University of Arkansas - Fort Smith
5210 Grand Avenue
P. O. Box 3649
Fort Smith, AR 72913-3649
479-788-7000

General Syllabus

MACH 1414 Geometric Dimensions and Tolerances

Credit Hours: 4 **Lecture Hours:** 2 **Laboratory or other types of Hours:** 4

Prerequisite(s): None

Effective Catalog: 2021-2022

I. Course Information

A. Catalog Description

Introduction to blueprint reading, measuring tools, gaging and parts inspection, measurement techniques, geometric dimension and tolerance symbols, call-outs, and control frames. Presents calibration and measurement system analysis.

II. Student Learning Outcomes

A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Read and interpret engineering drawings.
2. Demonstrate geometric dimensioning and tolerance.
3. Use micrometers, dial indicators and dial calipers to collect accurate measurements.
4. Gauge and inspect parts and use fundamental and linear tools to measure accurately.

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Analytical Skills
Critical Thinking Skills: Students will read and interpret blue prints and adjust machines as necessary.

Communication Skills (written and oral)

Students will proficiently and accurately interpret blueprints and mechanical data sheets and will effectively communicate to resolve issues or concerns.

Ethical Decision Making
Students will identify implications of producing and allowing a detective component to be used.

III. Major Course Topics

A. Engineering drawings
B. Blueprint reading
C. Geometric Dimensions and Tolerancing symbols
D. Measuring tools
E. Form and orientation tolerances
F. Profile, runout, and location tolerances