ABOUT THE PROGRAM
The world of manufacturing is changing rapidly and so too are the skill sets needed to be a competitive part of it. Here is where the skills of a true craftsperson and the high-tech world of automation combine to form the fast-paced CNC programming and machining jobs of the future. If you like to create things with your hands, are fascinated with technology, and want above-average earning power, the CNC Technician program is for you. This career offers the best of both worlds as you will be a respected craftsperson in a growing profession.

PROGRAM OUTCOMES
• Apply machine tool safety practices.
• Develop critical thinking and problem-solving skills.
• Develop and follow manufacturing processes and procedures.
• Set up and operate manual and CNC metal-cutting machine tools in an efficient manner.
• Perform art inspection using hand-held and computerized precision measuring instruments.
• Develop programming for use on CNC machines.
• Apply advanced math, algebra, geometry, and trigonometry concepts to machining operations.
• Apply advanced print reading skills to machining operations.

ADMISSIONS STEPS
• Work with Admissions Specialist to:
  • Submit application and $30 fee.
  • Complete an assessment for placement (Accuplacer or ACT).
  • Submit official transcripts (high school and other colleges).
  • Meet with program advisor/counselor to discuss program details.

APPROXIMATE COSTS
• $132 per credit (resident)
• $198 per credit (out-of-state resident)
• Other fees vary by program (books, supplies, materials, tools, uniforms, health-related exams, etc.) Visit gotoltc.edu/financial-aid/ tuition-and-fees for details.

PLACEMENT SCORES
Accuplacer/ACT scores will be used to develop your educational plan. Contact your program advisor/counselor for details.

CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES
LTC credits transfer to over 30 universities. For more information visit gotoltc.edu/ future-students/transfer.

RELATED PROGRAMS
• Machinist Apprenticeship
• Tool and Die Apprenticeship

CONTACT
Chou Yang, Admissions Specialist
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CNC TECHNICIAN

Program Number 32-444-1
Technical Diploma • Four Terms

Catalog No. Class Title Credit(s)

Term 1
31420310 Machine Tool Hand Tools 1
31420330 Machine Tool Measuring 1
31420336 Machine Tool Drills 1
31420334 Machine Tool Saws/Material Selection 1
31420340 Machine Tool Lathes 1 2
31420350 Machine Tool Mills 1 2
10420185 Machine Tool Programming Basic 1
31420320 Machine Tool Math 2
31457385 Machine Tool Print Reading 2
31809362 Psychology for Life 1
14

Term 2
10420184 Machine Tool Programming 1
10420120 Machine Tool CAM 1
31420342 Machine Tool Lathes 2 2
31420352 Machine Tool Mills 2 2
31420360 Machine Tool Grinders 1 1
31420380 Machine Tool CNC Turning Center 2
31420382 Machine Tool CNC Machining Center 2
31420398 Machine Tool Technical Skills Portfolio 1
31801359 Communication Skills for the Workplace 2
14

Term 3
31420372 Metallurgy 1
32444301 Machine Tool Math Advanced 1
32457389 Print Reading Advanced 1
32444305 Advanced Measuring GD&T 2
32444304 Advanced Mills (Proto Traks) 2
32444309 Grinders 2 2
32444302 Advanced Machining Centers 1A 2
32444307 Advanced Turning Centers 1A 2
31809363 Challenging Issues 1
14

Term 4
32444303 Advanced Machining Centers 1B 3
32444308 Advanced Turning Centers 1B 3
32444340 EDM Sinker 2
32444342 EDM Wire 2
32444306 Advanced Technical Skills Portfolio 1
32444343 CNC Technician Internship 2
13

TOTAL 55

Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor/counselor for details.

2015-16
ADVANCED MACHINING CENTERS 1...previews the learner to set up and operate a CNC machining center, load program into the CNC machining center, set up and operate using various workholding techniques, editing a program on the CNC control, create single operation programs for the CNC machining center. PREREQUISITE: 31420392 Machine Tool CNC Machining Center 1.

ADVANCED MACHINING CENTERS 1B...previews the learner: to create programs using Mastercam software, post process Mastercam program and downward load into control, set up and prove out program on CNC machine, operate program on CNC machine, create programs for hole producing, profiling and pocketing, modify toolpaths using operations manager, transform software environment, construct 2-D geometry, modify existing geometry, create 2-D toolpaths...PREREQUISITE: 32444302 Advanced Machining Centers 1A.

ADVANCED MEASURING/GO&D...prepares the learner to inspect using following: precision measuring tools, surface plate measuring tools, GD&T form tolerances, GD&T orientation tolerances, GD&T profile and runout tolerances, GD&T location tolerances, and examine basic cmm programming principles. PREREQUISITE: 31420330 Machine Tool Measuring Centers 2.

