

Industrial Technology

ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

DESCRIPTION: This Associate Degree program is designed to provide a multi-disciplined technical background. Students interested in pursuing careers in technology can tailor the program to emphasize their major area of interest. The program offers students a broad-based curriculum across all areas of technical education, preparing graduates for emerging job markets and technical fields. The program is designed to allow students to focus on areas of interest or specialize in one of several technical specializations: Design, Mechatronics, machining, and Unmanned Remote Robotics. Students, with assistance from an advisor, will select a major area of technical emphasis. These technical courses plus supporting courses from other disciplines comprise the Industrial Technology degree requirements.

Graduates can move on to complete a four-year degree in the field of Engineering Technology and should consult with an academic advisor for this option.

GENERAL EDUCATION REQUIREMENTS CREDITS: 18-20

ENG 111 or ENG 120	ENGLISH COMPOSITION I (3/3) or APPLIED COMMUNICATION (3/3)
ENG 112 or ENG 123	ENGLISH COMPOSITION II (3/3) or TECHNICAL COMMUNICATION (3/3)
MTH 110 or MTH 113	TECHNICAL MATH I (3/4) or INTERMEDIATE ALGEBRA (4/4)
MTH 112 or MTH 122	TECHNICAL MAT II (3/4) or PLANE TRIGONOMETRY (3/3)
PLS 221	AMERICAN GOVERNMENT & POLITICS (3/3)
PHY 111 or PHY 121	APPLIED PHYSICS (3/4) or GENERAL COLLEGE PHYSICS (4/6)

CORE PROGRAM REQUIREMENTS CREDITS: 25-26

APP 100E	ELECTRICAL STUDIES FOR TRADES (3/4) ^A
CAD 150	3D MODELING (3/4) ^A
MFG 101	MACHINING PROCESSES I (4/6) ^A
APP 106M	INDUSTRIAL SAFETY (1/1) ^A
IND 229	HYDRAULIC & PNEUMATIC POWER (3/4) ^A
MET 200	MATERIAL SCIENCE (3/4) ^A
EGR 130	TEAM DESIGN PROJECT (2/3) ^A
MFG 122 or MFG 120 or APP 121M	MANUFACTURING PROCESSES (3/4) or PRINT INTERPRETATION & PROCESSES (3/4) or APPRENTICE BLUEPRINT READING (3/4)
APP 114E or IND 120 or MFG 201 or WLD 260 or MTH 119 or CIS 206 or MTH 221	PROGRAMMABLE LOGIC CONTROLLERS (3/4) or INDUSTRIAL NETWORKING (3/4) or CNC I (4/6) or WELDING AUTOMATION (3/4) or INTRO TO COMPUTERS & PROGRAMMING (3/3) or OBJECT ORIENTED PROGRAMMING (3/4) or C++ PROGRAMMING

SUGGESTED ELECTIVES

CREDITS: 16

FROM THE LIST BELOW, SELECT COURSES TO TOTAL 60 CREDITS:

APP 104E or APP 111E or APP 114E or APP 123E	APPRENTICE – ELECTRICAL COURSE (3/4) ^A
AVI 135 or AVI 136 or AVI 137	AVIATION UNMANNED COURSE (1/1.25-1.5) ^A
CAD 220 or CAD 250	COMPUTER-AIDED DESIGN COURSE (3/4) ^A
CNS 150 or CNS 151 or CNS 170	COMPUTER NETWORKING SYSTEMS COURSE (3-4/4-5) ^A
EGR 122 ELE 220 IND 225	INTRODUCTION TO ENGINEERING (1/1) ^A PC BASE DATA ACQUISITION & CONTROL (3/4) ^A STRENGTH OF MATERIALS (4/5) ^A
GEO 151 or GEO 152	GLOBAL INFORMATION SYSTEMS (GIS) COURSE (1.5/2) ^A
MFG 102 or MFG 122 or MFG 201 or MFG 204 or MFG 220	MANUFACTURING TECHNOLOGY COURSE (3-6/3-7) ^A
WLD 123 or WLD 124 or WLD 134 or WLD 135 or WLD 240 or WLD 242 or WLD 250 or WLD 252 or WLD 260	WELDING COURSE (1.5-5/2.25-8) ^A

GPA of 2.0 or higher must be maintained in occupational specialty courses

MINIMUM 60 CREDIT HOURS/76.5 CONTACT HOURS

NOTES:

^A Included in occupational specialty

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Concentration – CNC Machining Electives

MFG 102	MACHINING PROCESSES II (4/6) ^A
MFG 201	CNC I (4/6) ^A (FROM PROGRAM REQ)
MFG 202	CNC II (4/6) ^A
MFG 203	CNC III (4/6) ^A
MFG 204	COMPUTER AIDED MFG (3/4) ^A
	TECHNICAL ELECTIVE (3/4) ^A

