

## AS in Machine and Metals Technology, Occupational

College Learning Outcomes Matrix: Rate each course from 1 to 5 with 5 being the most important.

<b>AS in Machine and Metals Technology, Occupational</b>	<b>Year of SLO Review</b>	<b>1. Written, Oral and Visual Communication:</b>	<b>2. Scientific and Quantitative Reasoning:</b>	<b>3. Critical Thinking 4. Problem Solving</b>	<b>5. Information Literacy:</b>	<b>GE</b>	<b>DEGREE</b>
MACH 130 Welding I	5/2011	3	3	5	3		X
MACH 140 Intermediate Machine Tool Processes	5/2011	3	3	5	3		X
MACH 145 Computer Numerical Control Machining/Mill	5/2011	3	3	5	3		X
MACH 165 Blueprint Reading for the Machine	5/2011	3	3	5	3		X
CIS 101 Introduction to Personal Computers and Operating Systems	5/2011	3	3	5	3		X
ELEC 100 Fundamentals of Electronics	5/2011	3	3	5	3		X
MACH 155 Computer Numerical Control Machining/Lathe	5/2011	3	3	5	3		X
MACH 240 Advanced Machine Tool Processes	5/2011	3	3	5	3		X
MACH 131 Welding II	5/2011	3	3	5	3		X
MACH 250 Applications of Machine Tool Technology	5/2011	3	3	5	3		X
WE 298B Occupational Work Experience	5/2011	3	3	5	3		X

## AS in Machine and Metals Technology, Occupational

### COLLEGE WIDE/ GENERAL EDUCATION SLOS

**WHAT ASSIGNMENTS DO YOU GIVE IN THESE CLASSES THAT ASSESS THE FOLLOWING GE SLOS?**

**What assessment tools do you use? Assess only SLOs that you rated 4 or 5.**

<b>AS in Machine and Metals Technology, Occupational</b>	<b>1. Written, Oral and Visual Communication:</b>	<b>2. Scientific and Quantitative Reasoning:</b>	<b>3. Critical Thinking 4. Problem Solving</b>	<b>5. Information Literacy:</b>	<b>GE</b>	<b>DEGREE</b>
MACH 130 Welding I			Lab practical			X
MACH 140 Intermediate Machine Tool Processes			Lab practical			X
MACH 145 Computer Numerical Control Machining/Mill			Lab practical			X
MACH 165 Blueprint Reading for the Machine			Lab practical			X
CIS 101 Introduction to Personal Computers and Operating Systems			Lab practical			X
ELEC 100 Fundamentals of Electronics			Lab practical			X
MACH 155 Computer Numerical Control Machining/Lathe			Lab practical			X
MACH 240 Advanced Machine Tool Processes			Lab practical			X
MACH 131 Welding II			Lab practical			X
MACH 250 Applications of Machine Tool Technology			Lab practical			X
WE 298B Occupational Work Experience			Lab practical			X

## AS in Machine and Metals Technology, Occupational

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#### REQUIREMENTS

##### First Semester

MACH	130	Welding I
MACH	140	Intermediate Machine Tool Processes
MACH	145	Computer Numerical Control Machining/Mill
MACH	165	Blueprint Reading for the Machine Trades

##### Second Semester

CIS	101	Introduction to Personal Computers and Operating Systems
ELEC	100	Fundamentals of Electronics
<b>MACH</b>	<b>97*</b>	<b>Machine Trades Math</b> no outline
MACH	155	Computer Numerical Control Machining/Lathe
MACH	240	Advanced Machine Tool Processes

##### Third Semester

<b>ENGG</b>	<b>256</b>	<b>Practical Materials Science</b> doesn't exist in catalog
MACH	131	Welding II
MACH	250	Applications of Machine Tool Technology
WE	298B	Occupational Work Experience

#### SLOS

##### Technical knowledge & skills:

Students will demonstrate the technical knowledge and technical skills that will serve to prepare them for entry into careers of the manufacturing and related industries.

##### Applied knowledge & skills

Students will determine the materials that are suitable for specific applications in the machine and metals technology fields and demonstrate their applications.

##### Critical thinking

Students will use critical and creative thinking when approaching technical problems.