ADVANCED MILLS (PROTO TRAKS)...prepares the learner: to setup and operate vertical mills, create and use soft jaws, use advanced subroutines, create programs, using the A.G.E. function, create programs using the DXF converter. PREREQUISITE: 31420352 Machine Tool Mills 2.

ADVANCED TECHNICAL SKILLS PORTFOLIO...previews the learner to complete a final project using multiple machines, processes, and the advanced skills and techniques acquired throughout the Machine Program. Learners will also create a portfolio for this final project that will include a work progress plan, and photographs of their project. PREREQUISITE: 31420398 Machine Tool Technical Skills.

ADVANCED TURNING CENTERS 1A...prepares the learner to set up and operate a CNC turning center, create programs for the turning center, execute programs, edit existing G&M code programs on the control, identify, and modify G&M code programs using conversational programming, create programs using MasterCam. PREREQUISITE: 32444307 Advanced Turning Centers 1A.

ADVANCED TURNING CENTERS 1B...prepares the learner to set up and operate a CNC turning center, create programs for the turning center, execute programs, edit existing G&M code programs on the control, identify, and modify G&M code programs using conversational programming, create programs using MasterCam. PREREQUISITE: 32444307 Advanced Turning Centers 1A.

CHALLENGING ISSUES...prepares the learner to understand the challenging occupational and social issues and problems that shape the direction of today's work world and become aware of what those contemporary issues are, how the issues impact the student, and how the student can make changes when necessary.

CNC TECHNICIAN PROGRAM INTERNSHIP...provides a broad variety of specific occupational experiences in the manufacturing machine tool/CNC machining industry. Students work in facutal development, customer service, and evaluate learning experiences appropriate to the field of study and major focus of the student. COREQUISITES: 32444303 Advanced Machining Center 1B and 32444308 Advanced Machining Center 1B.

COMMUNICATION SKILLS FOR THE WORKPLACE...prepares the student to develop paper job-search tools and job-related writing skills to improve job stability; introduces the students to team-building skills to resolve organizational problems; introduces the student to the skills of effective listening; prepares the student to respond to workplace criticism and praise; and introduces the student to interpersonal relationship skills, including effective interviewing skills, customer relations, and management/employee relations.

EDM SINKER...prepares the student to analyze basic Electrical Discharge Machining (EDM) theory, select EDM materials, and machine EDM parts using an EDM machine. Operates, sets up, and machine EDM machine components, set up a sinker EDM, operate a sinker EDM, and create a hand-finished surface. COREQUISITES: 31420310 Machine Tool Hand Tools and 31420330 Machine Tool Measuring or 31420390 Industrial Maintenance Measurement and 31420352 Machine Tool Mills 2.

EDM WIRE...prepares the learner to wire EDM processes, identify wire EDM components, follow wire EDM safety rules, control, load program into control, setup and prove out program, and operate wire EDM machine tool, hand-finish wire EDM surfaces, manual programming wire EDM machine tools & programming wire EDM machine tools using Master CAM Wire. PREREQUISITE: 32444340 EDM Sinker.

GRINDERS 2...prepares the learner to identify grinding-wheel characteristics suitable for various applications, perform the basic process of mounting and dressing contour surface grinding wheels, demonstrate the use of common workholding devices, apply methods for grinding angles, side grinding, and cylindrical grinding. PREREQUISITE: 31420360 Machine Tool Grinders 1.

MACHINE TOOL CAM...prepares the student with skills to: explore "Mastercam" computer software environment, construct 2-D geometry, modify existing geometry, create 2-D toolpaths for hole producing, profiling and pocketing, modify toolpaths using operations manager, transform existing toolpaths and create CNC Machine Operator documents.

MACHINE TOOL CNC MACHINING CENTER...prepares the learner to follow Computer Numerical Control (CNC) machining center tool safety rules, identify components, set up and operate CNC machining center tool with Fanuc controls. COREQUISITES: 31420310 Machine Tool Hand Tools and 31420330 Machine Tool Measuring or 31420390 Industrial Maintenance Measurement or 31420394 Industrial Maintenance Measurement and Drills.

MACHINE TOOL CNC TURNING CENTER...prepares the learner to follow CNC turning center safety rules, load program into control, setup and prove out program, operate CNC turning center, and prove out program on CNC machining center. COREQUISITE: 31420310 Machine Tool Hand Tools and 31420330 Machine Tool Measuring or 31420390 Industrial Maintenance Measurement or 31420394 Industrial Maintenance Measurement and Drills.