

Basic Lathe (MCHN 1408)



Credit: 4 semester credit hours (1 hours lecture, 18 hours lab)

Prerequisite/Co-requisite:

Course Description:

An introduction to the common types of lathes. Emphasis on basic parts, nomenclature, lathe operations, safety, machine mathematics, blueprint reading, and theory

Required Textbook and Materials:

1. *Machine Tool Practices* by Kibbe, Neely, Mayer and White, 9th edition
ISBN number is 978 0-13-501508-7; 0-13-501508-1
2. *Basic Blueprint Reading and Sketching* by C.T.Olivo & T.P.Olivo, 8th edition
ISBN number is 0-7668-0841-6
3. Equipment to be furnished by students:
 - a. Hard Hat (red)
 - b. Hearing protection (Ear plugs or Muffs 29 NRR+)
 - c. Fire retardant clothing (Nomex or equal)
 - d. Safety Glasses (Z 87+)
 - e. Gloves (leather or equal)
 - f. Shoes (substantial leather or equal w/heels- no open toes)

Course Objectives

Upon completion of this course, the student will be able to:

1. Identify engine lathe components.
2. List safety procedures.
3. Identify machine accessories.
4. Identify types of lathes.
5. Use formulas to calculate speeds and feeds.
6. Set up basic lathe operations
7. Perform metal removing operations such as turning, facing, drilling, grooving, turning between center, and threading. Perform basic machine maintenance.

Course Outline

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|---|--|
| A. Safety | d. Discuss proper PPE |
| a. Discuss Safety in Lab | B. Engine Lathe |
| b. Discuss Safety when using the machines | a. Identify the Engine Lathe |
| c. Discuss proper clothing | b. Discuss it's uses |
| | C. Layout and transfer measuring tools |

MCHN 1408
Course Syllabus

- a. Identify the Machinist's Layout tools
- b. Demo how to use the tools
- D. Hand
 - a. Identify the Machinist's hand tools
 - b. Demo how to safely use the tools
- E. Precision tools
 - a. Identify the Machinist's Precision tools
 - b. Demo how to use the tools
- F. Pedestal Grinder
 - a. Identify the pedestal grinder
 - b. Demo how to safely use the grinder
 - c. Discuss the proper PPE to wear when grinding
- G. Blueprint Reading
 - a. Discuss the uses of Blueprints
 - b. View blueprints in class
 - c. Draw up prints per instruction
 - d. Work a project from a Blueprint

Grade Scale

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

Course Evaluation

Final grades will be calculated according to the following criteria:

Activity	Percentage
Major test	75%
Class participation	25%
Total	100%

Course Requirements

1. Introduction to Machine Shop Safety
2. Identify Hand Tools
3. Learn to do Dimensional measurement
4. Identify and select materials
5. Be able to perform layout
6. Make preparation for Machining operations
7. Operate sawing, drilling, turning machines, vertical and horizontal milling machines

Attendance Policy:

1. Students in a 2 day class are allowed 2 unexcused absences.
2. An absence, excused or unexcused is counted 6 points off final grade.
3. More than 2 unexcused absences can result in an "F" in the course.
4. Being tardy 3 times equals 1 absence. (2 points each)

5. Students in a 1 day class are allowed 1 unexcused absence.(12 points off final grade)

Course Policies

Students must possess and present LIT ID to attend class.

1. No food, drinks, or use of tobacco products in class.
2. No foul or harsh language will be tolerated
3. Turn off all Cell Phones during lectures
4. Headphones may be worn only upon Instructor approval
5. Do not bring children to class.
6. No Cheating of any kind will be tolerated. Students caught cheating or helping someone to cheat can and will be removed from the class for the semester. Cheating can result from expulsion from LIT.
7. If you wish to drop a course, the student is responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an 'F' in the course.
8. Proper Dress. **Any intentional display of undergarments will not be tolerated and can result in the student being removed from the class. Pants will be worn belted at the waist as to allow the student to walk, climb, stoop and bend as required.** It is the student's responsibility to dress for work as if in an industrial environment, long pants, shirts with sleeves, substantial footwear (full leather shoes or boots with heels, composition oil resistant soles, no sandals, flip flops, cloth shoes). Safety glasses and hard hats will be necessary as the class requires.
9. Internet Usage
 - a. Classroom computers have access to the internet.
 - b. Student usage of the internet will be monitored.
 - c. Proper usage of the internet will be allowed. Used for classroom research or as directed.
 - d. Any unauthorized use of the internet will not be tolerated.
 - e. Improper usage of the internet, such as profanity, pornography, gambling, etc... will result in disciplinary action not limited to expulsion from LIT.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building.

Course Schedule

Week	Topic	Reference
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MCHN 1408
Course Syllabus

1	Course introduction and policies <ul style="list-style-type: none">• Lecture• Lab: Practice	Handouts
2	Introduction to Machine Tool Practices <ul style="list-style-type: none">• Lecture• Lab: Practice	Section A
3/4	Identification of Hand Tools <ul style="list-style-type: none">• Lecture• Lab: Practice with tools	Section B
5/6	Dimensional Measurements <ul style="list-style-type: none">• Lecture• Lab: Practice	Section C
7/8	Material Selection and Identification <ul style="list-style-type: none">• Lecture• Lab: Practice	Section D
9/10	Perform Layout <ul style="list-style-type: none">• Lecture• Lab: Practice	Section E
11/12	Preparation for Machining Operations <ul style="list-style-type: none">• Lecture• Lab: Practice	Section F
13/14/15/16	Operating Mills, saws, drilling machines <ul style="list-style-type: none">• Lecture• Lab: As Assigned	Section G-K

Contact Information:

Instructor: Mr. Clyde Bradley
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Office Hours: 10:30 am - 2:30 pm MW