## AS in Machine and Metals Technology, Occupational

### THESE DEGREE OUTCOMES EQUAL WHICH COURSE OUTCOMES FOR THESE COURSES?

<b>AS in Machine and Metals Technology, Occupational</b>	Students will demonstrate the technical knowledge and technical skills that will serve to prepare them for entry into careers of the manufacturing and related industries.	Students will determine the materials that are suitable for specific applications in the machine and metals technology fields and demonstrate their applications.	Students will use critical and creative thinking when approaching technical problems.
MACH 130 Welding I	1	2	3
MACH 140 Intermediate Machine Tool Processes	1	2	3,4
MACH 145 Computer Numerical Control Machining/Mill	1	2	3,4
MACH 165 Blueprint Reading for the Machine	1	2,3	4,5
CIS 101 Introduction to Personal Computers and Operating Systems	1	2	3,4
ELEC 100 Fundamentals of Electronics	1	2	3,4
MACH 155 Computer Numerical Control Machining/Lathe	1	2,3	4,5
MACH 240 Advanced Machine Tool Processes	1	2	3
MACH 131 Welding II	1	2	3,4
MACH 250 Applications of Machine Tool Technology	1	2	3,4
WE 298B Occupational Work Experience	1	2,3	4,5

## AS in Machine and Metals Technology, Occupational

**IN WHICH COURSES ARE THESE DEGREE SLOS ASSESSED? Use “I” for Intro, “P” for Practice and “M” for Mastery.**

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MACH 130 Welding I	1	2	3
MACH 140 Intermediate Machine Tool Processes	1	2	3,4
MACH 145 Computer Numerical Control Machining/Mill	1	2	3,4
MACH 165 Blueprint Reading for the Machine	1	2,3	4,5
CIS 101 Introduction to Personal Computers and Operating Systems	1	2	3,4
ELEC 100 Fundamentals of Electronics	1	2	3,4
MACH 155 Computer Numerical Control Machining/Lathe	1	2,3	4,5
MACH 240 Advanced Machine Tool Processes	1	2	3
MACH 131 Welding II	1	2	3,4
MACH 250 Applications of Machine Tool Technology	1	2	3,4
WE 298B Occupational Work Experience	1	2,3	4,5

## AS in Machine and Metals Technology, Occupational

### DEGREE SLOS

**WHAT ASSIGNMENTS DO YOU GIVE IN THESE CLASSES THAT ASSESS THE FOLLOWING DEGREE SLOS? What assessment tools do you use? Assess only SLOs that you rated 4 or 5.**

<b>AS in Machine and Metals Technology, Occupational</b>	Students will demonstrate the technical knowledge and technical skills that will serve to prepare them for entry into careers of the manufacturing and related industries.	Students will determine the materials that are suitable for specific applications in the machine and metals technology fields and demonstrate their applications.	Students will use critical and creative thinking when approaching technical problems.
MACH 130 Welding I	1	2	3
MACH 140 Intermediate Machine Tool Processes	1	2	3,4
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WE 298B Occupational Work Experience	1	2,3	4,5

## AS in Machine and Metals Technology, Occupational

MACH_130	Welding I	Revise Course
<b>Expected Outcomes for Student:</b>		
<ol style="list-style-type: none"><li>1. Identify and use common shop safety practices and equipment to complete required tasks and assignments</li><li>2. Demonstrate basic use of oxy-fuel welding according to industry standards in the flat and horizontal positions</li><li>3. Demonstrate basic use and operation of shielded metal arc welding equipment according to industry standards in the flat and horizontal positions</li></ol>		

MACH_140	Intermediate machine tool processes	Revise Course
<b>Expected Outcomes for Student:</b>		
<ol style="list-style-type: none"><li>1. Upon completion of this course, students will be able to:</li><li>2. Identify and use common shop safety practices and equipment to complete required tasks and assignments</li><li>3. Describe the use, operation, and applications of measuring instruments</li><li>4. Students will be able to machine a basic part of simple complexity from a blueprint using manual machinery</li></ol>		

MACH_145	CNC Machining/Mill	Revise Course
<b>Expected Outcomes for Student:</b>		
<ol style="list-style-type: none"><li>1. Upon completion of this course, students will be able to:</li><li>2. Identify and use common shop safety practices and equipment to complete required tasks and assignments</li><li>3. Students will demonstrate the ability to manipulate cnc machines to turn them on and to perform startup procedures.</li><li>4. Students will be able to produce a mill part of basic complexity provided by the instructor and within tolerances using a CNC machine</li></ol>		

