**MCHN 1308 – Basic Lathe**

CRN 86486 – Spring 2016

Central Campus - Room JBW 119 | 7:00AM - 11:00AM | MO & WE

3 credit hours (2 lecture, 4 lab)/ 96 hours per semester/ 16 weeks

**INSTRUCTOR:**

Shawn Trumbo

**CONTACT INFORMATION:**

Office Hrs. 11AM ~12PM MO & WE

Houston Community College, Central Campus

Machine Technology Department

1301 Alabama

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**COURSE LEVEL:  Introductory**

**Course Description.**An introduction to the lathe, machine nomenclature, basic machine operations and procedures, safety, machine mathematics, and theory.

**PREREQUISITE:**

MCHN 1338 (Basic Machine Shop)

TECM 1301 (Tech Math)

MCHN 1302 (Print Reading)

All with “C” or better.

**Course Student Learning Outcomes**Upon successful completion, you will be able to:

1. Identify use and application of lathe work holding devices.

2. Identify use and application of various lathe tools and tool holding devices.

3. Perform mathematical calculations common to turning in a manufacturing environment.

4. Describe and apply proper lathe setup and safety procedures.

5. Create parts to the given specifications using information provided on blueprints.

**Learning Objectives**

The successful completion of these learning objectives will ensure a meaningful educational experience. You will:

1.1 Explain Differences between various work holding devices for the lathe.

1.2 Explain functions and applications of various work holding devices for the lathe.

2.1 Explain functions and applications of various lathe tools.

2.2 Explain differences between various tool holding devices for the lathe.

2.3 Explain functions and applications of various tool holding devices for the lathe.

3.1 Calculate spindle proper speeds.

3.2 Calculate proper feed rates.

3.1 Demonstrate understanding of fractional and decimal math and conversions

between fractions and decimals.

3.3 Demonstrate ability to solve right triangles using sine, cosine, and tangent

trigonomic functions.

4.1 Apply proper technics to align parts and machinery.

4.2 Relate understanding of nomenclature of machines.

4.3 Relate and apply general lathe safety.

5.1 Ability to produce lathe projects #1 thru 4 to print specifications as required.

**Instructional Methods**

As an instructor, I want my students to be successful. I feel that it is my responsibility to provide you with knowledge concerning the engine lathe by modeling good teaching strategies that allow you to connect the information that you learn in this course to the real world.

As a student wanting to learn about the engine lathe, it is your responsibility to read the assigned chapters in the textbook, submit assignments and projects on their due dates, study for the exams, participate in face-to-face classroom activities, utilize the online component of the course, and enjoy yourself throughout the experience**.**

**Student Assignments**

Assignments have been developed that will enhance your learning. To better understand a topic, you will be given assignments on key information that you will need to remember for your success in basic lathe. To complete and pass this course you will be required to successfully complete the following on time:

All in class projects.

The Midterm Exam.

The Final Exam.

Online Quizzes and assignments *including Mind Tap assignments as required*.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | **16 WEEK CALENDAR** | | | |  |  |
|  |  |  |  |  | | |  |  |  |
|  | Week# |  | Dates | Holidays | | | Academic | Chapter/part |  |
|  | 1 |  | 1/19- 1/23 |  |  |  | 1/19 **Classes begin** | Introduction/orientation |  |
|  | 2 |  | 1/24 - 1/30 |  |  |  |  | 3/1 |  |
|  | 3 |  | 1/31 - 2/6 |  |  |  | **2/1 ODR – 2/4 LD 70%** | 3/2 |  |
|  | 4 |  | 2/7 - 2/13 |  |  |  | **2/10 LD 25% refund** | 4/1 |  |
|  | 5 |  | 2/14 - 2/20 | 15th Pres. | | |  | 4/2 |  |
|  | 6 |  | 2/21 - 2/27 |  |  |  |  | 4/3 |  |
|  | 7 |  | 2/28 - 3/5 |  |  |  |  | 4/4 |  |
|  | 8 |  | 3/6 - 3/12 |  |  |  |  | MIDTERM |  |
|  | Spring |  | 3/13 - 3/19 | Spring Break | | | 3/14 - 3/18 –  Spring Break |  |  |
|  | Break |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | 9 |  | 3/20 - 3/26 |  |  |  |  | 4/5 |  |
|  | 10 |  | 3/27 - 4/2 |  |  |  |  | 5/1 |  |
|  | 11 |  | 4/3 - 4/9 |  |  |  |  | 5/2 |  |
|  | 12 |  | 4/10 - 4/16 |  |  |  |  | 5/3 |  |
|  | 13 |  | 4/17 - 4/23 |  |  |  |  | 5/4 |  |
|  | 14 |  | 4/24 – 4/30 |  |  |  |  | 5/5 |  |
|  | 15 |  | 5/1 - 5/7 |  |  |  | 5/8 instruction ends | 5/6 |  |
|  | 16 |  | 5/11 – 5/15 |  |  |  |  | FINAL EXAM |  |

