



## Western Technical College

# 10420219 GD&T in Machining (CBE)

## Course Outcome Summary

### Course Information

<b>Description</b>	Requires the learner to recognize and interpret geometric dimensioning and tolerances (GD&T) symbols and apply the information to prints for manufacture of parts.
<b>Career Cluster</b>	Manufacturing
<b>Instructional Level</b>	One-Year Technical Diploma
<b>Total Credits</b>	1
<b>Total Hours</b>	36

### Textbooks

*Blueprint Reading for Machine Trades*. 7th Edition. Copyright 2012. Schultz, Russ. Publisher: Pearson. **ISBN-13:978-0-13-217220-2**. Required.

### Learner Supplies

Safety glasses with side eye protection that meet Z87 OSHA guidelines. **Vendor:** Campus Shop. Required.

Proper footwear - \$35.00-75.00. **Vendor:** To be discussed in class. Required.

Scientific calculator (recommend T1-36x Solar). **Vendor:** Campus Shop. Required.

Three-ring binder. **Vendor:** Campus Shop. Required.

Clipboard. **Vendor:** Campus Shop. Required.

Pens/Pencils/Black Sharpie Marker. **Vendor:** Campus Shop. Required.

Minimum 4GB USB Flash Drive. **Vendor:** Campus Shop. Required.

### Success Abilities

1. Cultivate Passion: Expand a Growth-Mindset
2. Live Responsibly: Foster Accountability
3. Refine Professionalism: Improve Critical Thinking

## Program Outcomes

1. Interpret industrial/engineering drawings.

## Course Competencies

### 1. Identify geometric dimensioning and tolerancing symbols.

#### Assessment Strategies

- 1.1. In written and applied assignments

#### Criteria

*You will know you are successful when*

- 1.1. you identify GD&T symbols and explain what they represent.
- 1.2. you correctly identify/interpret other ASME Y14.5M symbols and abbreviations.
- 1.3. you apply GD&T terminology according to industry standards.

#### Learning Objectives

- 1.a. Identify the ASME dimensioning and tolerancing standard.
- 1.b. Use GD&T terminology.
- 1.c. Identify form symbols
- 1.d. Identify profile symbols
- 1.e. Identify orientation symbols
- 1.f. Identify location symbols
- 1.g. Identify runout symbols
- 1.h. Identify modifiers
- 1.i. Identify datum reference letters
- 1.j. Identify other ASME Y14.5M symbols and abbreviations

### 2. Interpret feature control frames.

#### Assessment Strategies

- 2.1. In written and applied assignments

#### Criteria

*You will know you are successful when*

- 2.1. you label the contents of compartments in a feature control frame.
- 2.2. you interpret feature control frames in applications.
- 2.3. you describe the specified datum(s).
- 2.4. you interpret feature size/location variations for each modifier that may occur in a feature control frame.

#### Learning Objectives

- 2.a. Describe the function of a feature control frame
- 2.b. Explain the elements of feature control frames
- 2.c. Identify feature control frames on prints
- 2.d. Determine the placement of symbols and modifiers in feature control frames
- 2.e. Specify the order of precedence for datum references in feature control frames
- 2.f. Interpret feature control frames in print applications

### 3. Adapt geometric dimensioning and tolerancing principles to machine setup applications.

#### Assessment Strategies

- 3.1. In written and applied assignments

#### Criteria

*You will know you are successful when*

- 3.1. you revise non-GD&T print/s to GD&T standards.
- 3.2. you create machine setup/s based on GD&T print/s.
- 3.3. you create inspection plan/s for GD&T print/s.

#### Learning Objectives

- 3.a. Work in a team setting to make decisions
- 3.b. Revise non-GD&T prints to GD&T standards.
- 3.c. Analyze/create machining plans to achieve specified tolerances.
- 3.d. Analyze/create inspection plans for completed parts.