MACH_165	Blue Print Reading	Revise Course
<b>Expected Outcomes for Student:</b>		
<ol style="list-style-type: none"><li>1. Upon completion of this course,</li><li>2. students will be able to operate required computer equipment to complete tasks and assignments</li><li>3. Read and interpret common detail drawings found in a machine shop.</li><li>4. Student will interpret intermediate level blueprints involving orthographic views, section views and cutting planes.</li><li>5. Students will be able to calculate dimensions necessary for machining a part of moderate complexity from a blueprint/drawing</li></ol>		

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CIS_101	Introduction to Personal Computers and Operating Systems	Revise Course
<b>Expected Outcomes for Student:</b>		
<ol style="list-style-type: none"> <li>1. Identify and correctly select classes of software appropriate for specific problem solving tasks</li> <li>2. Demonstrate the capability to properly configure a personal computer system given specific performance tasks required by the system</li> <li>3. Demonstrate file creation and management skills using folders to organize content</li> <li>4. Discuss strategies to maintain a malware free computer through the use of software and user behaviors</li> </ol>		
ELEC_100	Fundamentals of Electronics	Revise Course
<b>Expected Outcomes for Student:</b>		
<ol style="list-style-type: none"> <li>1. Upon completion of this course students will be able to:</li> <li>2. Demonstrate by testing and project design - the fundamentals of electronics.</li> <li>3. Design simple circuits and systems.</li> <li>4. Demonstrate the ability to read and interpret the technical information.</li> </ol>		
MACH_155	CNC Machining/Lathe	Revise Course
<b>Expected Outcomes for Student:</b>		
<ol style="list-style-type: none"> <li>1. Upon completion of this course, students will be able to:</li> <li>2. Use common shop safety and accurately set up a production operation of a CNC lathes</li> <li>3. practices and equipment to complete required tasks and assignments</li> <li>4. Students will be able to produce a work piece within tolerances of the blueprint using a CNC lathe machine and a CNC program of simple complexity provided by the instructor.</li> <li>5. The student will plan the work, select the programming method given the tolerances of the part, select fixture, tools and run a first article on a CNC lathe.</li> </ol>		
MACH_240	Advanced Machine Tool Processes	Revise Course
<b>Expected Outcomes for Student:</b>		
<ol style="list-style-type: none"> <li>1. Upon completion of this course, students will be able to:</li> <li>2. Identify and use common shop safety practices and equipment to complete required tasks and assignments</li> <li>3. Recognize and predict changes in the properties of metal when exposed to machine tool techniques</li> </ol>		

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Calculate and set appropriate angles for grinding a tool bit
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<b>MACH</b>	<b>97*</b>	<b>Machine Trades Math – NO UPDATED COR – W/SLOS</b>
<b>ENGG</b>	<b>256</b>	<b>Practical Materials Science - DOESN'T EXIST.</b>

<b>MACH_131</b>	<b>Welding II</b>	<b>Revise Course</b>
<b>Expected Outcomes for Student:</b>		
<ol style="list-style-type: none"> <li>1. Upon completion of this course, students will be able to:</li> <li>2. Identify and use common shop safety practices and equipment to complete required tasks and assignments</li> <li>3. Demonstrate basic use and operation of mig welding equipment according to industry standards in the flat and horizontal positions</li> <li>4. Demonstrate basic use and operation of tig welding equipment according to industry standards in the flat and horizontal positions</li> </ol>		

<b>MACH_250</b>	<b>Applications of Machine tool technology</b>	<b>Revise Course</b>
<b>Expected Outcomes for Student:</b>		
<ol style="list-style-type: none"> <li>1. Upon completion of this course, students will be able to:</li> <li>2. Identify and use common shop safety practices and equipment to complete required tasks and assignments</li> <li>3. Employ state of the art industry techniques to acquire skills used in manufacturing</li> <li>4. Practice laboratory methods to prepare for machine and metals technology industry certifications</li> </ol>		

<b>WE_298B</b>	<b>Occupational Work Experience</b>	<b>Revise Course</b>
<b>Expected Outcomes for Student:</b>		
<p>After completion of this course the student should be able to:</p> <ol style="list-style-type: none"> <li>1. Create 1 college-level work-related job learning objective for each unit attempted.</li> <li>2. Identify learning processes required for the attainment of the objective(s).</li> <li>3. Identify resources necessary for the completion of the objective(s).</li> <li>4. Accomplish job related learning objectives according to course and work supervisor standards.</li> <li>5. Increase understanding of the learning process through the self-evaluation process.</li> </ol>		

## **AS in Machine and Metals Technology, Occupational**