

# 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) <sup>A</sup>
APP 114E	PROGRAMMABLE CONTROLLERS (3/4) <sup>A</sup>
APP 124M	APPRENTICE HYDRAULICS (3/4) <sup>A</sup>
CAD 150	3D MODELING (3/4) <sup>A</sup>
CAD 220	MACHINE DESIGN (3/4) <sup>A</sup>
CAD 250	ADVANCED 3D MODELING (3/4) <sup>A</sup>
CIS 171,172,173	SPREADSHEETS I, II, III (3/3.75) <sup>A</sup>
EGR 122	INTRODUCTION TO ENGINEERING (1/1) <sup>A</sup>
EGR 130	TEAM DESIGN PROJECT (2/3) <sup>A</sup>
MET 200	MATERIAL SCIENCE (3/4) <sup>A</sup>
MFG 101	MACHINING PROCESSES I (4/6) <sup>A</sup>
MFG122	MANUFACTURING PROCESSES (3/4) <sup>A</sup>
MFG 201	CNC I (4/6) <sup>A</sup>
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) <sup>A</sup>
APP 111E	ELECTRIC MOTOR CONTROL (3/4) <sup>A</sup>
APP 123E	LINEAR ELECTRONICS FOR ELECTRICIANS (3/4) <sup>A</sup>
APP 106M	INDUSTRIAL SAFETY (1/1) <sup>A</sup>
CEM 100	INTRODUCTION TO CHEMISTRY (5/7) <sup>A</sup>
MFG 102	MACHINING PROCESSES II (4/6) <sup>A</sup>
MFG 204	COMPUTER AIDED MANUFACTURING (3/4) <sup>A</sup>
MFG 220	JIGS & FIXTURE DESIGN FUNDAMENTALS (4/6) <sup>A</sup>
MFG 131	ANALYTIC GEOMETRY & CALCULUS I (5/5)
SPE 123	PUBLIC COMMUNICATION (3/3)
WLD 123	SMAW WELDING PROCESSES (4/6) <sup>A</sup>
WLD 124	GMAW & FCAW WELDING PROCESSES (4/6) <sup>A</sup>

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

**MINIMUM 60 CREDIT HOURS/77.75 CONTACT HOURS**

NOTES: <sup>A</sup> 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)
MFG122	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	