



RANGER COLLEGE  
STEPHENVILLE, TEXAS

---

COURSE SYLLABUS

**Print Reading for Machining Trades**

**MCHN 1302**

**3 credit hours**

**Fall 2019**

**INSTRUCTOR:**

**Jeff Snow**

**INSTRUCTOR:** Jeff Snow  
**EMAIL:** jsnow@rangercollege.edu  
**OFFICE:** RCEC ATC  
**PHONE:** (254) 968-1075  
**HOURS:** [8-5 M-R]

### **I. Texas Core Curriculum Statement of Purpose**

Through the Texas Core Curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world, develop principles of personal and social responsibility for living in a diverse world, and advance intellectual and practical skills that are essential for all learning.

### **II. Course Description**

A study of blueprints for machining trades with emphasis on machine drawings.

### **III. Required Background or Prerequisite**

None

### **IV. Required Textbook and Course Materials**

<b>Item</b>	<b>Title</b>	<b>Author</b>	<b>Publisher</b>	<b>Edition</b>	<b>ISBN</b>
I	Tooling U	Tolling U	Tooling U/SME	VER. 1.0/2.0	

### **V. Course Purpose**

The main goal of this course is to provide a deep understanding of the fundamental machining skills needed for career success in a manufacturing environment, and an in-depth knowledge as a base for strong foundational skills without becoming difficult to comprehend or retain.

### **VI. Learning Outcomes**

Identify the elements of machine drawings; interpret dimensions, tolerances, and geometric aspects of blueprints; and explain Geometric Dimensioning and Tolerance (GD&T) symbols and their meanings.

### **VII. Core Objectives**

This course meets the following of the six Core Objectives established by Texas:

[FOR CORE CLASSES: Check all of the **required** core objectives for the course, as shown on the Table of Foundational Component Areas (provided separately). If you choose to check any **optional** core objectives, be sure to justify this elsewhere in the syllabus by indicating the nature of the coursework that addresses these optional objectives.]

FOR ELECTIVE CLASSES]

- Critical Thinking Skills (CT)** – Creative thinking, innovation, inquiry, and analysis; evaluation and synthesis of information
- Communication Skills (COM)** – effective development, interpretation and expression of ideas through written, oral, and visual communication
- Empirical and Quantitative Skills (EQS)** – The manipulation and analysis of numerical data or observable facts resulting in informed conclusions
- Teamwork (TW)** – The ability to consider different points of view and to work effectively with others to support a shared purpose or goal
- Social Responsibility (SR)** – Intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities
- Personal Responsibility (PR)** – The ability to connect choices, actions, and consequences to ethical decision-making

### VIII. Methods of Instruction

Will include online lectures (tooling-u), assigned readings, discussions, demonstrations, and hands on projects, videos, electronic documents, PowerPoints, and more.

### IX. Methods of Assessment

**Labs: (40%) (CT, EQS, PR)** Grades will consist of all Lab assignments (10).

**Test: (40%) (CT, EQS, PR)** Include all test grades, including midterm test (14)

**Professionalism: (10%) (CT, COM, PR, TW)** Being on time, prepared to work. Great attitude. NO foul language, No use of cell phones. Student following directions, leaving the work areas clean and organized.

**Final (10%)** Will consist of one final comprehensive and practical test.

Grading scale: A = 90-100%    B = 80-89    C = 70-79    D = 60-69    F = Below 60

## X. Course/Classroom Policies

The following rules and guidelines about classroom behavior are to be memorized, internalized, and strictly adhered to. Failure to do so will negatively impact your experience of this class, not to mention your grade.

### 1. Attendance

**WARNING—READ CAREFULLY!** If you accumulate unexcused absences exceeding 10% of the total sixty four clock-hours required for this course as set forth by the Texas Higher Education Coordinating Board, you will be dropped from class. You will receive the grade of **W**. If the final semester withdrawal date has passed, you will receive the grade of **F**. (This means you will be denying yourself credit for the course if you miss any combination of 6.4 hours of class and/or lab times.)

Excessive absences result in (1) your failure to progress towards the objectives of the course, (2) unfair demands on your instructor's time by taking him/her away from responsible students in order to catch you up on missed assignments, and most important (3) you become an increased safety risk due to your diminished familiarity with hazardous equipment and safety protocols.

#### **Lateness/Tardiness**

Any student coming to class or laboratory more than **three** minutes from the scheduled start time will be counted as absent

#### **RC Policy on Attendance:**

Regular and punctual attendance in all classes and labs is required of all students.

Unexcused absences are counted from the first day of class as listed in the college calendar, regardless of the date of the student's registration

The only excused absence is an authorized college activity. All work and/or assignments missed because of an excused absence must be completed within one week or the excused absence will be counted as unexcused. An excused absence during the one-week period does not extend the deadline for the completion of assignments

Classes and laboratories starts at the scheduled time, you have three additional minutes to be in your seat, prepared for class. If you show up to class or lab more than three minutes late you will receive an unexcused absence for the day! Any student leaving class or lab early will need to visit with the instructor before returning to class or lab. If the early departure is not justifiable, the student may be marked absent for the class or lab for that instructional time.

### 2. Class Participation

Each student is encouraged to participate in classroom discussions and in lab. You are here to learn and the best way to learn is by hands-on and participation. Always remember: safety comes first.

### 3. Missed Exams/Assignments/Make-up Policy

All assignments and missed exam (s) are to be made-up within one week of the assignment or exam. Please get with the Instructor to set-up a time to make it up.

