Course Title: Geometric Dimensioning and Tolerancing

Course Number: MFG 160

Credits: 3

Course Description: Geometric Dimensioning and Tolerancing (GD&T) is a language used on mechanical engineering drawings composed of symbols used to communicate accurately and efficiently geometry requirements for associated features on components and assemblies. GD&T is, and has been, successfully used for many years in the automotive, aerospace, electronics, commercial design and manufacturing industry. In today's modern and technically advanced design, engineering and manufacturing world, effective and accurate communication is required to ensure successful end products. Topics include the following: introduction to symbols and terms, limits to size, data reference frame, form tolerance, geometric system functionality, orientation tolerances, position tolerances, profile tolerances, coaxial tolerances, tolerance analysis, and applications.

Course Objectives: At the conclusion of this course students will be able to…

- **Demonstrate an understanding of all the symbols used in GDT.**
- **Demonstrate an ability to determine the acceptability of manufactured parts based on GDT requirements.**
- **Demonstrate an ability to use GDT symbols on an engineering drawing to completely specify the form and limits of variation of features.**
- **Demonstrate an ability to use GDT symbols to specify the form and limits of variation of mating parts to insure that they will assemble properly**
- **Demonstrate an understanding of datums and datum reference frames.**
- **Demonstrate an understanding of virtual conditions and their application to tolerancing mating parts.**

Course Content: Students will learn to work with…

- **Conventional dimensioning and tolerancing**
- **Standard symbols of GDT**
- **Datums**
- **Material condition**
- **Tolerances of Form and Profile**
- **Tolerances of Orientation and Run-out**
- **Tolerances of Location**