ABOUT THE PROGRAM

This program will prepare the learner to be employed at the technician level or higher to work on the technology that is at the intersection of I.T. and Manufacturing. The program will train students on industrial computer networks, computer operating systems and servers, programmable logic controllers, and other networked manufacturing operations technology. Students will learn how to troubleshoot and integrate these technologies and help bridge a skills gap in manufacturing environments.

PROGRAM OUTCOMES

• Integrate IT systems with manufacturing equipment.
• Utilize network operating systems.
• Maintain PC and device support and security.
• Perform programming and configuration of Programmable Logic Controllers (PLCs)
• Implement computer networks to integrate manufacturing systems.
• Develop integration projects.

CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

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

ADMISSIONS AND FIRST SEMESTER ENROLLMENT STEPS

 - Submit online application.
 - Complete the online Student Success Questionnaire.
 - Schedule your 1st Time Program Counseling/Registration Session with your assigned program counselor to plan your first semester schedule, review your entire plan of study and discuss the results of the Student Success Questionnaire.
 Submit transcripts and test scores (optional, highly recommended): College transcripts, along with high school transcripts and test scores from within the last five years, used for course registration. Official transcripts needed for transferring college credit(s) and for financial aid purposes.

FUTURE SEMESTER ENROLLMENT STEPS

- Complete online Student Success Tutorial prior to registering for second semester.

APPROXIMATE COSTS

• $146.20 per credit tuition (WI resident) plus $8.77 per credit student activity fee. Material fee varies depending on course. Other fees vary by program. Visit gotoltc.edu/financial-aid/tuition-and-fees for details.

FINANCIAL AID

This program is eligible for financial aid. Visit gotoltc.edu/Financial-Aid or talk with your Admissions Advisor about how to apply for aid.

CONTACT

LTC Admissions Advisor
920.693.1162 • Admissions@gotoltc.edu

Catalog No.	Class Title	Credit(s)
Term 1		
10154124	Information Security Principles	3
10150114	Networking I	3
10154122	PC Support	3
10801195	Written Communication	3
10804133	Math & Logic	3
		15
Term 2		
10150173	Server Administration 1	3
10150176	Networking 2	3
10150131	Linux	3
10620138	Programmable Controllers - Allen Bradley	3
10809196	Introduction to Sociology OR 10809122 Introduction to American Government OR 10809166 Introduction to Ethics	3
		15
Term 3		
10620115	Electrical Math Applications	2
10620105	DC Fundamentals	2
10150163	Networking 3	3
10620140	Programmable Controllers - Allen Bradley Advanced	2
10620194	Touch Screen Applications	2
10620198	Industrial Networks	2
10150168	Network Design and Documentation	3
		16
Term 4		
10150164	Mobile Devices	3
10620110	AC Fundamentals	2
10620122	Industrial Wiring	2
10664120	Industrial Internet of Things	2
10801196	Oral/Interpersonal Communication	3
10809198	Introduction to Psychology	3
		15
		TOTAL 61

Curriculum and program acceptance requirements are subject to change. Program start dates vary; check with your program counselor for details. The tuition and fees are approximate based on 2023-2024 rates and are subject to change prior to the start of the academic year.

AC FUNDAMENTALS...prepares the student to analyze electrical circuits using AC math, analyze AC waveforms, measure and analyze AC power, analyze capacitors and inductors in DC and AC circuits, analyze AC circuits containing reactance and calculate resonance, applythe elements and properties of basic measuring circuits, and describe transformer characteristics. PREREQUISITE: 10620105 DC Fundamentals or 10660105 DC Fundamentals

DC FUNDAMENTALS...prepares the student to convert values to scientific and engineering notations; calculate math quantities; describe basic atomic theory; identify basic electrical terms; use established symbols standards; describe DC voltage characteristics and current sources and electrical resistance; measure and analyze electrical quantities in series and parallel circuits; and desolder/solder single lead components. COREQUISITE: 10804113 College Tech Math 1A or 10804115 College Tech Math 1 or 10804198 Calculus 1 or 10804118 Interm Algebra with Apps

ELECTRICAL MATH APPLICATIONS…prepares learners to solve percent and proportion problems, use the laws of exponents, convert values between measurement systems, apply geometric concepts, and apply trigonometric concepts to solve right triangles. Emphasis will be on the application of skills to technical problems.

INDUSTRIAL INTERNET OF THINGS…introduces learners to theoretical and practical topics of the Industrial Internet of Things (IIoT). The learner investigates the range of sensor and actuator devices available, ways in which they communicate and compute, methods for getting information to and from IIoT-enabled devices, and ways of visualizing and processing data acquired from the IIoT. Upon completion, learners will utilize hardware and software to construct a sensor network within an existing system and utilize industry standard tools to visual the data captured.

INDUSTRIAL NETWORKS...prepares the learner to configure, install and troubleshoot industrial communication networks. This course is highly computer based. COREQUISITES: 10620140 Programmable Controls AB Advanced. This class qualifies for 48 hours of Continuing Education Units (CEUs) for Electricians.

INDUSTRIAL WIRING...prepares the learner to follow safety procedures; maintain a safe and healthy work environment; construct electrical circuits; measure electrical quantities using a VOM and/or DVM; analyze measured values using electrical circuit laws; construct typical industrial control circuits; and analyze typical industrial control circuits.

