

**Odessa College  
Machine Technology Department**

**Course Syllabus**

**Course Number: MCHN 1320**  
**Course Title: Precision Tools and Measurement**  
**Credit Hours: 3**  
**Prerequisites: None**  
**Corequisites: None**

**Instructor Information**

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**Catalog Description:** MCHN 1320 Precision Tools and Measurement (CIP 48.0501) (2-4) 3 hours  
An introduction to the modern science of dimensional metrology. Emphasis on the identification, selection, and application of various types of precision instruments associated with the machining trade. Practice of basic layout and piece part measurements while using standard measuring tools. The process of reverse engineering using precision measuring tools will be employed to make drawings of mechanical parts. Lab fee required. (SCANS 1, 2, 6, 8) Prerequisite: None

**Textbook**

Machine Tool Practices 9<sup>th</sup> Edition by Richard R. Kibbe, Roland O. Meyer, John E. Neely, Warren T. White. Copyright 2006 Pearson Prentice Hall

**Supplies**

Safety Glasses, textbook, calculator, 6” steel rule, pencil and notebook

**Special Needs**

Odessa College complies with Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. If you have any special needs or issues pertaining to your access to and participation in this or any other class at Odessa College, please feel free to contact me to discuss your concerns. You may also call the Office of Disability services at 432-335-6861 to request assistance and accommodations.

## **Learning Resource Center (Library)**

The Library, known as the [Learning Resources Center](#), provides research assistance via the [LRC's catalog](#) (print books, videos, e-books) and [databases](#) (journal and magazine articles). [Research guides](#) covering specific subject areas, [tutorials](#), and the "Ask a Librarian " service provide additional help.

## **Student E-mail**

Please access your [Odessa College Student E-mail](#), by following the link to either set up or update your account: <http://www.odessa.edu/gmail/>. **All assignments or correspondence will be submitted using your Odessa College email.**

## **Student Portal**

Please access your [Odessa College Student E-mail](#), by following the link to either set up or update your account: <http://www.odessa.edu/gmail/>. **All assignments or correspondence will be submitted using your Odessa College email.**

## **Technical Support**

For Blackboard username and password help and for help accessing your online course availability and student email account contact the Student Success Center at 432-335-6878 or online at [https://www.odessa.edu/dept/ssc/helpdesk\\_form.htm](https://www.odessa.edu/dept/ssc/helpdesk_form.htm).

## **Important School Policies**

For information regarding student support services, academic dishonesty, disciplinary actions, special accommodations, or student's and instructors' right to academic freedom can be found in the [Odessa College Student Handbook](#).

## **Learning Outcomes**

Select and use the appropriate precision measuring tools to reverse engineer a mechanical part. Prepare a detailed drawing showing the dimensions of the part from measurements taken. Write a work process procedure needed to manufacture the part.

## **Course Requirements**

Students will be expected to be on time with the supplies listed above for every class. Time management is important. Lab exercises and projects are to be completed in class. Tests and final exam are to be completed.

## Method of Evaluation

The evaluation will be determined by lab projects, homework, tests, and a final exam.

Grade Scale		Weight	
Points	Grade	Lab	25%
90-100	A	Homework	25%
80-89	B	Tests	25%
70-79	C	Final	25%
65-69	D		
0-64	F		

## Attendance Policy

Attendance is expected and necessary. Lectures and demonstrations as well as lab availability is important to your success in this class.

## Academic Ethics

All lab work and testing is to be your own efforts. Any unethical behavior will result in action taken in accordance with Odessa College policies.

## Course Competencies

1. To demonstrate competency in machine shop safety; the student should be able to:
  - A. Identify and properly use personal protection equipment.
  - B. Recognize and report machine shop hazards.
  - C. Know and apply machine tool safety rules.
  - D. Know and apply hand tool safety rules.
2. To demonstrate competency in print reading, the use of precision measuring tools, and basic shop math; the student should be able to:
  - A. Interpret and understand blueprints and their symbols.
  - B. Properly use precision measuring tools.
  - C. Perform calculations for shop problems, speeds and feeds, and threading.
3. To demonstrate competency in reverse engineering a part; the student should be able to:
  - A. Select and properly use the appropriate measuring tools.
  - B. Perform precision measurement of a part.
  - C. Make a detailed drawing of the part dimensions.
  - D. Write a work process for manufacturing the part.