SUGGESTED SEQUENCE OF COURSES

YEAR 1 (FALL SEMESTER) CREDITS: 14-15

ENG 111 <i>or</i>	ENGLISH COMPOSITION I (3/3) <i>or</i>
ENG 120	APPLIED COMMUNICATION (3/3)

MTH 110 <i>or</i>	TECHNICAL MATH I (3/4) <i>or</i>
MTH 113	INTERMEDIATE ALGEBRA (4/4)

MFG 101	MACHINING PROCESSES I (4/6)
MFG 122	MANUFACTURING PROCESSES (3/4)
APP 106M	INDUSTRIAL SAFETY (1/1)

YEAR 1 (SPRING SEMESTER) CREDITS: 17

ENG 112 <i>or</i>	ENGLISH COMPOSITION II (3/3) <i>or</i>
ENG 123	TECHNICAL COMMUNICATION (3/3)

MTH 112 <i>or</i>	TECHNICAL MAT II (3/4) <i>or</i>
MTH 122	PLANE TRIGONOMETRY (3/3)

MFG 201	CNC I (4/6)
CAD 150	3D MODELING (3/4)
MFG 102	MACHINING PROCESSES II (4/6)

YEAR 2 (FALL SEMESTER) CREDITS: 16

MFG 202	CNC II (4/6)
APP 100E	ELECTRICAL STUDIES FOR TRADES (3/4)
MET 200	MATERIAL SCIENCE (3/4)
IND 229	HYDRAULIC & PNEUMATIC POWER (3/4)
PLS 221	AMERICAN GOVERNMENT & POLITICS (3/3)

YEAR 2 (SPRING SEMESTER) CREDITS: 15

MFG 203	CNC III (4/6)
MFG 204	COMPUTER AIDED MFG (3/4)
EGR 130	TEAM DESIGN PROJECT (2/3)
PHY 111	APPLIED PHYSICS (3/4)
	TECHNICAL ELECTIVE (3/4)

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ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

Concentration – Design

CAD 220	MACHINE DESIGN (3/4) ^A
CAD 250	ADVANCED 3D MODELING (3/4) ^A
MFG 204	COMPUTER AIDED MFG (3/4) ^A
IND 225	STRENGTH OF MATERIALS (4/5) ^A
CIS 171	SPREADSHEETS I (1/1.25) ^A
CIS 172	SPREADSHEETS II (1/1.25) ^A
	TECHNICAL ELECTIVE (3/4) ^A

SUGGESTED SEQUENCE OF COURSES

YEAR 1 (FALL SEMESTER) CREDITS: 14-15

MTH 110	TECHNICAL MATH I (3/4)
MFG 101	MACHINING PROCESSES I (4/6)
MFG 122	MANUFACTURING PROCESSES (3/4)
APP 100E	ELECTRICAL STUDIES FOR TRADES (3/4)
APP 106M	INDUSTRIAL SAFETY (1/1)

YEAR 1 (SPRING SEMESTER) CREDITS: 15

MTH 112	TECHNICAL MAT II (3/4)
PHY 111	APPLIED PHYSICS (3/4)
CAD 150	3D MODELING (3/4)
APP 114E	PROGRAMMABLE LOGIC CONTROLLERS (3/4)
MFG 204	COMPUTER AIDED MANUFACTURING (3/4)

YEAR 2 (FALL SEMESTER) CREDITS: 15

ENG 111 <i>or</i>	ENGLISH COMPOSITION I (3/3) <i>or</i>
ENG 120	APPLIED COMMUNICATION (3/3)
CAD 220	COMPUTER-AIDED DESIGN COURSE (3/4)
IND 229	HYDRAULIC & PNEUMATIC POWER (3/4)
MET 200	MATERIAL SCIENCE (3/4)
PLS 221	AMERICAN GOVERNMENT & POLITICS (3/3)

YEAR 2 (SPRING SEMESTER) CREDITS: 17

ENG 112 <i>or</i>	ENGLISH COMPOSITION II (3/3) <i>or</i>
ENG 123	TECHNICAL COMMUNICATION (3/3)
IND 225	STRENGTH OF MATERIALS (4/5)
CAD 250	ADVANCED 3D MODELING (3/4)
EGR 130	TEAM DESIGN PROJECT (2/3)
CIS 171	SPREADSHEETS I (1/1.25)
CIS 172	SPREADSHEETS II (1/1.25)
	TECHNICAL ELECTIVE (3/4)

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ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

Concentration – Mechatronics

APP 107E <i>or</i> CNS 151	SPECIALTY WIRING (3/4) ^A <i>or</i> NETWORK COMMUNICATION CABLING (3/4) ^A
APP 123E CAD 220 IND 120	LINEAR ELECTRONICS (3/4) ^A MACHINE DESIGN (3/4) ^A INDUSTRIAL COMPUTERS & NETWORKING (3/4) ^A (FROM PROGRAM REQ)
APP 114E MFG 201	PROGRAMMABLE LOGIC CONTROLLERS (3/4) ^A CNC I (4/6) ^A

