

**EL505**  
**Basic Geometric Dimensioning and Tolerancing Online Course Y14.5**

**Module 1**

- Introduction
  - Y14.5 2009 Dimensioning and Tolerancing standard
  - Part production
  - Design
  - Tooling / production
  - Inspection
  - Machine equipment and measuring instruments
  - GDT (Geometric Dimensioning and Tolerancing) chart

**Module 2**

- Datums
  - Datum brief
  - Datum features
  - Datum relationships
  - Datum combinations
  - Irregular size datum features
  - Customized datum reference frame

**Module 3**

- Flatness
  - Flatness Brief
  - Surface Flatness
    - Design
    - Tooling / production
    - Inspection
  - Size Feature Flatness
    - Design
    - Tooling / production
    - Inspection

**Module 4**

- Straightness
  - Straightness Brief
  - Line Element Straightness
    - Design
    - Tooling / production
    - Inspection
  - Size Feature Straightness
    - Design
    - Tooling / production
    - Inspection

### Module 5

- Circularity/ Cylindricity
  - Circularity / Cylindricity brief
    - Design
    - Tooling / production
    - Inspection

### Module 6

- Orientation
  - Orientation Brief
  - Line Element Orientation
    - Design
    - Tooling / production
    - Inspection
  - Surface Orientation
    - Design
    - Tooling / production
    - Inspection
  - Size Feature Orientation
    - Design
    - Tooling / production
    - Inspection

### Module 7

- Runout
  - Runout Brief
    - Design
    - Tooling / production
    - Inspection

### Module 8

- Profile
  - Profile Brief
    - Design
    - Tooling / production
    - Inspection
  - Conical Surfaces

### Module 9

- Position Tolerance Theory
  - Position theory
  - Coordinate dimensioning
  - The 57% myth
  - Position dimensioning

### Module 10

- Position: General
  - Position brief
    - Design
    - Tooling / production
    - Inspection

### Module 11

- Coaxial Controls
  - Coaxial Controls
    - Design
    - Tooling / production
    - Inspection

### Module 12

- Coaxial Controls
  - Noncircular Feature Control
    - Design
    - Tooling / production
    - Inspection