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: 1415

NUMBER OF CREDITS: 4 Lecture: 2 Lab: 2

Course Title:
Machining Fundamentals & Processes II

Catalog Description:
Provides students with continued skills to manually operate tools and equipment found in the machining industry. Areas addressed will be safety, precision measurement, engine lathe, vertical mill, saw, surface grinder, tool-room lathe and drill press.

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:

Prerequisites or Necessary Entry Skills/Knowledge:
None
### Topics to be Covered (General)

<table>
<thead>
<tr>
<th>Machine shop safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation of engine lathe, vertical mill, saw, tool-room lathe, drill press and surface grinder.</td>
</tr>
<tr>
<td>Use of precision measuring tools to inspect part.</td>
</tr>
</tbody>
</table>

### Student Learning Outcomes

| 1. Operate engine lathe, vertical mill, surface grinder, saw and drill press |
| 2. Execute safe operating procedures of machines |
| 3. Calculate rpm, feed rates |
| 4. Utilize Machinist’s Handbook as a reference |
| 5. Identify tooling |
| 6. Explain the theory & geometry of cutting tools |
| 7. Identify thread nomenclature |
| 8. Identify machining defects and quality. |
| 9. Practice the use of precision measuring tools |

### Is this course part of a transfer pathway:

- **Yes** [ ]
- **No** [ ]

*If yes, please list the competencies below*

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### 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.

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