INFORMATION SECURITY PRINCIPLES…introduces the learner to Information Systems Security. Students will review and analyze the control and security concerns in the information systems environment; the security challenges created from the emergence of new technology and the changing internal and external environments; and the effect of legal, regulatory, and current security technology on policy development. Opportunity to earn TestOut Security Pro Certification.

INTRODUCTION TO PSYCHOLOGY...introduces students to a survey of the multiple aspects of human behavior. It involves a survey of the theoretical foundations of human functioning in such areas as learning, motivation, emotions, personality, deviance and pathology, physiological factors, and social influences. It directs the student to an insightful understanding of the complexities of human relationships in personal, social, and vocational settings. COREQUISITE: Reading placement assessment or equivalent

INTRODUCTION TO SOCIOLOGY...introduces students to the basic concepts of sociology: culture, socialization, social stratification, multi-culturalism, and the five institutions, including family, government, economics, religion, and education. Other topics include demography, deviance, technology, environment, social issues, social change, social organization, and workplace issues. COREQUISITE: Reading placement assessment or equivalent

LINUX...is a hands-on course designed to provide the learner with the skills to install the Linux operating system, use its command-line and graphical user interfaces, manage system resources, and create scripts. The course will also introduce the learner to Linux system administration including the installation and administration of users, files, software, networking, and Internet and Intranet services.

MATH & LOGIC...will apply mathematical problem solving techniques. Topics will include symbolic logic, sets, algebra, Boolean algebra, and number bases. COREQUISITE: Math placement assessment or equivalent AND Reading placement assessment or equivalent

MOBILE DEVICES…are quickly becoming indispensable tools in the production environment. This course will introduce the learner to various industry mobile technologies used to promote better decision-making, reporting, and improve manufacturing performance. Some of the devices covered are tablets, smartphones, barcode printers and readers, and radio frequency identification (RFID) readers/writers.

NETWORK DESIGN/DOCUMENTATION...is a lecture/hands-on course designed to introduce students to network design and documentation fundamentals. Topics include: needs analysis, hardware needs and analysis, network layout and design, and documenting a network. PREREQUISITE: 10150176 Networking 2

NETWORKING 1...is a lecture/hands-on course designed to introduce students to network fundamentals. Topics covered include: OSI Reference Model; LAN and WAN topologies; cabling systems; access methods; protocols; Internet working devices (e.g. hubs, bridges, routers, switches, etc.); and basic network design.

NETWORKING 2...provides the students with networking terminology, protocols, network standards, LAN's, WAN's, TCP/IP addressing, and routing. PREREQUISITE: 10150114 Networking 1

NETWORKING 3...introduces the student to switching technology, hardware and software firewalls, and virtual private networks (VPN). PREREQUISITE: 10150176 Networking 2

ORAL/INTERPERSONAL COMMUNICATION...provides students with the skills to develop speaking, verbal and nonverbal communication, and listening skills through individual speeches, group activities, and other projects. COREQUISITE: Reading placement assessment or equivalent

PC SUPPORT...prepares you to be able to install, manage, repair, and troubleshoot PC hardware and Windows, Linux, and Mac operating systems. You will learn how to set up a new computer, identify system requirements, install or upgrade operating systems, manage external devices, troubleshoot common computer problems, and connect to a small home network. Opportunity to earn TestOut PC Pro Certification.

PROGRAMMABLE CONTROLLERS - ALLEN BRADLEY…prepares the student to understand basic PLC structure and terminology; learn to create and troubleshoot basic PLC programs using the RSLOGIX 500 software and the RSLINX communication software; become familiar with communicating with programming SLC-500 PLCs. This course is highly computer based.

PROGRAMMABLE CONTROLLERS - ALLEN BRADLEY ADVANCED...prepares the student to develop applications utilizing subroutine instructions, analog modules; gain a basic understanding of creating and troubleshooting programs using the ControlLogix, Studio5000 software. This course is highly computer based. PREREQUISITE: 10620138 Prog Cntrls/AB. This class qualifies for 48 hours of Continuing Education Units (CEUs) for Electricians.

SERVER ADMINISTRATION 1...is a hands-on course designed to introduce the learner to the installation and configuration of Windows Server servers. The student will learn how to install and configure servers, configure server roles and features, configure Hyper-V, deploy and configure core network services, install and administer Active Directory (AD), and create and manage Group Policy. PREREQUISITE: 10154124 Information Security Principles

TOUCH SCREEN APPLICATIONS...prepares the student to create, edit, and troubleshoot screens, objects and I/O related to the FactoryTalkME application. Students will create, edit and communicate with Allen-Bradley PLC programs for real-time control utilizing the touchscreen applications. This course is highly computer based.This class qualifies for 48 hours of Continuing Education Units (CEUs) for Electricians. COREQUISITES: 10620140 Programmable Controls AB Advanced

WRITTEN COMMUNICATION...teaches the writing process, which includes prewriting, drafting, revising, and editing. Through a variety of writing assignments, the student will analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Keyboarding skills are required for this course. It also develops critical reading and thinking skills through the analysis of a variety of written documents. COREQUISITE: Writing placement assessment or equivalent AND Reading placement assessment or equivalent