CNC AUTOMATION TECHNICIAN

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

ABOUT THE PROGRAM

Learn Machining and Computer Numerical Control (CNC) at your own pace, through hands-on learning. Machining is used to perform a wide range of manufacturing tasks including milling, drilling, and turning. Technicians work with CNC equipment from setup through operation, producing parts and tools from metal, plastic, or other materials. CNC technicians program the equipment to control speed, feed, and path of the cut. They inspect the finished product to ensure it is a quality part and ready for the next step in production. If you like to create things with your hands, are fascinated with technology, and want above-average earning power, the CNC Automation Technician program is for you.

PROGRAM OUTCOMES

- Apply basic safety practices in the machine shop.
- Interpret industrial/engineering drawings.
- Apply precision measuring methods to part inspection.
- Perform advanced machine tool equipment set-up and operation.
- Perform advanced programming, set-up and operation of CNC Machine Tools.
- Perform advanced CNC Machining operations.

CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

Lakeshore credits transfer to over 30 universities. For more information visit lakeshore.edu/future-students/transfer.

ADMISSIONS AND FIRST SEMESTER ENROLLMENT STEPS

- Submit online application.
- Complete the online Student Success Questionnaire.
- Complete Get Started at Lakeshore appointment:
  - Application Check-in
  - College Orientation Overview
  - 1st Time Program Registration

**Submit high school transcripts, college transcripts, and test scores (optional, highly recommended). Official transcripts will be needed for transferring college credit(s) and for financial aid purposes.*

ACADEMIC PREPAREDNESS/FUTURE SEMESTER ENROLLMENT STEPS

If applicable, complete program-specific academic preparedness requirements and enrollment steps prior to enrolling in occupational or core courses. Students will be notified if there is a program waitlist. View the college's program webpage for details: https://lakeshore.edu/programs-and-courses/career-areas/manufacturing/cnc-automation-technician.

APPROXIMATE COSTS

$152.85 per credit tuition (WI resident) plus $9.17 per credit student activity fee. Material fee varies depending on course. Other fees vary by program. Visit lakeshore.edu/Financial-Aid/tuition-and-fees for details.

FINANCIAL AID

This program is eligible for financial aid. Visit lakeshore.edu/Financial-Aid for more information.

SPECIAL NOTE

- Learn when you want. Progress at your own pace. Receive personalized coaching and support. The full CBE definition may be found at lakeshore.edu/cbe.
- This program offers flexible start dates throughout the year.

RELATED PROGRAMS

- Machinist Apprenticeship
- Tool and Die Apprenticeship

CONTACT

Lakeshore College Recruiter
920.693.1366 • Recruitment@lakeshore.edu

Catalog No.	Class Title	Credit(s)
	Term 1	
31442350	Metal Manufacturing Processes*	1
31420330	Precision Measuring*	1
31420385	Orthographic Projection Print*	1
31420325	Manufacturing Math*	1
31420338	Drills and Saws*	1
31420340	Manual Lathe Operation*	1
31420350	Manual Mill Operation*	1
31420386	GD&T Intro*	1
31420326	Manufacturing Applied Math*	1
31444301	G&M Code Programming*	1
31444303	CNC Machining Operation*	1
31444309	CNC Turning Operation*	1
31420359	Heat Treat and Precision Grinding*	1
		13
	Term 2	
31801361	Interpersonal Skills	1
31801360	Workplace Fundamentals	1
31420353	ProtoTrak Mill-Squaring Programming*	1
31420354	ProtoTrak Mill-Slot and Hole Programming*	1
31444307	Mill-2D Using CAM*	1
31444311	CNC Turning-Turning and Cut Off Setup*	1
31444313	CNC Turning-Hole Producing Setup/Threading*	1
31444315	CNC Machining-Facing and End Milling Setup*	1
31444317	CNC Machining-Hole/Slot/Engraving Setup*	1
31444321	CNC Turning 2D Using CAM*	1
31420361	Complex Print Drawings*	1
31420362	Advanced Precision Measuring*	1
31420363	GD&T-Inspection*	1
		13
	Term 3	
31444323	CNC Machining-Probing/Editing/G&M Code*	1
31444325	CNC Machining-Work Holding*	1
31444327	CNC Turning-Program Editing*	1
31444333	CNC Machining-Setup/Operation with G&M Code*	1
31444357	CNC Turning-Setup and Operation*	1
31420364	ProtoTrak Mill Programming*	1
31420365	ProtoTrak Lathe Programming*	1
31444339	CNC Machining-G&M Programming Using CAM*	1
31444341	CNC Machining-Setup/Operation Using CAM*	1
10606208	3D Design- SolidWorks 1*	2
10606202	Product Design & Rapid Prototyping*	2
31444347	HSM for SolidWorks*	1
		14
	Term 4	
32444343	CNC Technician Internship	2
31444343	CNC Turning-G&M Programming Using CAM*	1
31444345	CNC Turning-Setup and Operation Using CAM*	1
31444349	CNC Turning with Live Tooling-Operation*	1
31444351	CNC Turning with Live Tooling-Programming*	1
31444353	CNC Turning with Live Tooling-Adv Programming*	1
32444306	CNC Skills Portfolio*	1
31444359	Wire EDM Operation*	1
31444371	Wire EDM Program/Operate*	1
10620167	Robotics-Teach Pendant/Controls*	1
10620179	Robotics-Editing Programs*	1
32444355	Multi Axis Mill-Set up and Operation*	1
32444357	Multi Axis Mill-Programming*	1
32444359	Multi Axis Mill-Advanced Programming*	1
		15
		TOTAL 55

*CBE delivery only

Curriculum and program acceptance requirements are subject to change. Program start dates vary; check with your academic counselor for details. The tuition and fees are approximate based on 2025-2026 rates and are subject to change prior to the start of the academic year.

