

**2019-20** LAKESHORE  
**TECHNICAL COLLEGE**  
CATALOG





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Lakeshore Technical College does not discriminate on the basis of race; color; creed; national origin; ancestry; religion; age; sex; sexual orientation/gender; marital status; pregnancy; disability; arrest or conviction record; political affiliation; veteran status; genetic testing; or service in the armed forces in its services, employment programs, and /or its educational programs and activities.

It is the policy of Lakeshore Technical College not to discriminate on the basis of disability in admission or access to or treatment in its programs or activities. Lakeshore Technical College provides reasonable accommodations to assist persons with disabilities which affect their ability to access or participate in its programs or activities. Persons who wish to request assistance or reasonable accommodations should contact Student Services at 1.888.GO.TO.LTC (1.888.468.6582)

### **DISCLAIMER**

Lakeshore Technical College reserves the right to modify, amend or delete all policies, procedures, or any other information presented in this catalog. The college also reserves the right to modify the schedules, fees and/or regulations affecting student programs and activities. Please review the information in this catalog carefully. You are responsible to acquire an active knowledge of the college's policies and procedures. Students who violate these procedures will be subject to disciplinary action.

## **STUDENT HANDBOOK**

The most up-to-date student handbook is available  
online at: [\*\*gotoltc.edu/Student-Handbook\*\*](http://gotoltc.edu/Student-Handbook).

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## **MISSION**

To enrich lives and strengthen the economy by preparing a workforce that is skilled, diverse, and flexible.

## **VISION**

To meet the needs of the future with innovation and excellence.

## **ACCREDITATION AND AFFILIATION**

Lakeshore Technical College is accredited by the Higher Learning Commission (HLC), one of six regional accrediting bodies authorized by the U.S. Department of Education. College accreditation includes approval to offer distance education courses and programs. The commission can be reached at: The Higher Learning Commission, 230 South LaSalle Street, Suite 7-500, Chicago, IL 60604. Phone: 800.621.7440.

## **HISTORY OF LTC**

Lakeshore Technical College (LTC) is a public, nonprofit organization that was established in 1967 as the Lakeshore Vocational, Technical, and Adult Education School. The history of LTC dates back to 1911 when legislation was first enacted to create a state system of vocational schools. In 1912 the district's first vocational school was opened.

The main campus in Cleveland opened in July, 1974. LTC is one of sixteen comprehensive post-secondary technical colleges in Wisconsin operating under the administration of the Wisconsin Technical College System (WTCS) and a local district board.

## **EQUAL OPPORTUNITY ACCESS EMPLOYER/EDUCATOR**

Lakeshore Technical College does not discriminate on the basis of race, color, national origin, sex, disability or age in employment, admissions or its programs or activities. The vice president of human resources and talent development has been designated to handle inquiries regarding the College's nondiscrimination policies.

## Program Number 10-101-1 Associate Degree in Applied Science • Four Terms

### ABOUT THE PROGRAM

Every business and industry, from movie-making to alternative energy, requires people-oriented, analytical, and creative thinkers to address accounting needs. As an accountant, you will have direct input regarding a company's financial health and profitability. A degree in accounting can be the key to rewarding and challenging opportunities in any field of interest.

### PROGRAM OUTCOMES

- Process financial transactions throughout the accounting cycle.
- Analyze financial and business information to support planning and decision making.
- Perform payroll preparation, reporting, and analysis tasks.
- Perform cost accounting preparation, reporting, and analysis tasks.
- Perform organizational and/or individual tax accounting preparation, reporting, and analysis tasks.
- Identify internal controls to reduce risk.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### RELATED PROGRAMS

