

Manufacturing Technology

Creativity & Invention

by Jeff Elijah



The Jet Milling Machine is among the equipment available for use in the C.O.D. Manufacturing Technology area by students such as Kent Taylor of Glendale Heights.

Give a child some paint, blocks or Legos and watch. Invariably the child will begin to concentrate on one of the most basic of all human behaviors: the desire to make something.

That's what Manufacturing Technology is all about — learning to make things. Contrary to its image as a solid, unimaginative kind of career, Manufacturing Technology holds great opportunities for creativity and invention, which bring joy and satisfaction.

In Manufacturing Technology, workers use tools at hand to create objects and processes that are useful, convenient, durable or attractive, sometimes all at the same time. Or they might create new tools and processes, so others can use them to manufacture other things. Everything not part of the natural world has been manufactured.

However, in the manufacturing tech world, education is the first step. So says Mark Meyer, coordinator of the Manufacturing Technology program at College of DuPage.

“Skilled people are in high demand, but they have to know the technology,” Meyer said. “The conception in this profession used to be that people just had to be good with their hands, nothing more. That’s not true today. Take classes, learn the basic skills and you can enter the work force.”

Meyer’s C.O.D. program, which offers certificates and two-year degrees, has met with tremendous success in educating students who immediately move on to manufacturing tech jobs both in and outside of the Chicago area.

For those thinking about entering the field, the choices are many. College of DuPage offers Associate in Applied Science degrees in Automated Manufacturing Systems, Drafting and Design, Manufacturing Technology, and Manufacturing Engineering Technology.

C.O.D. students can earn certificates in Automated Manufacturing Systems, Manufacturing Technology, Drafting and Design, Computer-Aided Design, Mold Making, and Tool and Die Making. The college also offers courses in welding and plastics technology among its many occupational programs.

Many four-year schools accept C.O.D. transfer credits toward baccalaureate degrees, and some, such as the Illinois Institute of Technology, even have special programs geared toward College of DuPage Manufacturing Technology graduates.



“The technological advancements in the manufacturing field require continuous learning, and College of DuPage has assisted Flexco greatly in that pursuit.”

Jerry Paulson, President of Flexco, Downers Grove, IL

Naturally, the level of education determines the level of job, but careers in manufacturing technology are diverse. They include positions such as tool and die maker, industrial electrician, industrial maintenance mechanic, machine tool set-up operator, machinist, programmer, CAD designer, tool and production planner, manufacturing technologist, manager, planner or supervisor in various manufacturing industries.

Again, education is the key. In these technology-advanced times, the first step is an easy one: simply make a telephone call ... or send an e-mail ... or check a web page ... or send a fax. You can even do it the old-fashioned way by putting on your shoes, driving to College of DuPage and taking a short walk from the parking lot to the Admissions and Information office to pick up a copy of the *Catalog* and other information.

No matter which method you choose to begin, we think you will like where it leads. The College of DuPage Manufacturing Technology program will teach you to make something ... and to make something of yourself.

Here's how to get started:

Admissions and Information office, College of DuPage, 425 Fawell Blvd., Glen Ellyn, IL 60137-6599. Telephone: (630) 942-2380 for information; 942-2482 for catalogs.

College web site: www.cod.edu

C.O.D. Manufacturing Technology program: Mark Meyer, Coordinator, Manufacturing Technology, College of DuPage, 425 Fawell Blvd., Glen Ellyn, IL 60137-6599. Telephone: (630) 942-2038. E-mail: meyerm@cod.edu.

Meyer's office is located in the Berg Instructional Center (IC), Room 0032B.



Choices are Good

Students interested in manufacturing technology have several educational options, depending on short- and long-term goals and career aspirations.

Bachelor of Science (B.S.)

After graduating or transferring from C.O.D., students earning a baccalaureate degree specialize in a particular area of technology. Completing a baccalaureate degree does not prepare a student to be a machinist, but does lead to a career such as CAD designer, tool and production planner, manufacturing technologist, or CNC programmer.

Associate in Applied Science (A.A.S.)

Graduates of two-year, A.A.S. programs at C.O.D. can be considered for occupations such as tool and die maker, industrial electrician and industrial maintenance mechanic. For those who decide to continue their education, the A.A.S. option can provide a pathway toward a baccalaureate degree in technology as well. The College of DuPage Manufacturing Technology program offers A.A.S. degrees in Manufacturing Engineering Technology, Automated Manufacturing Systems, Drafting and Design, and Manufacturing Technology.

