



Advanced Manufacturing Center of Excellence Southwest Campus

MCHN 1313 – Basic Mill

CRN 11728– Spring 2019

Central Campus - Room 119 | 6:00PM - 8:50PM | TUE/THU
3 credit hours (1 Lecture, 5 Lab)/ 96 hours per semester/ 16 weeks

INSTRUCTOR:

Shawn Trumbo

CONTACT INFORMATION:

Office Hrs. TBD

Houston Community College, Southwest
Campus Stafford Workforce Building

13622 Stafford Rd
RM – S102.1
Stafford, TX 77477

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COURSE LEVEL: Introductory

Course Description:

An introduction to the milling machine, machine nomenclature, basic machine operations and procedures, safety, machine mathematics, and theory.

PREREQUISITE:

MCHN 1338 (Basic Machine Shop)

MCHN 1343 (Machine Shop Mathematics)

MCHN 1302 (Print Reading)

Course Student Learning Outcomes:

Upon successful completion, you will be able to:

1. Identify the use and application of mill work holding devices.
2. Identify the use and application of various mill tools and tool holding devices.
3. Perform mathematical calculations common to milling in a manufacturing environment.



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4. Describe and apply the proper mill setup and safety procedures.
5. Create parts to the given specifications using information provided on the blueprints.

Learning Objectives:

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

1. Explain the differences between various work holding devices for the mill.
2. Explain the functions and applications of various work holding devices for the mill.
3. Explain the functions and applications of various mill tools.
4. Explain the differences between various tool holding devices for the mill.
5. Explain the functions and applications of various tool holding devices for the mill.
6. Calculate the proper spindle speeds (RPM).
7. Calculate the proper feed rates.
8. Demonstrate an understanding of fractional and decimal math and conversions between fractions and decimals.
9. Demonstrate the ability to solve right triangles using sine, cosine, and tangent trigonometric functions.
10. Apply the proper techniques to align parts and machinery.
11. Show an understanding of nomenclature of machines.
12. Relate and apply general lathe safety.
13. Ability to produce mill 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 milling machine 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 milling machine, 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 mill. To complete and pass this course you will be required to successfully complete the following on time:



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All in class projects.
 The Midterm Exam.
 The Final Exam.
 Online Quizzes and assignments as required.

Assessments:

Labs	= 50%	
Assignments	= 10%	
Midterm Exam	= 15%	
Final Exam	= 15%	
Instructor Discretion	= 10%	(Attendance, Attitude, Class Participation, etc.)

16 Week Calendar

<u>Week</u>	<u>Dates</u>	<u>Holiday</u>	<u>Academic</u>	<u>Chapter/Part</u>
1	1/13-1/19		1/14 - Classes Begin	
2	1/20-1/26	1/21 MLK Jr		
3	1/27-2/2			
4	2/3-2/9			
5	2/10-2/16			
6	2/17-2/23	2/18 - Presidents Day		
7	2/24-3/2			
8	3/3-3/9		Mid-Term	Mid-Term Exam
9	3/10-3/16	3/11-3/17 – Spring Break		
10	3/17-3/23			
11	3/24-3/30	3/19-3/21 – Spring Holiday		
12	3/31-4/6			
13	4/7-4/13			
14	4/14-4/20			
15	4/21-4/27			
16	4/28-5/4			
17	5/5-5/11		Finals Week	Final Exam

Grades will be available by: 5/18/2019



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Instructional Materials

A Basic Tool Kit is available from the school bookstore.

(or)

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

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

ISBN 13: 978-1285444543

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:

COURSE POLICIES

Attendance & Academic Honesty

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

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



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

Parking Rules and Regulations:

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

Dress Code:

Students must dress appropriately 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.



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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.

Title IX:

Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status-in educational programs and activities. If you require an accommodation due to pregnancy, please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to:

*David Cross
Director EEO/Compliance
Office of Institutional Equity & Diversity
3100 Main
(713) 718-8271
Houston, TX 77266-7517 or Houston, TX 77266-7517 or Institutional.Equity@hccs.edu*

Campus Carry:

At HCC, the safety of our students, staff, and faculty is our first priority. As of August 1, 2017, Houston Community College is subject to the Campus Carry Law (SB11 2015). For more information, visit the HCC Campus Carry web page at <http://www.hccs.edu/district/departments/police/campus-carry/>.