



## Advanced Manufacturing Center of Excellence Southwest Campus

---

### **MCHN 1313 – Basic Mill**

#### **CRN 10953– Spring 2017**

Central Campus - Room JBW 119 | 5:00PM - 9:00PM | TUE/THU  
3 credit hours (1 Lecture, 7 Lab)/ 128 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

[shawn.trumbo@hccs.edu](mailto:shawn.trumbo@hccs.edu)

Office Phone: 713-718-7874

### **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)

**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 mill work holding devices.
2. Identify use and application of various mill tools and tool holding devices.



## Advanced Manufacturing Center of Excellence Southwest Campus

---

3. Perform mathematical calculations common to milling in a manufacturing environment.
4. Describe and apply proper mill 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. Explain Differences between various work holding devices for the mill.
2. Explain functions and applications of various work holding devices for the mill.
3. Explain functions and applications of various mill tools.
4. Explain differences between various tool holding devices for the mill.
5. Explain functions and applications of various tool holding devices for the mill.
6. Calculate spindle proper speeds.
7. Calculate proper feed rates.
8. Demonstrate understanding of fractional and decimal math and conversions between fractions and decimals.
9. Demonstrate ability to solve right triangles using sine, cosine, and tangent trigonometric functions.
10. Apply proper technics to align parts and machinery.
11. Relate 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:



**Advanced Manufacturing Center of Excellence  
Southwest Campus**

---

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

**Assessments:**

Assignments and Projects	= 40%	
Midterm Exam	= 25%	
Final Exam	= 25%	
Instructor Discretion	= 10%	(Attendance, Attitude, Class Participation, etc.)
<b>Final Grade</b>	<b>= 100%</b>	

**16 Week Calendar**

<b>Week</b>	<b>Dates</b>	<b>Holiday</b>	<b>Academic</b>	<b>Chapter/Part</b>
1	1/15-1/21	1/16 – Dr. MLK Jr. Day	1/17 - Classes Begin	
2	1/22-1/28			
3	1/29-2/4		2/1 – ODR 2/2 – LD 70%	
4	2/5-2/11		2/8 – LD 25%	
5	2/12-2/18			
6	2/19-2/25	2/20 – Presidents Day		
7	2/26-3/4			
8	3/5-3/11			
9	3/12-3/18	3/13-3/19 – Spring Break		
10	3/19-3/25			
11	3/26-4/1			
12	4/2-4/8		4/3 - LDW	
13	4/9-4/15			
14	4/16-4/22	4/14-4/16 – Spring Holiday		
15	4/23-4/29			
16	4/30-5/6		5/6 – LDI	
17	5/7-5/13		Finals Week	Final Exam

**Grades will be available by:**



## Advanced Manufacturing Center of Excellence Southwest Campus

---

### Instructional Materials

TOOLS: (must be usable) all prices are approximate.

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. Radius gages set. \$20
11. Edge Finder \$6 @
12. Pocket Scribe \$3 @
13. Dead Blow Hammer \$10
14. Allen Wrench Sets, Metric and SAE. \$26
15. 10 inch Adjustable Wrench. \$10
16. Combination Slip Joint Pliers \$10
17. Ball Peen Hammer \$10
18. Assorted screwdrivers \$10
19. Prick and center punches \$6
20. 1,2,3 block set \$12
21. Mighty Mag indicator holder \$10

**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.



## Advanced Manufacturing Center of Excellence Southwest Campus

---

### 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:**

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



## Advanced Manufacturing Center of Excellence Southwest Campus

---

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. <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 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.



## Advanced Manufacturing Center of Excellence Southwest Campus

---

**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. 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.*