

# Manufacturing Engineering Technology

A Dual Admissions Program with NJIT

Division of Engineering Technologies and Computer Sciences — Curriculum Code: 5420

Will Earn Upon Program Completion: Associate in Applied Science (A.A.S.) Degree

## Why major in Manufacturing Engineering Technology?

This program is designed to prepare students for employment in the computer-operated manufacturing facilities of existing and emerging industries. It enables students to develop a broad background that can be applied to such areas as mechanical design, quality control, materials testing, facilities design, automation, stress analysis, and sales. Courses emphasize the application of current knowledge and practices to the solution of specific problems.

## If I major in Manufacturing Engineering Technology, can I transfer to an upper-division college or university?

Yes. You may choose to participate in the Dual Admissions program with the New Jersey Institute of Technology and have all your credits applied to the first two years of NJIT's bachelor's degree program. Or you may choose to transfer to one of many other colleges that offer a baccalaureate in manufacturing engineering technology.

## Are there any requirements I must satisfy before I start taking courses in my major?

All new students must take a basic skills competency test. Based on the results of the test, you may be required to take developmental courses in reading, English, and/or mathematics.

## How long will it take for me to complete this degree?

If you do not need developmental course work and you attend full time, you can complete the degree in two years. Part-time students can complete the program in three or four years.

## Where should I direct specific questions about this program?

Contact the Division at (973) 877-4400.

## Upon completion of this program, graduates will be able to:

- ◆ Select and specify materials for manufacturing applications based on principles of engineering mechanics, strength of materials, weight, corrosion, finish, and cost;
- ◆ Demonstrate understanding of the principles and elements of automated controls, and the ability to select appropriate devices for manufacturing and various control processes;
- ◆ Apply basic principles of blueprint reading to prepare detailed working drawings using computer aided design (CAD) skills;
- ◆ Use American National Standards Institute (ANSI) protocol for sizing and tolerancing of mating parts, and apply geometric dimension and tolerancing (GD&T) techniques to engineering design;
- ◆ Utilize 3D solid modeling CAD systems to create mechanical components and generate assembly designs;
- ◆ Utilize CAD and computer aided manufacturing (CAM) software and hardware to integrate design, manufacturing, and production processes;
- ◆ Apply standard testing techniques approved by ANSI, and perform quality control and inspection of products; and
- ◆ Use computer numeric control (CNC), CAM, and coordinate measuring machines (CMM) in automated manufacturing and product inspection processes.

**Note:** To prepare for the manufacturing field, two distinct programs are available: Manufacturing Engineering Technology (Curr. Code 5420) and Engineering (Curr. Code 0399). Consult the program coordinator for a complete explanation.

Program Educational Objectives:

Graduates of the program will demonstrate:

1. Employment in the field of their major
2. Engagement in continuing education, including advanced degrees
3. Professional advancement in their chosen field

# Manufacturing Engineering Technology

## A.A.S. Degree Program

<p><b>GENERAL EDUCATION REQUIREMENTS:</b> (22 credits)</p> <p><b>Communications (6 credits)</b> ENG 101 College Composition I 3 ENG 102 College Composition II <b>or</b> ENG 105 Technical Writing 3</p> <p><b>Social Science (6 credits)</b> Select two courses from: ANT 101, 105; ECO 101, 102; POL 101, 104; PSY 101, 102 219; SOC 101, 108, 219 6</p> <p><b>Math (7 credits)</b> MTH 113 College Algebra with Trigonometry 4 MTH 114 Unified Calculus I 3</p> <p><b>Humanities (3 credits)</b> Select one History course from: HST 101, 102, 111, 112, 121, 122, 131, 132, 134-137, 161, 162 3</p> <p><b>MAJOR COURSE REQUIREMENTS:</b> (26 credits)</p> <p>ENR 103 Engineering Graphics 2 ENR 105 Applied Computer Aided Design 2 ENR 110 Mechanics 3 MET 201 Manufacturing Proc. and Materials 3 MET 202 Modern Manuf. Sys. and Robotics 4 MET 211 Machines and Controls 3 MET 215 Fluid Mechanics 3 MET 225 Computer Numerical Control 4 MET 250 Mechanical Engr. Tech. Project 2</p> <p><b>ADDITIONAL COURSE REQUIREMENTS:</b> (18 credits)</p> <p>CSC 112 Computer Prog. for Engr. &amp; Tech. 3 ELC 115 Electric Circuits: DC and AC 4 ELC 218 Pulse &amp; Digital Circuits 3 PHY 101 College Physics I 4 PHY 102 College Physics II 4</p> <p><b>Total Credits Required for Degree 66</b></p>	<p><b>RECOMMENDED SEQUENCE OF COURSES:*</b></p> <p><b>First Semester</b></p> <p>ENG 101 College Composition I 3 ELC 115 Electric Circuits: DC and AC 4 ENR 103 Engineering Graphics 2 MTH 113 College Algebra with Trigonometry 4 PHY 101 College Physics I 4</p> <p><b>Second Semester</b></p> <p>ENG 102 College Composition II <b>or</b> ENG 105 Technical Writing 3 ENR 105 Applied Computer Aided Design 2 CSC 112 Computer Prog. for Engr. &amp; Tech. 3 MTH 114 Unified Calculus I 3 PHY 102 College Physics II 4</p> <p><b>Summer</b></p> <p>Social Science requirement 3 Humanities requirement 3</p> <p><b>Third Semester</b></p> <p>ENR 110 Mechanics 3 MET 201 Manufacturing Proc. and Materials 3 MET 215 Fluid Mechanics 3 MET 225 Computer Numerical Control 4</p> <p><b>Fourth Semester</b></p> <p>ELC 218 Pulse &amp; Digital Circuits 3 MET 202 Modern Manuf. Sys. and Robotics 4 MET 211 Machines and Controls 3 MET 250 Mechanical Engr. Tech. Project 2 Social Science requirement 3</p>
--	---

**\*NOTE:** This plan assumes the completion of all required developmental courses in reading, writing, and mathematics as well as other pre- and co-requisites for some of the courses, as listed in the Course Descriptions section.