Associate in Science Degree (A.S.)

A two-year A.S. degree at C.O.D. is designed specifically for transfer into a baccalaureate degree program. Study includes recommended core technical courses and the general education core curriculum. Careers in management, planning and designing are possibilities for those who complete this degree.

Certificate Programs

The C.O.D. Manufacturing Technology program offers certificates in Automated Manufacturing Systems, Manufacturing Technology, Drafting and Design, Computer-Aided Design, Mold Making, and Tool and Die Making. Students completing a certificate program will qualify for entry-level positions in the field. Credits in certificate programs count toward the completion of a two-year degree.

Apprenticeship

Apprenticeship is a combination of on-the-job training and related classroom instruction in a skilled craft or trade. Apprentices work under a skilled journeyman

to learn a particular skill or trade. The training lasts from one to six years, depending on the trade. Three to four years is average.



David Boggess (left), president of Northstar Metal Products, former C.O.D. student and IIT Manufacturing Technology and Management graduate

C.O.D. and I.I.T.: Part

Many potential College of DuPage students are faced with a significant career decision: Should they take occupational courses that will help them to get a well-paying job now, or in the immediate future, or should they take courses leading to a four-year degree in the coming years?

Over the past few years, C.O.D. has worked with the Illinois Institute of Technology to develop a transfer program that allows students to do both.

Students who earn an A.A.S. degree in Manufacturing Technology at C.O.D. receive full credit for those two years of schooling when they enter the Bachelor of Manufacturing Technology and Management Program at IIT, which is able to give full transfer credits for the occupational courses taken.

“My educational experience provided me with the confidence and tools needed to ‘cut to the chase’ in tackling today’s complex manufacturing issues.”

Kenneth Posmer, former C.O.D. student and IIT Manufacturing Technology and Management graduate

IIT accepts College of DuPage graduates knowing that they are skilled technicians. IIT then restructures the junior- and senior-level courses so that the students who enter with an A.A.S. degree cover everything that is normally covered in a four-year program.

“IIT has basically turned the bachelor’s education inside out — everything is covered but in a different order,” said Keith McKee, IIT’s Manufacturing Technology and Management program director.

The IIT bachelor’s degree program in manufacturing technology and management is specifically for working adults. MTM students are



Products, Inc., consults with former C.O.D. student graduate Kenneth Posmer.

Partners in Education

usually successful within their companies and have full-time jobs. These students are attending school not to qualify to get a job, but rather to have the education to move upward into management, staff and ownership.

“The potential of getting full credit for all of the A.A.S. (occupational) coursework makes the C.O.D. students’ choice much easier,” McKee said. “They can take courses that will in the short-term help them get a good paying job, without sacrificing their educational future.”

He pointed out that more than 20 percent of IIT students in the MTM program have C.O.D. roots. Of the 17 graduates to date, five came through C.O.D.

One of those former C.O.D. students is Kenneth Posmer, who has worked for Northstar Metal Products in Chicago for the past three years. Posmer is a project manager and manufacturing engineer.

“My educational experience provided me with the confidence and tools needed to ‘cut to the chase’ in tackling today’s complex manufacturing issues,” he said. “I’ve learned to communicate solutions that have turned into opportunities.”

Suggested First-Term Courses for Manufacturing Engineering Technology Degree

Manuf 1101	Industrial Design/CAD	3
Manuf 1121	Physical Metallurgy	3
Manuf 1141	Hydraulics and Pneumatics	3
Manuf 1151	Machine Shop I.....	3
Manuf 1180	Quality Control	3

Linda Carlson of Wheaton prepares her intricate work in the Welding lab, located next to the Manufacturing Technology area in the lower level of the college’s Berg Instructional Center.



Alphabet Soup

Every trade or business has its abbreviations to learn. Here are a few that could be useful to students in the Manufacturing Technology program at College of DuPage.

A.A.S. = Associate in Applied Science

The two-year degree earned by completing C.O.D.’s Manufacturing Technology program.

ETC = Education to Careers

Education to Careers provides all students with the education, experience and guidance to enable them to set practical goals, make informed choices, meet high standards and achieve their dreams. The ETC approach is to make educators, businesses, parents and students partners in preparing young people to meet the demands of the complex and ever-changing workforce.

