

## Course Objectives/Course Outline

### Spokane Community College

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**Course Title:** GD & T  
**Prefix and Course Number:** APM 201

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**Course Learning Outcomes:**

**By the end of this course, a student should:**

- Define and explain the purpose of geometric tolerancing.
- Interpret geometric tolerances and symbols on drawings, including form, orientation, location, profile, and runout tolerances.
- Describe and interpret the ASME Y14.5 – 2009 standard used for dimensioning and tolerancing.
- Demonstrate use of reference guides, standards books, and other resources to research information about geometric dimensioning and tolerancing.
- Interpret standard limits and fits between mating parts.
- Interpret datum feature and datum target symbols.
- Interpret material condition, material boundary, and other modifying symbols.
- Interpret surface geometric controls and axis geometric controls.
- Determine geometric tolerances for produced sizes at RFS, MMC, and LMC, as well as bonus tolerancing.
- Apply geometric dimensioning and tolerancing information to determine proper setup, manufacturing methods, and inspection of a part.

**Course Outline:**

- I. **Week One**
  - A. Introduction to Dimensioning and Tolerancing
  - B. Introduction to GD&T Symbols
- II. **Week Two**
  - A. GD&T Symbols & Terminology
  - B. Geometric Tolerancing Fundamentals
- III. **Week Three**
  - A. Datums, Reference Frames, and Feature Simulators
- IV. **Week Four**
  - A. Material Condition and Material Boundary
  - B. Straightness, flatness, circularity, cylindricity
- V. **Week Five**
  - A. Orientation Tolerances
  - B. Perpendicularity, angularity, parallelism
- VI. **Week Six**
  - A. Midterm Exam
- VII. **Week Seven**
  - A. Position Tolerances, Part 1

B. Position introduction

**VIII. Week Eight**

A. Position Tolerances, Part 2

B. Comparing and Inspecting Positional Tolerances

**IX. Week Nine**

A. Concentricity & Symmetry Tolerances

B. Fasteners and Virtual Condition

**X. Week Ten**

A. Profile Tolerances

B. Profile of a Line

C. Composite Profile Tolerances

**XI. Week Eleven**

A. Runout – Circular and Total

B. Review for Final Exam

**XII. Week Twelve**

A. Final Exam