

# MECHANICAL DESIGN TECHNOLOGY

Associate in Applied Science (AAS) Degree

Minimum Credits: 60

Contact Hours: 74.75

**INTRODUCTION** 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. Two technical electives allow 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 for this option.

## GENERAL EDUCATION COURSES

COURSE	TITLE	CREDITS	CONTACT HOURS
ENG 111 or ENG 120	English Composition I or Applied Communications	3.0	3.0
ENG 112 or ENG 123	English Composition II or Technical Communication	3.0	3.0
PLS 221	American Government and Politics	3.0	3.0
PHY 111 or PHY 121	Applied Physics or General College Physics	<u>3.0-4.0</u>	<u>4.0-6.0</u>
<b>GENERAL EDUCATION CREDITS/CONTACT HOURS:</b>		12.0-13.0	13.0-15.0

## CORE PROGRAM COURSES

COURSE	TITLE	CREDITS	CONTACT HOURS
APP100E	Electrical Studies <sup>A</sup>	3.0	4.0
CAD150	3D Modeling <sup>A</sup>	3.0	4.0
CAD220	Machine Design <sup>A</sup>	3.5	5.0
CAD250	Advanced 3D Modeling <sup>A</sup>	3.5	5.0
CIS171, 172, 173	Spreadsheets I, II, III <sup>A</sup>	3.0	3.75
EGR 122	Introduction to Engineering <sup>A</sup>	1.0	1.0
EGR130	Team Design Project <sup>A</sup>	2.0	3.0
IND225	Strength of Materials <sup>A</sup>	4.0	5.0
IND229	Hydraulic & Pneumatic Power <sup>A</sup>	3.0	4.0
MET200	Material Science <sup>A</sup>	3.0	4.0
MFG101	Machining Processes I <sup>A</sup>	4.0	6.0
MFG120	Print Interpretation & Processes <sup>A</sup>	3.0	4.0
MTH 110 or MTH 113	Technical Math I or Intermediate Algebra	3.0-4.0	4.0
MTH 112 or MTH122	Technical Math II or Plane Trigonometry	<u>3.0</u>	<u>3.0-4.0</u>
<b>CORE PROGRAM CREDITS/CONTACT HOURS:</b>		42.0-43.0	54.75-55.75

## SUGGESTED ELECTIVES

*From the list below, select courses until at total 60 credits are earned*

APP104E,APP111E,APP114E,APP123E	Apprentice – Electrical Courses <sup>A</sup>	3.0	4.0
APP106M	Industrial Safety <sup>A</sup>	0.5	0.5
CEM 100	Introduction to Chemistry	5.0	7.0
ELE220	PC Base Data Acquisition and Control <sup>A</sup>	3.0	4.0
MFG102,MFG122,MFG201,MFG204,MFG220	Manufacturing Technology Courses <sup>A</sup>	3.0-6.0	3.0-7.0
SPE123	Public Communication	3.0	3.0
WLD 123	SMAW Welding Processes <sup>A</sup>	<u>4.0</u>	<u>6.0</u>
<b>ELECTIVE CREDITS/CONTACT HOURS:</b>		6.0	7.0
<b>MINIMUM PROGRAM CREDITS/CONTACT HOURS:</b>		60.0	74.75

## SUGGESTED SEQUENCING OF COURSES:

YEAR 1 (FALL SEMESTER) <u>14.0-15.0</u> CREDITS		CREDITS	CONTACT HRS	YEAR 1 (SPRING SEMESTER) <u>15-18.0</u> CREDITS		CREDITS	CONTACT HRS
MTH 110 Tech Math I or MTH 113 Inter Alg	3.0-4.0	4.0	MTH112 Tech Math II or MTH122 Plane Trig	3.0	3.0-4.0		
MFG 101 Machining Processes	4.0	6.0	PHY 111 Applied Physics	3.0	4.0		
MFG 120 Print Interpretation & Process	3.0	4.0	CAD 150 3D Modeling	3.0	4.0		
APP 100E Electrical Studies	3.0	4.0	CIS 171,CIS 172,CIS 173 Spreadsheets I,II,III	3.0	3.75		
EGR 122 Intro to Engineering	<u>1.0</u>	<u>1.0</u>	American Government Requirement	<u>3.0-6.0</u>	<u>3.0-6.0</u>		
TOTAL	14.0-15.0	19.0	TOTAL	15.0-18.0	17.75-20.75		
YEAR 2 (FALL SEMESTER) <u>15.5</u> CREDITS		CREDITS	CONTACT HRS	YEAR 2 (SPRING SEMESTER) <u>15.5</u> CREDITS		CREDITS	CONTACT HRS
ENG 111 or ENG 120	3.0	3.0	ENG 112 or 123	3.0	3.0		
MET 200 Material Science	3.0	4.0	IND 225 Strength of Materials	4.0	5.0		
CAD 220 Machine Design	3.5	5.0	CAD 250 Advanced 3D Modeling	3.5	5.0		
IND 229 Hydraulics & Pneumatic Power	3.0	4.0	EGR 130 Team Design Project	2.0	3.0		
Technical Elective	<u>3.0</u>	<u>4.0</u>	Technical Elective	<u>3.0</u>	<u>4.0</u>		
TOTAL	15.5	20.0	TOTAL	15.5	21.0		

### NOTES:

<sup>A</sup>Included in occupational specialty – GPA of 2.0 or higher must be maintained in the area of occupational specialty.