

Program Description

This program is designed to familiarize students with the standards and practices of metrology used in the aerospace manufacturing industries, which includes hands-on training and familiarization with metrology tooling, equipment, and systems.

Staff

Please dial (661) 722-6300, then the 4 digit extension.

Division:

Greg Bormann, Dean	x.6327
Mari-Ali Baiza, Administrative Assistant	x.6327
Leyla Recinos, Clerical Assistant III	x.6327
Dr. Maria Clinton, Department Chair	x.6577

Faculty:

Dr. Maria Clinton	x.6577
Jack B Halliday	x.6289

Instructional Assistant:

Tiffani Zinner	x.6049
Susanna Otis	x.6872

Career Options

Quality Inspector	Manufacturing Technician Production Technician
Quality Control Inspector	
Quality Control Technician	

(Careers may require education beyond the two-year college level.)

Program Learning Outcomes

Metrology Sciences for Aerospace Manufacturing

1. Analyze and evaluate critical aspects of metrology as it pertains to the aerospace manufacturing industry, which includes aspects related to safe work practices, standards and tolerances, standard shop practices, proper use of tools, equipment, operating systems, and personal protective equipment.
2. Analyze, evaluate, and troubleshoot, aerospace manufacturing defects, flaws, and out of tolerance as it relates to the proper methods of setting up metrology systems for inspection, detection, and correction.

Certificate Program

Metrology Sciences for Aerospace Manufacturing

This program is designed to familiarize students with the standards and practices of metrology used in the aerospace manufacturing industries, which includes hands-on training and familiarization with metrology tooling, equipment, and systems. Jobs associated with this certificate are Tool & Die Maker, Machinist, Metrology Tech, Dimension Control Tech, Tool Design, and Tool Engineer. Students must receive a minimum grade of "C" or better in all required core courses and the specific courses listed as program electives to qualify for the certificate. (AVC)

Required Courses (10 units):	units
MSAM 110, Fundamentals of Dimensional Metrology	4
MSAM 115, Metrology Systems and Application	6
Total	10

Metrology Sciences for Aerospace Manufacturing Courses

MSAM 110 FUNDAMENTALS OF DIMENSIONAL METROLOGY

4 units

4 hours weekly

This course is designed to provide students with the basic knowledge of metrology as utilized in the aerospace maintenance and manufacturing processes. The course explores basic measurement concepts, precision measurement its relationship to geometric tolerances, critical dimensions, measurement standards, managing various metrology systems, applying proper technique to produce good measurements, and interpretation of key units of measure and measurement instruments. Use of basic measuring tools and traditional analog measuring systems. (AVC)

MSAM 115 METROLOGY SYSTEMS AND APPLICATION

6 units

8 weekly hours [5 lecture, 3 lab]

Prerequisite: Completion of MSAM110.

This course is designed to provide students with knowledge in the use of advanced metrology non-contact measurement systems, hardware, and co-ordinate measurement system software. Students in this course will learn fundamental theories and best practices, interpret, and respond to measurement outcomes and uncertainty. The focus of this course is to provide an operational understanding of advanced co-ordinate measurement systems (CMM), Portable Co-ordinate Measuring Machines (PMM), and advanced metrology software control systems. Measurement of free form surfaces and the application of Geometric Dimensioning & Tolerancing (GD&T) standards and practices will be performed. This course covers precision measurement, its relationship to geometric tolerances, critical dimensions, and calibration. Statistical process control and quality assurance using manual and automated gauges, checking fixtures, non-destructive testing, and coordinate measuring systems. Use of vision, laser, and other non-contact measuring systems. (AVC)