SUGGESTED SEQUENCE OF COURSES

YEAR 1 (FALL SEMESTER) CREDITS: 17-18

MTH 110 <i>or</i> MTH 113	TECHNICAL MATH I (3/4) <i>or</i> INTERMEDIATE ALGEBRA (4/4)
MFG 101 MFG 122 APP 100E IND 120 APP 106M	MACHINING PROCESSES I (4/6) MANUFACTURING PROCESSES (3/4) ELECTRICAL STUDIES FOR TRADES (3/4) INDUSTRIAL NETWORKING (3/4) INDUSTRIAL SAFETY (1/1)

YEAR 1 (SPRING SEMESTER) CREDITS: 15

MTH 112 <i>or</i> MTH 122	TECHNICAL MAT II (3/4) <i>or</i> PLANE TRIGONOMETRY (3/3)
PHY 111 CAD 150 APP 123E PLS 221	APPLIED PHYSICS (3/4) 3D MODELING (3/4) LINEAR ELECTRONICS (3/4) AMERICAN GOVERNMENT & POLITICS (3/3)

YEAR 2 (FALL SEMESTER) CREDITS: 15

ENG 111 <i>or</i> ENG 120	ENGLISH COMPOSITION I (3/3) <i>or</i> APPLIED COMMUNICATION (3/3)
CAD 220 IND 229 MET 200 APP 107E	MACHINE DESIGN (3/4) HYDRAULIC & PNEUMATIC POWER (3/4) MATERIAL SCIENCE (3/4) SPECIALTY WIRING (3/4)

YEAR 2 (SPRING SEMESTER) CREDITS: 15

ENG 112 <i>or</i> ENG 123	ENGLISH COMPOSITION II (3/3) <i>or</i> TECHNICAL COMMUNICATION (3/3)
APP 114E MFG 201 EGR 130	PROGRAMMABLE LOGIC CONTROLLERS (3/4) CNC I (4/6) TEAM DESIGN PROJECT (2/3) TECHNICAL ELECTIVE (3/4)

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ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

Concentration – Unmanned Remote Robotics

MRT 101 AVI 135 AVI 136 AVI 137	INTRODUCTION TO UNDERWATER ROBOTICS (3/4) ^A UAS PILOT EXAM PREP (1/1.25) ^A UAS OPERATIONS & SAFETY (1/1.5) ^A UAS PAYLOADS & PROCESSING (1/1.25) ^A
APP 107E <i>or</i> CNS 151	SPECIALTY WIRING (3/4) ^A <i>or</i> NETWORK COMMUNICATION CABLING (3/4) ^A
APP 123E GEO 151 GEO 152	LINEAR ELECTRONICS (3/4) ^A INTRODUCTION TO GIS (1.5/2) ^A ADVANCED GIS (1.5/2) ^A

SUGGESTED SEQUENCE OF COURSES

YEAR 1 (FALL SEMESTER) CREDITS: 17

MTH 113 MRT 101 MFG 122 APP 100E IND 120 APP 106M	INTERMEDIATE ALGEBRA (4/4) INTRODUCTION TO UNDERWATER ROBOTICS (3/4) MANUFACTURING PROCESSES (3/4) ELECTRICAL STUDIES FOR TRADES (3/4) INDUSTRIAL NETWORKING (3/4) INDUSTRIAL SAFETY (1/1)
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YEAR 1 (SPRING SEMESTER) CREDITS: 15

MTH 122 GEO 151 GEO 152 CAD 150 APP 123E PLS 221	PLANE TRIGONOMETRY (3/3) INTRODUCTION TO GIS (1.5/2) ADVANCED GIS (1.5/2) 3D MODELING (3/4) LINEAR ELECTRONICS (3/4) AMERICAN GOVERNMENT & POLITICS (3/3)
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YEAR 2 (FALL SEMESTER) CREDITS: 17

ENG 111 <i>or</i> ENG 120	ENGLISH COMPOSITION I (3/3) <i>or</i> APPLIED COMMUNICATION (3/3)
MFG 101 IND 229 APP 106M	MACHINING PROCESSES I (4/6) HYDRAULIC & PNEUMATIC POWER (3/4) INDUSTRIAL SAFETY (1/1)

YEAR 2 (SPRING SEMESTER) CREDITS: 14

ENG 112 <i>or</i> ENG 123	ENGLISH COMPOSITION II (3/3) <i>or</i> TECHNICAL COMMUNICATION (3/3)
MET 200 AVI 135 AVI 136 AVI 137 EGR 130	MATERIAL SCIENCE (3/4) UAS PILOT EXAM PREP (1/1.25) UAS OPERATIONS & SAFETY (1/1.5) UAS PAYLOADS & PROCESSING (1/1.25) TEAM DESIGN PROJECT (2/3) TECHNICAL ELECTIVE (3/4)