

MECHANICAL DESIGN TECHNOLOGY

ASSOCIATE IN APPLIED SCIENCE (AAS) DEGREE

DESCRIPTION: This associate degree program is designed for students who want to work in the field of engineering and design at the applied level in positions such as engineering technician, designer, and/or CAD operator. The program emphasizes a hands-on approach to design from the use of hand tools to the utilization of the latest software and computers recommended by industry. Theoretical, scientific, and mathematical topics are utilized and serve as a basis for the research and development of new designs. A technical elective allows for the customization of the program with courses ranging from manufacturing to electronics. Graduates can move on to complete a four-year degree in the field of Engineering Technology and should consult with an academic advisor.

GENERAL EDUCATION REQUIREMENTS CREDITS: 12-13

ENG 120 *or* APPLIED COMMUNICATION (3/3) *or*
ENG 111 ENGLISH COMPOSITION I (3/3)
ENG 123 *or* TECHNICAL COMMUNICATION (3/3) *or*
ENG 112 ENGLISH COMPOSITION II (3/3)
PHY 111 *or* APPLIED PHYSICS (3/4) *or*
PHY 121 GENERAL COLLEGE PHYSICS (4/6)
PLS 221 *or* AMERICAN GOVERNMENT REQUIREMENT (3-6/3-6)
PLS 222 *or* HST 221 & HST 222

CORE PROGRAM REQUIREMENTS CREDITS: 45

APP 100E ELECTRICAL STUDIES FOR TRADES (3/4) ^A
APP 114E PROGRAMMABLE CONTROLLERS (3/4) ^A
APP 124M APPRENTICE HYDRAULICS (3/4) ^A
CAD 150 3D MODELING (3/4) ^A
CAD 220 MACHINE DESIGN (3/4) ^A
CAD 250 ADVANCED 3D MODELING (3/4) ^A
CIS 171,172,173 SPREADSHEETS I, II, III (3/3.75) ^A
EGR 122 INTRODUCTION TO ENGINEERING (1/1) ^A
EGR 130 TEAM DESIGN PROJECT (2/3) ^A
MET 200 MATERIAL SCIENCE (3/4) ^A
MFG 101 MACHINING PROCESSES I (4/6) ^A
MFG 122 MANUFACTURING PROCESSES (3/4) ^A
MFG 201 CNC I (4/6) ^A
MTH 110 *or* TECHNICAL MATH I (3/4) *or*
MTH 113 INTERMEDIATE ALGEBRA (4/4)
MTH 112 *or* TECHNICAL MATH II (3/4) *or*
MTH 122 PLANE TRIGONOMETRY (3/3)
SDE 201 JOB SEARCH STRATEGIES (1/1)

SUGGESTED ELECTIVES CREDITS: 3

APP 104E AC & DC FUNDAMENTALS (3/4) ^A
APP 111E ELECTRIC MOTOR CONTROL (3/4) ^A
APP 123E LINEAR ELECTRONICS FOR ELECTRICIANS (3/4) ^A
APP 106M INDUSTRIAL SAFETY (1/1) ^A
CEM 100 INTRODUCTION TO CHEMISTRY (5/7) ^A
MFG 102 MACHINING PROCESSES II (4/6) ^A
MFG 204 COMPUTER AIDED MANUFACTURING (3/4) ^A
MFG 220 JIGS & FIXTURE DESIGN FUNDAMENTALS (4/6) ^A
MTH 131 ANALYTIC GEOMETRY & CALCULUS I (5/5)
SPE 123 PUBLIC COMMUNICATION (3/3)
WLD 123 SMAW WELDING PROCESSES (4/6) ^A
WLD 124 GMAW & FCAW WELDING PROCESSES (4/6) ^A

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

MINIMUM 60 CREDIT HOURS/77.75 CONTACT HOURS

NOTES: ^A Included in occupational specialty

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SUGGESTED SEQUENCE OF COURSES

YEAR 1 (FALL SEMESTER) CREDITS: 14

APP 100E ELECTRICAL STUDIES FOR TRADES (3/4)
EGR 122 INTRODUCTION TO ENGINEERING (1/1)
MFG 101 MACHINING PROCESSES I (4/6)
MFG 122 MANUFACTURING PROCESSES (3/4)
MTH 110 *or* TECHNICAL MATH I (3/4) *or*
MTH 113 INTERMEDIATE ALGEBRA (4/4)

YEAR 1 (SPRING SEMESTER) CREDITS: 16

APP 114E PROGRAMMABLE CONTROLLERS (3/4)
CAD 150 3D MODELING (3/4)
CIS 171,172,173 SPREADSHEETS I, II, III (3/3.75)
MFG 201 CNC I (4/6)
MTH 112 *or* TECHNICAL MATH II (3/4) *or*
MTH 122 PLANE TRIGONOMETRY (3/3)

YEAR 2 (FALL SEMESTER) CREDITS: 16

APP 124M APPRENTICE HYDRAULICS (3/4)
CAD 220 MACHINE DESIGN (3/4)
ENG 120 *or* APPLIED COMMUNICATION (3/3) *or*
ENG 111 ENGLISH COMPOSITION I (3/3)
MET 200 MATERIAL SCIENCE (3/4)
SDE 201 JOB SEARCH STRATEGIES (1/1)
TECHNICAL ELECTIVE (3/4)

YEAR 2 (SPRING SEMESTER) CREDITS: 14

CAD 250 ADVANCED 3D MODELING (3/4)
EGR 130 TEAM DESIGN PROJECT (2/3)
ENG 123 *or* TECHNICAL COMMUNICATION (3/3) *or*
ENG 112 ENGLISH COMPOSITION II (3/3)
PHY 111 *or* APPLIED PHYSICS (3/4) *or*
PHY 121 GENERAL COLLEGE PHYSICS (4/6)
PLS 221 *or* AMERICAN GOVERNMENT REQUIREMENT (3-6/3-6)
PLS 222 *or* HST 221 & HST 222