

# AUTOMATED MANUFACTURING ENGINEERING TECHNOLOGY (AMET)

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## **AMET 100 Basic Principles of Manufacturing Management (4 Units)**

A survey of basic concepts of management and their interrelationships to a manufacturing environment. Includes production control, quality control, work measurement, and employee motivation. (Formerly 2880:100)

## **AMET 101 Introduction to Advanced Manufacturing (2 Units)**

This course defines advanced manufacturing and provides students with an overview of the knowledge, skills, and abilities necessary to succeed in an advanced manufacturing career. (Formerly 2880:101)

## **AMET 110 Manufacturing Processes (3 Units)**

Study of the machines, methods, and processes used in manufacturing. (Formerly 2880:110)

## **AMET 130 Work Measurement & Cost Estimating (3 Units)**

Prerequisite: MATH 152, MATH 153, MATH 143, MATH 144, or MATH 145 or higher math or placement. Time and motion study. Development of accurate work methods and production standards, and their relationship to manufacturing cost estimates. (Formerly 2880:130)

## **AMET 140 Computer Aided Drawing (3 Units)**

Drafting procedures and techniques used for creating drawings using AutoCAD software. Topics include basic components, drawing, editing, dimensioning, layers, text, blocks, plotting, and hatch. (Formerly 2880:140)

## **AMET 151 Industrial Safety & Environmental Protection (2 Units)**

A contemporary overview of the science and management of occupational health and safety programs, policies, and procedures in an industrial and business type environment. (Formerly 2880:151)

## **AMET 201 Robotics & Automated Manufacturing (3 Units)**

Prerequisite: AMET 101. Study of manufacturing automation and the computer-based products and processes available for this task. Robots, machine controllers, and machine/process interfaces are investigated. (Formerly 2880:201)

## **AMET 211 Manufacturing Operations (3 Units)**

A study of all functions involved in a manufacturing production system. Areas covered include product design, forecasting, capacity planning, scheduling, materials management, and project management. (Formerly 2880:211)

## **AMET 225 Computer Aided Tool Design (3 Units)**

Prerequisite: AMET 140 or MCET 121. The study of standard tool design practices and procedures utilizing industry-standard computer-aided design software. (Formerly 2880:225)

## **AMET 230 3-D Modeling & Design (3 Units)**

Prerequisite: AMET 140 or MCET 121. This course covers advanced topics in the use of AutoCAD. These topics include 3-D modeling. Laboratory. (Formerly 2880:230)

## **AMET 232 Labor Management Relations (3 Units)**

Prerequisite: AMET 100. Study of historical background of labor movement, management viewpoints, legal framework for modern labor organizations and collective bargaining process. (Formerly 2880:232)

## **AMET 241 Introduction to Quality Assurance (3 Units)**

Prerequisite: MATH 152, MATH 153, MATH 143, MATH 144, or MATH 145 or higher math or placement. Theory and practice of inspection and sampling techniques for measurement of quality, QC charts, sampling plans, mill specs, checking machine capabilities, and setting tolerances. (Formerly 2880:241)

## **AMET 248 Introduction to CNC and Additive Manufacturing (3 Units)**

Prerequisites: [MATH 153, MATH 143, MATH 144, or MATH 145 or higher math or placement] and MCET 121 or permission. This course provides an overview of CNC manual programming utilizing the G-code programming language along with an introduction to additive manufacturing processes. (Formerly 2880:248)

## **AMET 290 Special Topics: Industrial Technology (1-2 Units)**

Prerequisite: Permission. Selected topics or subject areas of interest in industrial technology. (May be repeated for a total of four credits) (Formerly 2880:290)

## **AMET 301 Computer Control of Automated Systems (3 Units)**

The development of computer based systems and computer programs using robotics and machine controllers as the solutions for automated manufacturing problems. (Formerly 2870:301)

## **AMET 311 Facilities Planning (3 Units)**

Prerequisite: MCET:121 or permission. An application based study of facilities analysis, design and layout utilizing software based solutions. (Formerly 2870:311)

## **AMET 332 Management of Technology Based Operations (3 Units)**

A study of the techniques and knowledge necessary to effectively manage technical personnel. (Formerly 2870:332)

## **AMET 348 CNC Programming I (3 Units)**

Prerequisites: AMET 248, MATH 149, or MATH 154 or higher math or placement. Introduction to CAM (Computer Aided Manufacturing) based CNC (Computer Numerical Control) programming; development of milling, drilling, and turning programs. (Formerly 2870:348)

## **AMET 441 Advanced Quality Practices (3 Units)**

Prerequisite: AMET 241 or permission. Specific quality assurance procedures will be developed conceptually, proven mathematically, and then tested in lab exercises. Industry accepted SQC software will be used. (Formerly 2870:441)

## **AMET 448 CNC Programming II (3 Units)**

Prerequisite: AMET 348. The study of advanced CNC programming techniques utilizing an industry standard CAM programming software package and CNC program verification software. (Formerly 2870:448)

## **AMET 470 Simulation of Manufacturing Systems (3 Units)**

Prerequisite: AMET 211. Computer simulation solutions applied to the traditional manufacturing problems of equipment justification, production line balancing, and capacity planning. (Formerly 2870:470)

## **AMET 480 Automated Production (3 Units)**

Prerequisites: MCET 405, AMET 448, and AMET 201. A study of the automated production system. The various systems studied thus far, CNC, robotics, automated machines via PLCs, and facilities design, are integrated and analyzed from a production standpoint. (Formerly 2870:480)

**AMET 485 SME Manufacturing Technologist Certification Preparation (2 Units)**

Prerequisites: AMET 441 and MCET 261. Pre/Corequisite: AMET 480.

Provides a review for the SME Manufacturing Technologist Certification Exam. Topics include a review of materials and manufacturing processes, automated systems and control, quality and process control methods, manufacturing management, and other topics appearing on the exam. (Formerly 2870:485)

**AMET 490 Manufacturing Project (2 Units)**

Prerequisite: Senior status. Advanced CAD/CAM topics are presented. A comprehensive project is undertaken. (Formerly 2870:490)

**AMET 495 Individual Investigation in Manufacturing Engineering Technology (2 Units)**

Selected topic(s) that provide for specific individual study in the area of manufacturing engineering technology under the direct supervision of a faculty member. (Formerly 2870:495)

**AMET 496 Special Topics in Manufacturing Engineering Technology (1-3 Units)**

Prerequisite: Permission. Selected topic(s) that provide for specific course work in the area of manufacturing engineering technology offered once or only occasionally in areas where no formal course exists. (Formerly 2870:496)

**AMET 499 Workshop in Manufacturing Engineering Technology (1-3 Units)**

Prerequisite: Permission. Group studies of special topics in manufacturing engineering technology. (Formerly 2870:499)