Faculty members are required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

**DEPT.** MACH  **COURSE NUMBER:** 1405

**NUMBER OF CREDITS:** 4  **Lecture:** 2  **Lab:** 2

<table>
<thead>
<tr>
<th>Course Title:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machining Fundamentals &amp; Processes I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Catalog Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide students the necessary skills to be able to operate manually operated tools and equipment found in the machining industry. Areas addressed will be safety, precision measurement, engine lathe, vertical mill, saw and drill press.</td>
</tr>
</tbody>
</table>

**FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)**

Goal 1: Communication: ____ by meeting the following competencies:

Goal 2: Critical Thinking: ____ by meeting the following competencies:

Goal 3: Natural Sciences: ____ by meeting the following competencies:

Goal 4: Mathematics/Logical Reasoning: ____ by meeting the following competencies:

Goal 5: History and the Social and Behavioral Sciences: ____ by meeting the following competencies:

Goal 6: The Humanities and Fine Arts: ____ by meeting the following competencies:

Goal 7: Human Diversity: ____ by meeting the following competencies:

Goal 8: Global Perspective: ____ by meeting the following competencies:

Goal 9: Ethical and Civic Responsibility: ____ by meeting the following competencies:

Goal 10: People and the Environment: ____ by meeting the following competencies:

<table>
<thead>
<tr>
<th>Prerequisites or Necessary Entry Skills/Knowledge:</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
</tr>
</tbody>
</table>
Topics to be Covered (General)

<table>
<thead>
<tr>
<th>Machine shop safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setup and operation of engine lathe, vertical mill, band saw and drill press.</td>
</tr>
<tr>
<td>Use of precision measuring tools to inspect parts.</td>
</tr>
</tbody>
</table>

Student Learning Outcomes

1. Recognize a safe work environment and the need for personal safety
2. Identify machining defects and quality
3. Operate manual tools found in industrial machine shops
4. Utilize precision measuring tools
5. Demonstrate safe operating skills of manually operated tools
6. Utilize Machinist's Handbook as a reference guide
7. Display proper care of precision measuring tools

Is this course part of a transfer pathway: Yes [ ] No [X]

*If yes, please list the competencies below

All syllabi must include the following statement:

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, high school students are encouraged to notify their counselor and instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or via your preferred Telecommunications Relay Service.

A Member of the Minnesota State Colleges and Universities System
An Affirmative Action Equal Opportunity Educator/Employer

Revised 8/19