IAI = Illinois Articulation Initiative

Each year, up to 30,000 students transfer between Illinois schools. To make transferring easier for students who are planning to transfer from one Illinois college/university to another, education professionals have developed this new statewide transfer program.

ICCB = Illinois Community College Board

The state coordinating board for community colleges. The Board promotes cooperation within the system and accommodates those state of Illinois initiatives that are appropriate for community colleges.

IMA = Illinois Manufacturers Association

Founded in 1893, the Illinois Manufacturers Association is the largest state manufacturing trade association in the United States. Its purpose is to strengthen the economic, social, environmental and governmental conditions for manufacturing and allied enterprises in the state of Illinois, resulting in an enlarged business base and increased employment.

MTM = Manufacturing Technology and Management

This Illinois Institute of Technology program, to which many C.O.D. students transfer, offers focused courses in manufacturing technology and management for individuals who wish to build upon their college work and technical skills.

NAM = National Association of Manufacturers

The National Association of Manufacturers is the nation’s largest industrial trade association. Its mission is to enhance the competitiveness of manufacturers and improve American living standards by shaping a legislative and regulatory environment conducive to U.S. economic growth, and to increase understanding among policymakers, the media and the general public about the importance of manufacturing to America’s economic strength.

PMPA = Precision Machined Products Association

Since its formation in 1933, the Precision Machined Products Association has been the sole provider of industry-specific information. With the combined strength of more than 580 members, PMPA is able to provide a variety of management and technical services to help support member companies in all areas of supervision and production.

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Mark Meyer, coordinator of Manufacturing Technology at C.O.D., demonstrates use of the Coordinate Measuring Machine to Amy Fitch of Lombard. The machine is one of several donated to the program by industry.

Associate in Applied Science Degree

Graduation requirements for an Associate in Applied Science degree in Manufacturing Engineering Technology at College of DuPage include the following courses. Please see the college catalog, visit the college web site (www.cod.edu), or call (630) 942-2038 to get details on other associate degree and certificate programs offered by the Manufacturing Technology program.

Degree Option: Manufacturing Engineering Technology

Course	Name	Credits
Manuf 1101	Industrial Design/CAD	3
Manuf 1121	Physical Metallurgy	3
Manuf 1141	Hydraulics and Pneumatics	3
Manuf 1151	Machine Shop I.....	3
Manuf 1160	Technical Static and Strength of Material	4
Manuf 2202	Solid Modeling and Design.....	3
Manuf 2203	Manufacturing Processes and Design	3
Manuf 2251	Computer Numerical Control (CNC)	3
Manuf 2253	Computer-Aided Manufacturing (CAM).....	3
Manuf 2281	Cost Analysis.....	2
Elect 1100	Electricity and Electronics Fundamentals	2
Math 1431	Precalculus I.....	5
Math 1432	Precalculus II: Trigonometry	3
Math 1635	Statistics	4
Physi 1201	General Physics I.....	5
Manuf 1180	Quality Control	3
General Education (in addition to those courses listed above)		12
Total Credits Required.....		64

SME = Society of Manufacturing Engineers

The Society of Manufacturing Engineers is the world's leading professional society supporting manufacturing education. Through its member programs, publications, expositions and professional development resources, SME promotes an increased awareness of manufacturing engineering and helps keep manufacturing professionals up to date on leading trends and technologies.

TCD = Technology Center of DuPage

This Addison, IL, school provides educational and professional opportunities to help students develop skills, build self-esteem and challenge their potential for future success in many fields. This location also houses the convenient C.O.D. Addison Center. Call 942-4600 for Addison Center information.

TMA = Tooling and Manufacturing Association

Founded in 1925, the Tooling and Manufacturing Association represents more than 1,600 Chicago-area precision metalworking, plastic molding and supplier companies.

For more information about Manufacturing Technology, refer to the College of DuPage web site: www.cod.edu, or call Mark Meyer, program coordinator, (630) 942-2038.

Learn More About Manufacturing Technology

Clip and return this coupon to learn more about the Manufacturing Technology program at College of DuPage. Check for information on:

- Automated Manufacturing Systems Drafting and Design
 Manufacturing Technology Manufacturing Engineering Technology

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Return coupon to: Mark Meyer
 Coordinator, Manufacturing Technology
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 Glen Ellyn, IL 60137-6599