First Semester

ADMF 206	Automation & Robotics in Manufacturing II
ADMF 211	Quality Systems in Manufacturing
Elective*	Advanced Manufacturing Elective
COMM 101	Fundamentals of Public Speaking
PHYS 101	Physics I

#### Second Semester

ADMF 216	Projects in Advanced Manufacturing
ADMF 280	Manufacturing COOP/Internship
Elective*	Advanced Manufacturing Elective
Elective*	Advanced Manufacturing Elective
ENGL 111	English Composition
Elective	Humanities/Social Sciences

### \*Advanced Manufacturing Course Electives/Areas of Emphasis

#### Manufacturing Design

DESN 103	CAD Fundamentals
DESN 104	Mechanical Graphics
DESN 206	Mechanical and Electrical Equipment
DESN 214	Kinematics of Machinery
DESN 217	Design Process and Applications
DESN 220	Advanced CAD
MTTC 208	CNC Programming I
MTTC 209	CNC Programming II
MTTC 210	Interactive CNC
MTTC 211	Advanced Programming Techniques
MTTC 220	CAD/CAM I
MTTC 221	CAD/CAM II

#### Manufacturing Operations

ADMF 106	Supervision and Teams at Work
ADMF 109	Green Manufacturing Operations
ADMF 118	World Class Manufacturing
ADMF 119	Logistics in Manufacturing
ADMF 220	Work Cycle Analysis
ADMF 225	ISO Certification in Manufacturing

#### Production Technologies

ADMF 112	Mechatronics I
ADMF 122	Mechatronics II
ADMF 202	Mechatronics III
ADMF 205	Sensors in Manufacturing
ADMF 222	Mechatronics IV
EECT 112	Digital Fundamentals
EECT 122	Digital Applications
IMTC 107	Preventive Maintenance
IMTC 122	Electrical Wiring Fundamentals
INDT 103	Motor and Motor Controls
INDT 104	Fluid Power Basics
INDT 201	Fluid Power Systems
INDT 203	Machine Maintenance/Installation
INDT 204	Electrical Circuits
INDT 205	Programmable Controllers I
INDT 206	Programmable Controllers II

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To learn more about employment and salary information for careers in this field, visit the U.S. Department of Labor's Bureau of Labor Statistics website at [bls.gov](http://bls.gov) and the official career site of the State of Indiana, [indianacareerconnect.com](http://indianacareerconnect.com).

Ivy Tech Community College is accredited by North Central Association of Colleges and Schools.

