

# Advanced Manufacturing COE

## **ADVANCED MANUFACTURING**

### **MACHINING TECHNOLOGY**

Machining Technology - AAS . . . . .	2
Machining Technology - Basic Manufacturing/Machining - Certificate: Level I . . . . .	3
Machining Technology - Machining Technology - Certificate: Level II. . . . .	4

### **MANUFACTURING ENGINEERING TECHNOLOGY**

Manufacturing Engineering Technology - AAS . . . . .	5
Manufacturing Engineering Technology - Technician - Certificate: Level II. . . . .	6
Manufacturing Engineering Technology - High Value Manufacturing - Certificate: Level II . . . . .	7

# Workforce Degrees and Certificates

## MACHINING TECHNOLOGY

### Associate of Applied Science

#### FIRST YEAR

##### First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
MCHN	1343	Machine Shop Mathematics	3
MCHN	1302	Print Reading for Machining Trades	3
ENTC	1347	Safety & Ergonomics	3
MCHN	1338	Basic Machine Shop I	3
<b>Semester Total</b>			<b>15</b>

##### Second Semester - Spring

HYDR	1345	Hydraulics & Pneumatics	3
MCHN	1308	Basic Lathe	3
MCHN	1313	Basic Milling Operations	3
MCHN	1320	Precision Tools & Measurement	3
MCHN	1305	Metals & Heat Treatment	3
<b>Semester Total</b>			<b>15</b>

#### SECOND YEAR

##### First Semester - Fall

			SCH
MCHN	2333	Advanced Lathe Operations	3
MCHN	2337	Advanced Milling Operations	3
INMT	1370	Lean Manufacturing	3
MCHN	2331	Operation of CNC Turning Centers <b>OR</b>	
INMT	1345	Computer Numerical Controls	3
<b>Semester Total</b>			<b>12</b>

##### Second Semester - Spring

XXXX	#3## <sup>1</sup>	Social/Behavioral Sciences Elective	3
HUMA	1301	Introduction to Humanities <b>OR</b>	
XXXX	#3## <sup>1</sup>	Humanities/Fine Arts Elective	3
XXXX	#3## <sup>1</sup>	General Education Elective	3
XXXX	#3## <sup>1</sup>	General Education Elective	3
XXXX	#3## <sup>1</sup>	Math/Natural Science Elective	3
<b>Semester Total</b>			<b>15</b>

##### Third Semester - Summer

MCHN	2341	Advanced Machining I (Capstone)	3
<b>Semester Total</b>			<b>3</b>

**Total Minimum Credits for the AAS Degree** **60**

<sup>1</sup> A list of electives appears in the Core Curriculum section of this catalog.

# Workforce Degrees and Certificates

## MACHINING TECHNOLOGY

### Certificate - Level 2

#### FIRST YEAR

##### First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
MCHN	1343	Machine Shop Mathematics	3
MCHN	1302	Print Reading for Machining Trades	3
ENTC	1347	Safety & Ergonomics	3
MCHN	1338	Basic Machine Shop I	3
<b>Semester Total</b>			<b>15</b>

##### Second Semester - Spring

HYDR	1345	Hydraulics & Pneumatics	3
MCHN	1308	Basic Lathe	3
MCHN	1313	Basic Milling Operations	3
MCHN	1320	Precision Tools & Measurement	3
MCHN	1305	Metals & Heat Treatment	3
<b>Semester Total</b>			<b>15</b>

#### SECOND YEAR

##### First Semester - Fall

			SCH
MCHN	2337	Advanced Milling Operations	3
MCHN	2333	Advanced Lathe Operations	3
INMT	1370	Lean Manufacturing	3
MCHN	2331	Operation of CNC Turning Centers <b>OR</b>	
INMT	1345	Computer Numerical Controls	3
<b>Semester Total</b>			<b>12</b>

##### Second Semester - Spring

MCHN	2341	Advanced Machining I (Capstone)	3
<b>Semester Total</b>			<b>3</b>

**Total Minimum Credits for the Level 2 Certificate** **45**

# Workforce Degrees and Certificates

## MACHINING TECHNOLOGY - BASIC MANUFACTURING/MACHINING

### Certificate - Level 1

First Semester - Fall			SCH
ENTC	1347	Safety & Ergonomics	3
MCHN	1302	Print Reading for Machining Trades	3
MCHN	1338	Basic Machine Shop I	3
MCHN	1343	Machine Shop Mathematics	3
<b>Semester Total</b>			<b>12</b>
Second Semester - Spring			
HYDR	1345	Hydraulics & Pneumatics	3
MCHN	1308	Basic Lathe	3
MCHN	1313	Basic Milling Operations (Capstone)	3
<b>Semester Total</b>			<b>9</b>
<b>Total Minimum Credits for the Level 1 Certificate</b>			<b>21</b>