Grades are available to students after 5/18

**Program/Discipline Requirements**

**HCC Grading Scale**

Please see the student handbook for the current grading scale.

<http://www.hccs.edu/district/students/student-handbook/>

**Grading Criteria**

I will conduct quizzes, exams, and assessments that you can use to determine how successful you are at achieving the course learning outcomes (mastery of course content and skills) outlined in the syllabus. If you find you are not mastering the material and skills, you are encouraged to reflect on how you study and prepare for each class. I welcome your observations on what you discover and may be able to assist you in finding resources that will improve your performance.

**Assessments**

Assignments and Projects 50%

Mid Term Exam 20%

Final Exam 20%

Instructor’s discretion

(Attendance, attitude,

class participation, etc.) 10%

Final Grade 100%

**Instructional Materials**

TOOLS: (must be usable)

**1.** 0-3 inch Standard Micrometer set with vernier scale, (carbide faces are preferable). $65

**2.** 6 inch Digital or Dial Caliper. $15 @

**3.** 6 inch Machinist Scale. $3 @

**4.** Vertical Test Indicator (.0005” resolution) with Mounting Attachments, (Stem and Clamp). $23 @

**5.** Indicol or other MILL test indicator mounting device. $35 @

**6.** Dial Indicator, 1 inch range, with Mounting Hardware for Attachment to a Magnetic Base. $20 @

**7.** Magnetic Base, (best purchased with a fine adjustment screw). $20 @

**8.** Basic Protractor $8

**9.** Combination Square Set. $50

**10.** Thread wire set. $14 \*

**11.** Thread gage $3.50 \*

**12.** Radius gages set. $20

**13.** Edge Finder $6 @

**14.** Pocket Scribe $3 @

**15.** Dead Blow Hammer $10

**16.** Allen Wrench Sets, Metric and SAE. $26

**17.** 10 inch Adjustable Wrench. $10

**18.** Combination Wrench Set. 3/8 inch to 1 inch.\*

**19.** Combination Slip Joint Pliers. $10

**20.** Ball Peen Hammer. $10

**21.** Assorted screwdrivers. $10

**22.** Prick and center punches. $6.

**23.** 1,2,3 block set $12.

**24.** Mighty Mag indicator holder $10.

@ You should already have these.

\* Can wait until advanced classes.

These tools can be purchased at the tool and supply of your choice. A few *examples* are Bass Tools or Rex Supply. Some of these tools could be purchased at Harbor Freight. Ultimately, you must make choices about quality based on your own preferences and finances. All of these tools will be useful at any job you might get working in a machine shop if you work on the shop floor.

**TEXTBOOK**

**1. Precision Machining Technology 2nd Edition with 910 day MindTap**

Peter J. Hoffman; Eric S. Hopewell; Brian Janes

**ISBN 13:** 9781305430747

(If you already have the book use **ISBN 13:** 9781305374737)

Delmar-Cengage Learning

**2. Machinery's Handbook Pocket Companion**

Latest edition number: 29

**ISBN 13:** 9780831129118

Industrial Press, Inc.

**A computer with internet access.**

***To access the online component of this course***:

See the end of this document.

**COURSE POLICIES**

**Attendance**

Students are expected to attend classes regularly, and to be on time for every class period. Students can be dropped from a class due to excessive absences. Excessive tardiness may be considered absences. Any student with more than 4 unexcused absences will automatically be assigned a grade of “Fx” for the class and dropped. The grade of Fx indicates that the student was dropped for attendance reasons and the student's future financial aid may be affected. Students are responsible for subjects, assignments, and projects covered during their absences. You are expected to attend all lecture classes and labs regularly. You are also responsible for materials covered during your absences. Instructors may be willing to consult with you for make-up assignments, but it is your responsibility to contact the instructor. Class attendance is monitored daily. Although it is your responsibility to drop a course for nonattendance, the instructor has the authority to drop you for excessive absences. You may be dropped from a course after accumulating absences in excess of 12.5 percent of the total hours of instruction (lecture and lab).