- Accounting Assistant Technical Diploma Program
- Tax Preparer Certificate

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10103121	Excel - Level 1	1
10101111	Accounting 1	4
10101122	Income Tax	3
10801195	Written Communication	3
10804123	Math with Business Applications	3
		<b>14</b>
<b>Term 2</b>		
10101113	Accounting 2	4
10101128	Income Tax 2	2
10101129	Applied Tax	1
10101135	Payroll Accounting	3
10101180	Spreadsheet Data Management	2
10102160	Business Law 1	3
10101182	Accounting Software Applications	2
		<b>17</b>
<b>Term 3</b>		
10101115	Accounting 3	4
10101125	Accounting Cost 1	4
10801196	Oral/Interpersonal Communication	3
10809196	Introduction to Sociology	3
		<b>14</b>
<b>Term 4</b>		
10101118	Accounting 4	2
10101124	Auditing	2
10101126	Accounting Cost 2	2
10101199	Accounting Capstone	3
10809198	Introduction to Psychology	3
10809195	Economics	3
		<b>15</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ACCOUNTING 1**...provides the learner with the skills to understand and apply accounting principles and procedures useful in any business. Includes the accounting cycle for a service enterprise and a merchandising enterprise, chart of accounts, special journals, ledgers, accruals and deferrals, inventories, and internal controls.

**ACCOUNTING 2**...provides the learner with the skills to transition to more advanced accounting courses with emphasis given to notes and interest, forms of legal entities, stock transactions, depreciation methods, payroll, valuation, and financial analysis. PREREQUISITE: 10101111 Accounting 1

**ACCOUNTING 3**...introduces the learner to intermediate accounting concepts, principles, and applications. Includes financial statements, temporary investments, receivables, equities, current liabilities, present value, and fixed assets. PREREQUISITE: 10101113 Accounting 2

**ACCOUNTING 4**...expands the learner's ability to understand intermediate accounting concepts, principles, and applications, including contingencies, long-term investments, bonds, corporate taxes, leases, and stockholders' equity. PREREQUISITE: 10101115 Accounting 3

**ACCOUNTING CAPSTONE**...provides the learner with the opportunity to synthesize the theory and processes learned in the Accounting program via a capstone project. This course is an exercise in professional analysis and preparedness--reemphasizing the need for professional communication. PREREQUISITES: 101011115 Accounting 3, 10101125 Accounting Cost 1, and 10101135 Payroll Accounting

**ACCOUNTING COST 1**...provides the learner with the skills to understand cost behavior and analysis emphasizing manufacturing enterprises including cost reports, job-order costing, process costing, joint products costing, standard costing and variance analysis. PREREQUISITE: 10101111 Accounting 1

**ACCOUNTING COST 2**...expands the learner's ability to understand accounting for manufacturing enterprises. Includes break-even analysis, differential costs, capital expenditures and budgeting. COREQUISITE: 10101125 Accounting Cost 1

**ACCOUNTING SOFTWARE APPLICATIONS**...prepares the learner to transfer manual accounting skills to computerized accounting software. It includes company setup, expenditure cycle transactions, revenue cycle transactions, general journal transactions, payroll, bank reconciliations, end-of-period procedures, and customization of financial statements. PREREQUISITE: 10101111 Accounting 1 or 10101150 Office Accounting

**APPLIED TAX**...provides the opportunity for the learner to expand tax preparation skills acquired in the Income Tax course and apply those skills to real-life situations in preparing taxes for the local community through the IRS Volunteer Income Tax Assistance(VITA) program. Learners will gain certification from the IRS through the course. PREREQUISITE: 10101122 or 10101123 Income Tax

**AUDITING**...introduces the learner to the fundamentals of auditing. This course involves the evaluation of internal controls including methods of examination and evaluation of accounting records. These evaluations are used to provide objective data to support opinions on the fairness and reliability of accounting records. COREQUISITE: 10101113 Accounting 2

**BUSINESS LAW 1**...provides the learner with the skills to summarize the American legal system; diagram the state/federal court systems; evaluate dispute resolution methods; sequence the civil litigation process; summarize the administrative agencies; differentiate civil and criminal law; apply theories of negligence, intentional tort, and product liability; summarize elements of a contract; assess the validity of a contract; assess third-party rights and available remedies; and summarize Article II of the UCC.

**ECONOMICS**...provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**EXCEL - LEVEL 1**...introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**INCOME TAX**...introduces the learner to federal income tax laws and their underlying principles. Includes filing status, gross income (inclusions and exclusions), deductions and exceptions, tax forms and schedules, the computation of taxes, depreciation and completion of tax forms both manually and computerized.