# Workforce Degrees and Certificates

## Manufacturing Engineering Technology

### MANUFACTURING ENGINEERING TECHNOLOGY

#### Associate of Applied Science

##### FIRST YEAR

First Semester - Fall			SCH
EDUC	1300	Learning Framework	3
MCHN	1343	Machine Shop Mathematics	3
MCHN	1302	Print Reading for Machining Trades	3
ENTC	1347	Safety & Ergonomics	3
MCHN	1338	Basic Machine Shop I	3
<b>Semester Total</b>			<b>15</b>

##### Second Semester - Spring

HYDR	1345	Hydraulics & Pneumatics	3
ELPT	1311	Basic Electrical Theory	3
MCHN	1308	Basic Lathe	3
MCHN	1313	Basic Milling Operations	3
INMT	1370	Lean Manufacturing	3
<b>Semester Total</b>			<b>15</b>

##### SECOND YEAR

First Semester - Fall			SCH
INMT	1345	Computer Numerical Controls	3
INMT	1317	Industrial Automation	3
MCHN	2331	Operation of CNC Turning Centers	3
INMT	1343	Computer Aided Design/Computer Aided Manufacturing (CAD/CAM)	3
XXXX	#3## <sup>1</sup>	Math/Natural Science Elective	3
<b>Semester Total</b>			<b>15</b>

##### Second Semester - Spring

HUMA	1301	Introduction to Humanities <b>OR</b>	
XXXX	#3## <sup>1</sup>	Humanities/Fine Arts Elective	3
XXXX	#3## <sup>1</sup>	Social/Behavioral Sciences Elective	3
XXXX	#3## <sup>1</sup>	General Education Elective	3
XXXX	#3## <sup>1</sup>	General Education Elective	3
MCHN	2335	Advanced CNC Machining (Capstone)	3
<b>Semester Total</b>			<b>15</b>

**Total Minimum Credits for the AAS Degree** **60**

<sup>1</sup>A list of electives appears in the Core Curriculum section of this catalog.

# Workforce Degrees and Certificates

## MANUFACTURING ENGINEERING TECHNOLOGY - TECHNICIAN

### Certificate - Level 2

#### FIRST YEAR

##### First Semester - Fall

			SCH
EDUC	1300	Learning Framework	3
MCHN	1343	Machine Shop Mathematics	3
MCHN	1302	Print Reading for Machining Trades	3
ENTC	1347	Safety & Ergonomics	3
MCHN	1338	Basic Machine Shop I	3
<b>Semester Total</b>			<b>15</b>

##### Second Semester - Spring

HYDR	1345	Hydraulics & Pneumatics	3
ELPT	1311	Basic Electrical Theory	3
MCHN	1308	Basic Lathe	3
MCHN	1313	Basic Milling Operations	3
INMT	1345	Computer Numerical Controls	3
INMT	1370	Lean Manufacturing (Capstone)	3
<b>Semester Total</b>			<b>18</b>

#### SECOND YEAR

##### First Semester - Fall

INMT	1345	Computer Numerical Controls	3
MCHN	2331	Operation of CNC Turning Centers	3
INMT	1343	Computer Aided Design/Computer Aided Manufacturing (CAD/CAM)	3
INMT	1317	Industrial Automation	3
<b>Semester Total</b>			<b>12</b>

##### Second Semester - Spring

MCHN	2335	Advanced CNC Machining (Capstone)	3
<b>Semester Total</b>			<b>3</b>

**Total Minimum Credits for the Level 2 Certificate** **45**

# Workforce Degrees and Certificates

## MANUFACTURING ENGINEERING TECHNOLOGY - HIGH VALUE MANUFACTURING

### Certificate - Level 2

#### First Semester - Fall

			SCH
ENTC	1347	Safety & Ergonomics	3
MATH	1314	College Algebra	3
MCHN	1302	Print Reading for Machining Trades	3
MCHN	1338	Basic Machine Shop I	3
PTRT	1301	Introduction to Petroleum Industry	3
<b>Semester Total</b>			<b>15</b>

#### Second Semester - Spring

INCR	1302	Physics of Instrumentation	3
INMT	1345	Computer Numerical Controls	3
INMT	1371	Materials & Applications	3
MCHN	1308	Basic Lathe	3
MCHN	1313	Basic Milling Operations	3
PTRT	1470	Petroleum Data Management	4
<b>Semester Total</b>			<b>19</b>

#### Third Semester - Summer

INMT	1343	Computer Aided Design/Computer Aided Manufacturing (CAD/CAM)	3
INMT	1372	Quality & Assessment	3
INMT	1373	Machine Shop Logistics	3
INMT	2370	Project Management (Capstone)	3
PTRT	2370	Petroleum Operations	3
<b>Semester Total</b>			<b>15</b>

**Total Minimum Credits for the Level 2 Certificate** **49**