

MACH112 : Machine Practice III

General Information

Author:	• Jorge Palma
Course Code (CB01) :	MACH112
Course Title (CB02) :	Machine Practice III
Department:	MACH
Proposal Start:	Fall 2024
TOP Code (CB03) :	(0956.30) Machining and Machine Tools
CIP Code:	(48.0501) Machine Tool Technology/Machinist.
SAM Code (CB09) :	Clearly Occupational
Distance Education Approved:	No
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000548343
Curriculum Committee Approval Date:	05/22/2024
Board of Trustees Approval Date:	07/16/2024
Last Cyclical Review Date:	05/22/2024
Course Description and Course Note:	MACH 112 is designed to allow students or industrial workers to improve and update their machining skills. Techniques practiced are uses of lathe, mill, drill, grinder. Inspection strategies for the purpose of job advancement are presented.
Justification:	Mandatory Revision
Academic Career:	• Credit
Mode of Delivery:	
Author:	
Course Family:	

Academic Senate Discipline

Primary Discipline:	• Machine Tool Technology (Tool and die making)
Alternate Discipline:	No value
Alternate Discipline:	No value

Course Development

Basic Skill Status (CB08) Course is not a basic skills course. <input type="checkbox"/> Allow Students to Gain Credit by Exam/Challenge	Course Special Class Status (CB13) Course is not a special class. Pre-Collegiate Level (CB21) Not applicable.	Grading Basis • Grade with Pass / No-Pass Option Course Support Course Status (CB26) Course is not a support course
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General Education and C-ID

General Education Status (CB25)

Not Applicable

Transferability

Not transferable

Transferability Status

Not transferable

Units and Hours

Summary

Minimum Credit Units (CB07) 1

Maximum Credit Units (CB06) 1

Total Course In-Class (Contact) Hours 54

Total Course Out-of-Class Hours 0

Total Student Learning Hours 54

Credit / Non-Credit Options

Course Type (CB04)

Credit - Degree Applicable

Noncredit Course Category (CB22)

Credit Course.

Noncredit Special Characteristics

No Value

Course Classification Code (CB11)

Credit Course.

Variable Credit Course

Funding Agency Category (CB23)

Not Applicable.

Cooperative Work Experience

Education Status (CB10)

Weekly Student Hours

	In Class	Out of Class
Lecture Hours	0	0
Laboratory Hours	3	0
Studio Hours	0	0

Course Student Hours

Course Duration (Weeks) 18

Hours per unit divisor 0

Course In-Class (Contact) Hours

Lecture 0

Laboratory 54

Studio 0

Total 54

Course Out-of-Class Hours

Lecture 0

Laboratory 0

Studio 0

Total 0

Time Commitment Notes for Students

No value

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Prerequisite

MACH101 - Machine Technology I (in-development)

Objectives

- Demonstrate safety practices with machinery during milling and lathe operations.
- Perform a series of fundamental machining exercises in lathe and milling operations.
- Use precision inspection equipment.
- Demonstrate drilling, reaming, tapping and knurling procedures.
- Demonstrate the setup and utilization of various lathe and milling operations and procedures.

OR

Prerequisite

MACH107 - * Machine Practice I

Objectives

- Perform a series of machining exercises on the lathe, mill, and surface grinding machines.
- Complete an individual project designed by themselves and approved by the instructor.

Entry Standards

Entry Standards

Demonstrate critical thinking skills by attaining satisfactory scores on a written quizzes and examination.

Course Limitations

Cross Listed or Equivalent Course

Specifications

Methods of Instruction

Methods of Instruction	Laboratory
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Methods of Instruction	Discussion
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Methods of Instruction	Multimedia
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Methods of Instruction	Collaborative Learning
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Methods of Instruction	Demonstrations
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Methods of Instruction	Presentations
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Out of Class Assignments

- Write an essay describing how you completed the final project
- Reading homework
- Written self-evaluation assignments

Methods of Evaluation**Rationale**

Exam/Quiz/Test

Quizzes

Exam/Quiz/Test

Individual in-class projects (e.g. deburring tool)

Exam/Quiz/Test

Reading assignments

Exam/Quiz/Test

Final project (e.g. table mill stop)

Textbook Rationale

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
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John Walker, Bob Dixon	Machining Fundamentals	Goodheart-Wilcox	2023	978-1-64925-979-0
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Other Instructional Materials (i.e. OER, handouts)

No Value

Materials Fee

Learning Outcomes and Objectives

Course Objectives

Explain the safe and appropriate preparation and set-up of an advanced partproject.

Perform a series of individual operations on the engine lathe and milling machine.

Complete machining a complex designed part following establishedrequirements.

Demonstrate post-production inspection procedures.

SLOs

Demonstrate knowledge of machine safety.

Expected Outcome Performance: 70.0

<i>ILOs</i> Core ILOs	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.
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<i>MACH</i> Machinist - Certificate	Demonstrate the skills required in the field of machine and manufacturing technology, such as use of manual machining equipment.
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<i>MACH</i> Machinist - A.S. Degree Major	Demonstrate the skills required in the field of machine and manufacturing technology, such as use of manual machining equipment.
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Describe different machining processes including the lathe, mill, drill, and grinder.

Expected Outcome Performance: 70.0

<i>ILOs</i> Core ILOs	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.
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Identify and describe the usage of each machine.

Expected Outcome Performance: 70.0

<i>ILOs</i> Core ILOs	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.
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Additional SLO Information

Does this proposal include revisions that might improve student attainment of course learning outcomes?

No

Is this proposal submitted in response to learning outcomes assessment data?

No

If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.

No Value

SLO Evidence

No Value

Course Content

Lecture Content

No value

Laboratory/Studio Content

Lathe Processes (10 hours)

- Turning
- Facing
- Drilling
- Boring
- Threading inside and outside
- Tapering
- Form cutting

Milling (10 hours)

- End milling
- Straddle milling
- Gang milling
- Face milling
- Fly cutting
- Form cutting

Drilling (10 hours)

- Drilling
- Reaming
- Tapping
- Lapping
- Honing
- Counterboring
- Countersinking

Grinding (12 hours)

- Surface grinding
- Center grinding
- Tool grinding
- Tool post grinding

Inspection (12 hours)

- Machine
- Surface plate
- Tool

Total hours: 54

Additional Information

Is this course proposed for GCC Major or General Education Graduation requirement? If yes, indicate which requirement in the two areas provided below.

No

GCC Major Requirements

No Value

GCC General Education Graduation Requirements

No Value

Repeatability

Not Repeatable

Justification (if repeatable was chosen above)

No Value

Resources

Did you contact your departmental library liaison?

No

If yes, who is your departmental library liaison?

No Value

Did you contact the DEIA liaison?

No

Were there any DEIA changes made to this outline?

No Value

If yes, in what areas were these changes made:

No Value

Will any additional resources be needed for this course? (Click all that apply)

No Value

If additional resources are needed, add a brief description and cost in the box provided.

No Value