**INCOME TAX 2**...expands the learner's ability to comprehend the principles of income tax law and calculate federal income tax for business using tax and practical problems. PREREQUISITE: 10101123 Income Tax or 10101122 Income Tax

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PAYROLL ACCOUNTING**...introduces the learner to federal and state payroll laws, calculating for gross and net pay, preparing payroll deductions, maintaining payroll records, and processing payroll in both a manual and computerized setting and preparing quarter-end and year-end reports. COREQUISITE: 10101111 Accounting 1

**SPREADSHEET DATA MANAGEMENT**...provides the learner with intermediate skills to use spreadsheet software to solve accounting and business problems. It focuses on advanced functions and relates skill acquisition to accounting analysis and reporting needs. COREQUISITES: 10101111 Accounting 1 and PREREQUISITE: 10103121 Excel Level 1 or equivalent

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 31-101-1 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

The Accounting Assistant technical diploma will provide students with the skills and confidence necessary to perform entry-level bookkeeping and accounting work for local employers. Accounting Assistant majors may work in a small business and be responsible for various aspects of bookkeeping or work in a larger firm under the supervision of an accountant and specialize in a certain area.

### PROGRAM OUTCOMES

- Process financial transactions throughout the accounting cycle.
- Analyze financial and business information to support planning and decision making.
- Perform payroll preparation, reporting, and analysis tasks.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### RELATED PROGRAMS

- Accounting Associate Degree
- Tax Preparer Certificate

### CONTACT

LTC Career Coach  
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Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10103121	Excel - Level 1	1
10101111	Accounting 1	4
10101122	Income Tax	3
10801195	Written Communication	3
10804123	Math with Business Applications	3
		<b>14</b>
<b>Term 2</b>		
10101113	Accounting 2	4
10101135	Payroll Accounting	3
10101180	Spreadsheet Data Management	2
10101182	Accounting Software Applications	2
10102160	Business Law 1	3
		<b>14</b>

**TOTAL 28**

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**ACCOUNTING 1**...provides the learner with the skills to understand and apply accounting principles and procedures useful in any business. Includes the accounting cycle for a service enterprise and a merchandising enterprise, chart of accounts, special journals, ledgers, accruals and deferrals, inventories, and internal controls.

**ACCOUNTING 2**...provides the learner with the skills to transition to more advanced accounting courses with emphasis given to notes and interest, forms of legal entities, stock transactions, depreciation methods, payroll, valuation, and financial analysis. PREREQUISITE: 10101111 Accounting 1

**ACCOUNTING SOFTWARE APPLICATIONS**...prepares the learner to transfer manual accounting skills to computerized accounting software. It includes company setup, expenditure cycle transactions, revenue cycle transactions, general journal transactions, payroll, bank reconciliations, end-of-period procedures, and customization of financial statements. PREREQUISITE: 10101111 Accounting 1 or 10101150 Office Accounting

**BUSINESS LAW 1**...provides the learner with the skills to summarize the American legal system; diagram the state/federal court systems; evaluate dispute resolution methods; sequence the civil litigation process; summarize the administrative agencies; differentiate civil and criminal law; apply theories of negligence, intentional tort, and product liability; summarize elements of a contract; assess the validity of a contract; assess third-party rights and available remedies; and summarize Article II of the UCC.

**EXCEL - LEVEL 1**...introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**INCOME TAX**...introduces the learner to federal income tax laws and their underlying principles. Includes filing status, gross income (inclusions and exclusions), deductions and exceptions, tax forms and schedules, the computation of taxes, depreciation and completion of tax forms both manually and computerized.

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**PAYROLL ACCOUNTING**...introduces the learner to federal and state payroll laws, calculating for gross and net pay, preparing payroll deductions, maintaining payroll records, and processing payroll in both a manual and computerized setting and preparing quarter-end and year-end reports. COREQUISITE: 10101111 Accounting 1

**SPREADSHEET DATA MANAGEMENT**...provides the learner with intermediate skills to use spreadsheet software to solve accounting and business problems. It focuses on advanced functions and relates skill acquisition to accounting analysis and reporting needs. COREQUISITES: 10101111 Accounting 1 and PREREQUISITE: 10103121 Excel Level 1 or equivalent

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 10-106-6 Associate Degree • Four Terms

### ABOUT THE PROGRAM

Businesses depend on high-quality, accurate information. If you value organization, care about details, and understand the importance of clear communication and current technology skills, developing those talents as an administrative professional may be just what you need to succeed.