### 4. Lab safety/health

Safety lectures are done every day, before any equipment is used. **Safety is the #1 factor when working at home, school or industry.**

### Safety Regulations

Machining can become very dangerous—even fatal—if you are careless and neglect safety precautions. Most accidents occur when people get in a hurry, so learn to pace yourself and move cautiously and deliberately. The College endeavors to provide you with proper training and a safe environment, but you must also do your part by abiding by the following rules. *If you persistently violate these rules, you will be considered a safety risk and will be withdrawn from class.*

### 5. Other Course Policies

1. *No eating or drinking in classrooms or labs*
2. *Turn cell phones off, no iPods or other electronic devices*
3. *Do not use internet for any activity other than online tutorials.*
4. *Do not operate any equipment in the lab without the instructor being present.*
5. *Return to class promptly after breaks.*
6. *Respect other student's tools, equipment and personal space.*
7. *Return all tools to their proper place as soon as you are finished with them.*
8. *It is your responsibility to clean up any area or machine you use.*
9. *Assignments must include students name, assignment title and date.*
10. *It is a privilege (for those who have paid) to work in the lab areas, not a Right.*

Note: Scheduled assignments are subject to change without notice at the discretion of the Instructor.

## XI. Course Outline/Schedule

WEEK	LEC/LAB	TOPIC/ASSIGNMENT
1	<b>LEC:</b> Introduction, and review syllabus. Provides an overview of common features found on prints. Complete all test for Tooling-U lesson “ <b>Interpreting Blueprints 230</b> ” and interactive lab. <b>LAB:</b> # 1. Orthographic, Auxiliary, and Section views. Line variety in part views.	
2	<b>LEC:</b> Provides an understanding of blueprints and how to read them. Complete all test for Tooling-U lesson “ <b>Blueprint Reading 131</b> ” <b>LAB:</b> # 1. Continued, Orthographic, Auxiliary, and Section views. Line variety in part views and dimensions.	
3	<b>LEC:</b> Describe how to interpret the information presented on the print to create a part. Complete all test for Tooling-U lesson “ <b>Prints for Metal Cutting Operations 241</b> ”	

	<b>LAB:</b> # 2. Symbols, thread specs, holes counter bores, spot faces, countersinks.
4	<b>LEC:</b> Describe methods used for part tolerance and the impact on production and quality. Complete all test for Tooling-U lesson “ <b>Basics of Tolerance 121</b> ” <b>LAB:</b> # 3. Scale, tolerance, and title blocks
5	<b>LEC:</b> Describes the fundamental concepts of geometric dimensioning and tolerancing. Complete all test for Tooling-U lesson “ <b>Intro to GD&amp;T 200</b> ” and interactive lab. <b>LAB:</b> # 4 interpret GD&T symbols and feature control frame.
6	<b>LEC:</b> Provides a basic introduction to the symbols and vocabulary of GD&T. Complete all test for Tooling-U lesson “ <b>Introduction to GD&amp;T 301</b> ” <b>LAB:</b> # 4 continued and completed
7	<b>LEC:</b> Understand how to interpret a feature control frame for various form. Complete all test for Tooling-U lesson “ <b>GD&amp;T Applications 312</b> ” <b>LAB:</b> # 5 Profile, orientation, location, runout, flatness, parallelism, and perpendicularity.
8	<b>LEC:</b> Review for Midterm test (material covered in weeks 1-7) <b>LAB:</b> Midterm Test
9	<b>LEC:</b> Explains important rules and how features are specified in GD&T prints. Complete all test for Tooling-U lesson “ <b>Interpreting GD&amp;T 310</b> ” and interactive lab. <b>LAB:</b> # 6 Interpreting GD&T Prints
10	<b>LEC:</b> Provides an overview of the rules and concepts of geometric dimensioning and tolerancing. Complete all test for Tooling-U lesson “ <b>Major Rules of GD&amp;T 311</b> ” <b>LAB:</b> # 7 Apply guidelines to part features
11	<b>LEC:</b> An introduction to the purpose and main concepts of statistical process control. Complete all test for Tooling-U lesson “ <b>SPC Overview 211</b> ” <b>LAB:</b> # 8 Control charts and out of control signs.
12	<b>LEC:</b> An introduction to steel designations system particularly AISI-SAE and UNS methods. Complete all test for Tooling-U lesson “ <b>Classification of steel 201</b> ” <b>LAB:</b> # 9 identify steel, its properties, and machinability.
13	<b>LEC:</b> Define fastener threads and their characteristics. Complete all test for Tooling-U lesson “ <b>Intro to Fastener Threads 110</b> ” and interactive lab. <b>LAB:</b> # 10 Identify thread forms and standards.
14	<b>LEC:</b> Covers a variety of blueprint reading and measurement components. Complete all test for Tooling-U lesson “ <b>NIMS Core Skills 111</b> ” <b>LAB:</b> Review all lab work for all weeks.
15	<b>LEC:</b> Review for final test <b>LAB;</b> Final Test

## XII. Non-Discrimination Statement

Admissions, employment, and program policies of Ranger College are nondiscriminatory in regard to race, creed, color, sex, age, disability, and national origin.

[Insert Course Code] – [Insert semester]

### **XIII. ADA Statement**

Ranger College provides a variety of services for students with learning and/or physical disabilities. Students are responsible for making initial contact with the Ranger College Counselor, Gabe Lewis (glewis@rangercollege.edu). It is advisable to make this contact before or immediately after the semester begins.