REAL EXPERIENCE FOR THE REAL WORLD

2025-26

LAKESHORE COLLEGE

Please see Precision Machining Technology for Term 1 & 2 course descriptions.

3D DESIGN-SOLIDWORKS 1…introduces the students to the concepts and commands of parametric solid modeling. Students create sketches and add relationships to the sketch segments, extrude the sketches to create models, and add features such as fillets, cut extrude, chamfers, holes, draft, shell, lofts and sweeps. Emphasis is placed on the design intent of the parametric solid models and best practices to ensure robust engineering designs.

CNC MACHINING-G&M PROGRAMMING USING CAM…covers how the ability to create G&M code programs to create complex parts is made possible using CAM software. Prepares the learner to create G&M code programs using Mastercam software, post process. The learning will be creating programs for facemilling, end milling and hole production.

CNC MACHINING-PROBING/EDITING/G&M CODE…prepares the learner to perform probing operations for part location and edit G&M code programs to meet part specifications for CNC machining centers.

CNC MACHINING-SETUP/OPERATION USING CAM…prepares learner to download programs created using CAM into control; set up and prove out; and operate on the CNC machining center. You will be creating programs for face milling, end milling and hole producing.

CNC MACHINING-SETUP/OPERATION WITH G&M CODE…teaches students to create and edit G&M code for CNC machining centers, load program into control, set up and prove out program, and operate your program on CNC machining center.

CNC MACHINING-WORK HOLDING...prepares the learner to set up and operate a CNC machining center, using various work holding techniques, perform probing on the CNC machining center and edit programs on the CNC control.

CNC SKILLS PORTFOLIO...prepares the learner to create a capstone project using multiple machines and setups and create a portfolio including resume and displaying skills attained throughout program courses.

CNC TECHNICIAN INTERNSHIP…prepares learner to apply technical skills as well as work productively, communicate effectively, and demonstrate ethics in a professional workplace.

CNC TURNING WITH LIVE TOOLING-ADV PROGRAMMING…prepares the learner to operate CNC turning center with live tooling using student developed CAM programs. COREQUISITE: 31444351 CNC Turning with Live Tooling-Programming

CNC TURNING WITH LIVE TOOLING-OPERATION…teaches students to properly setup a CNC turning center with live tooling for safe operation.

CNC TURNING WITH LIVE TOOLING-PROGRAMMING…prepares the learner to create G&M code programs for turning center with live tooling using CAM software. COREQUISITE: 31444349 CNC Turning with Live Tooling-Operation

CNC TURNING-G&M CODE PROGRAMMING USING CAM…prepares the learner to create G&M code programs using CAM software for a CNC turning center.

CNC TURNING-PROGRAM EDITING…prepares the learner to edit programs to create parts to print specifications on a CNC turning center.

CNC TURNING-SETUP AND OPERATION…prepares the learner to setup and operate a CNC turning center using advanced techniques including tailstock and lefthand tooling operations.

CNC TURNING-SETUP AND OPERATION USING CAM…prepares the learner to operate a CNC turning center using student developed CAM programs.

HSM FOR SOLIDWORKS…prepares the learner to create CNC programs using HSM for SolidWorks, creating G&M code programs from the solid model, explore the SolidWorks interface and create face milling, end milling, and hole-producing tool paths for CNC machining centers. High Speed Machining (HSM) is an add-on to SolidWorks for CAM processes.

MULTI AXIS MILL-ADVANCED PROGRAMMING…prepares the learner to operate a CNC multi axis mill using student developed CAM programs.

MULTI AXIS MILL-PROGRAMMING…prepares the learner to create G&M code programs for a CNC multi axis mill using CAM software. COREQUISITE: 32444355 Multi Axis Mill-Set up and Operation

MULTI AXIS MILL-SET UP AND OPERATION…teaches students to properly setup a CNC turning center with live tooling for safe operation.

PRODUCT DESIGN AND RAPID PROTOTYPING...introduces students to product design and rapid prototyping methods. Students will discover the product design process, then utilizing the various equipment available in the MDET program's Fab Lab, produce an actual product they designed. PREREQUISITE: 10606108 SolidWorks 1-Parametric Modeling or COREQUISITE: 10606208 3D Design-SolidWorks 1

PROTOTRAK LATHE PROGRAMMING…prepares the learner to create and operate conversational lathe programs on a ProtoTrak lathe.

PROTOTRAK MILL PROGRAMMING…prepares the learner to perform advanced conversational programing features using a ProtoTrak machining center.

ROBOTICS-EDITING PROGRAMS…teaches troubleshooting and repairing issues in a robot program. COREQUISITE: 10620167 Robotics-Teach Pendant/ Controls

ROBOTICS-TEACH PENDANT/CONTROL…instructs students on using a teach pendant to control a robot. COREQUISITE: 10620179 Robotics-Editing Programs

WIRE EDM OPERATION…prepares the learner to analyze the wire EDM processes, identify components, set up and operate wire EDM safely.

WIRE EDM PROGRAM/OPERATE…prepares the learner to program the wire EDM using CAM software, then set up and operate those programs on the wire EDM.