### PROGRAM OUTCOMES

- Demonstrate effective workplace communications.
- Apply technology skills to business and administrative tasks.
- Perform routine administrative procedures.
- Manage administrative projects.
- Maintain internal and external relationships.
- Model professionalism in the workplace.
- Plan and conduct training sessions.
- Demonstrate time and stress management skills.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTES

Students must enroll in Keyboarding 10-106-100 or take test out.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10106102	Information Management	3
10106131	Document Formatting	2
10106164	Information Technology Essentials	3
10801195	Written Communication	3
10804123	Math with Business Applications	3
		<b>14</b>
<b>Term 2</b>		
10106130	Office Professionalism	3
10106138	Web Technologies	2
10106124	eCommunications	3
10106166	Microcomputer Business Applications 1	2
10106168	Microcomputer Business Applications 2	2
10801196	Oral/Interpersonal Communication OR 10801198 Speech	3
		<b>15</b>
<b>Term 3</b>		
10106172	MS Project	2
10106177	Career Development	1
10106167	Microcomputer Business Applications 3	3
10106174	Desktop Publishing	2
10106137	Small Business Applications	2
10102110	Introduction to Business	3
10809198	Introduction to Psychology	3
		<b>16</b>
<b>Term 4</b>		
10101150	Office Accounting	3
10106169	Microcomputer Business Applications 4	4
10106160	Internship--Administrative Professional	1
10106192	Training Techniques	2
10106135	Event Planning & Coordination	2
10809195	Economics	3
		<b>15</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**CAREER DEVELOPMENT**...teaches students to develop a job search plan; develop a career portfolio including complete application materials, professional resume, cover letter; practice interview skills, participate in mock interview, and learn the role of social media in career development. COREQUISITE: 10106130 Office Professionalism

**DESKTOP PUBLISHING**...prepares the learner with the basic skills to use page layout software to create professional publications with InDesign and Photoshop. PREREQUISITE: 10106166 Microcomputer Business Applications I

**DOCUMENT FORMATTING**...prepares the learner to keyboard and format business memorandums, business letters, business reports and tabbed columns. The learner will also create tables, create multicolumn documents, use SmartArt, create and modify styles and create ad use templates and building blocks. Emphasis will also be placed on proofreading and editing skills. COREQUISITE: 10106100 Keyboarding with a minimum grade of C or Keyboarding testout equivalent.

**ECOMMUNICATIONS**...prepares the learner to apply proofreading skills -- punctuation, grammar, spelling, word usage, capitalization, number usage--to edit or compose error-free business documents; transcribe and correctly format business documents from dictation, dictate podcasts and other items; exposure to speech recognition functions; take and key meeting minutes; and facilitation of meetings. PREREQUISITE: 10106131 Document Formatting

**ECONOMICS**...provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**EVENT PLANNING & COORDINATION**...prepares the learner to manage preplanning activities for an event, coordinate equipment and facility setup, communicate with outside vendors/suppliers, and conduct follow-up activities. Each student will be required to participate in planning areal-life event and/or assisting an organization through a service learning experience. PREREQUISITE: 10106167 Microcomputer Business Applications 3

**INFORMATION MANAGEMENT**...introduces the student to basic terms, concepts, filing rules, systems (alphabetic and numeric), noncorrespondence filing, new filing equipment, new methods of storing and recording records, and Microsoft Access including the principles and procedures for developing, managing, and maintaining a filing system in a modern office. COREQUISITE: 10106100 Keyboarding or Keyboarding testout equivalent

**INFORMATION TECHNOLOGY ESSENTIALS**...prepares the learner with the skills to use Web 2.0 tools for group collaboration and research emerging technologies. Emphasis in this class will be to develop a plan to implement a new technology in a business environment and train classmates in this new technology.