Consult the ***Student Handbook*** for more details.

<http://www.hccs.edu/district/students/student-handbook/>

**Academic Honesty**

Scholastic dishonesty is treated with the utmost seriousness by the instructor and the College. Academic dishonesty includes, but it is not limited to the willful attempt to misrepresent one’s work, cheat, plagiarize, or impede other students’ scholastic progress. Consult the ***Student Handbook*** for more details.

**Students with Disabilities**

Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the **Disability Support Services Office** at his / her respective college at the beginning of each semester. Faculties are authorized to provide only the accommodations requested by the **Disability Support Services Office.**  For Central College, call 713 – 718 – 6164.

**Cell Phones**

All cell phones must be muted, set to vibrate, or turned off during class. Cell phone activity during class is deemed disruptive to the academic process and will not be tolerated. If you need to make or receive an emergency call, please leave the classroom. Portable music players are also not allowed, as they are unsafe due to hanging wires and issues of distraction.

**Calculators**

Calculators are a required part of the student's tool kit. They will be used both in the classroom and on the shop floor. Cell phones are not calculators, and are not allowed to be used for that purpose during tests, or exams.

**Student ID**

Students are required to obtain a Student ID. For additional information, consult the ***Student Handbook***.

**Parking Rules and Regulations**

Students are required to follow HCC’s regulations regarding parking and permits.

**Dress Code**

Students must dress for work in an industrial setting. Students must dress in a way that clothing and accessories do not compromise their safety, and the safety of others.

**“Steel toe” safety shoes are required** in all laboratories. Absolutely no sandals or other footwear that exposes the feet will be allowed.

**Safety glasses are required** and must be ANSI Z87.1-2003 approved. Prescription glasses must be ANSI Z87 approved and include side shields.

**Long pants are required**, shorts are not allowed. Shirts with baggy sleeves and baggy pants are not allowed as they are considered a snagging hazard.

Students who fail to comply with the dress codes will not be allowed to work in the lab, and will be marked absent for the lab portion of the day.

**Classroom & Laboratory Conduct**

Proper behavior is expected in all classes and laboratories. Foul language and horseplay are not allowed. Making or receiving cell phone calls during class is not allowed. Sleeping in class is not allowed.

**Course Withdrawal**

It is the responsibility of the student to officially withdraw from a course before the official withdrawal deadline. A student who does not withdraw from a course by the deadline will receive an “F” as the final grade. Also note that under Section 51.907 of the Texas Education Code, an institution of higher education may not allow a student to drop more than six courses.

*The instructor reserves the right to make any changes in the syllabus if the circumstances require it.*

**How to access your MindTap course**

**MCHN 1308 - Spring 2016**

**Instructor  :**  Shawn   
**Start Date  :**  01/19/2016

**What is MindTap?**

MindTap empowers you to produce your best work – consistently.

MindTap is designed to help you master the material. Interactive videos, animations, and activities create a learning path designed by your instructor to guide you through the course and focus on what's important. Get started today!

**Registration**

1. Connect to <http://login.cengagebrain.com/course/MTPNHKJPZV13>
2. Follow the prompts to register your MindTap course.

**Payment**

After registering for your course, you will need to pay for access using one of the options below:

**Online:** You can pay online using a credit or debit card, or PayPal.

**Bookstore:** You may be able to purchase access to MindTap at your bookstore. Check with the bookstore to find out what they offer for your course.

**Free Trial:** If you are unable to pay at the start of the semester you may choose to access MindTap during your free trial. After the free trial ends you will be required to pay for access.

Please note: At the end of the free trial period, your course access will be suspended until your payment has been made. All your scores and course activity will be saved and will be available to you after you pay for access.

If you already registered an access code or bought MindTap online, the course key to register for this course is: **MTPN-HKJP-ZV13**

HCC is committed to provide a learning and working environment that is free from discrimination on the basis of sex which includes all forms of sexual misconduct. Title IX of the Education Amendments of 1972 requires that when a complaint is filed, a prompt and thorough investigation is initiated. Complaints may be filed with the HCC Title IX Coordinator available at 713 718-8271 or email at oie@hccs.edu.