**INTERNSHIP--ADMINISTRATIVE PROFESSIONAL**...enhances the student's ability to apply technical skills, to work productively, to communicate effectively, and to demonstrate appropriate ethics and behavior in a professional workplace environment. PREREQUISITE: Verification of eligibility by the Internship Coordinator

**INTRODUCTION TO BUSINESS**...provides an introduction to the world of business from both the organizational and managerial viewpoint. It examines areas of business including the business environment, business formation, planning, operations, accounting, marketing, human resource management, and building effective teams.

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**MICROCOMPUTER BUSINESS APPLICATIONS 1**...expands the learner's ability to use Microsoft Word by using advanced table functions; format multiple-page documents with headers, footers, footnotes and endnotes; perform merge operations for correspondence and labels; create customized forms; create a Table of Contents and Index in long documents and create and run Macros. COREQUISITE: 10106131 Document Formatting

**MICROCOMPUTER BUSINESS APPLICATIONS 2**...prepares the learner to create worksheets, utilize formulas and functions, apply formatting functions, print spreadsheet files, edit and manipulate spreadsheets and workbooks, create and modify charts, analyze spreadsheet data, create templates, and apply database features to a spreadsheet. COREQUISITE: 10106100 Keyboarding or Keyboarding testout equivalent

**MICROCOMPUTER BUSINESS APPLICATIONS 3**...will teach students the intermediate topics of Microsoft Office. Students will be presented with material covering the intermediate level of Microsoft Word, Microsoft Excel, Microsoft Access, and Microsoft PowerPoint. Emphasis will be on final projects using all of the software packages, especially Microsoft Access. PREREQUISITE: 10106166 Microcomputer Business Applications 1; 10106102 Info Management, 10106164 Info Technology Essentials, 10106168 Microcomputer Business Applications 2

**MICROCOMPUTER BUSINESS APPLICATIONS 4**...prepares students to work with the advanced features of the Microsoft Office suite, as well as act as an employee in an office simulation environment. Students will build teams, study conflict resolution concepts, develop leadership skills, perform employee reviews, manage budgets, and explore lean culture concepts. Decision-making, professionalism, and work ethic are emphasized throughout the course. PREREQUISITE: 10106167 Microcomputer Business Applications 3

**MS PROJECT**...will teach students how to use the software MS Project as a tool to assist in project management. Creating tasks and a work breakdown structure, scheduling, assigning resources, tracking cost and schedule, leveling of resources, and communicating project details will be covered. In addition, standard project management phases will be covered. PREREQUISITE: 10106168 Microcomputer Business Applications 2

**OFFICE ACCOUNTING**...introduces the learner to the principle of business and personal accounting, including journalizing, posting, year-end adjustments, report preparation and interpretation, payroll, and bank reconciliations. COREQUISITE: 10106168 Microcomputer Business Applications 2

**OFFICE PROFESSIONALISM**...prepares the learner to identify positive attitudes and personality development; develop self-awareness of elements affecting personal and work relationships. Prepares the learner to apply communication and conflict resolution skills; demonstrate effective/efficient work habits and self-management skills; apply business protocol in a culturally diverse international market. Areas of study will also include telephone and customer service techniques, ethics, etiquette and ergonomics.

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**SMALL BUSINESS APPLICATIONS**...will explore upcoming software/hardware trends for small businesses. Applications that are easy access and affordable will be covered, as well as devices such as iPads, SmartPhones, and tablets. Emphasis will be placed on researching and learning the most efficient way to accomplish tasks for a small business.

**TRAINING TECHNIQUES**...develops the skills necessary to present and provide support for training sessions, including organization of materials, procedures, and techniques. PREREQUISITE: 10106167 Microcomputer Business Applications III

**WEB TECHNOLOGIES**...provides a basic understanding of the Web as well as the tools used to create Web pages, blogs, and other features. Reviews social and business Web tools and components.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 30-531-6 Technical Diploma • One Term

### ABOUT THE PROGRAM

Injuries, trauma, sudden illness—medical emergencies can happen at any time, in any place. Survival often depends on the initial care the injured or severely ill person receives at the scene. If you are calm under pressure, compassionate, good at problem solving, and have the desire to help people in need, a career in Emergency Medical Services may be your calling. The Advanced EMT program provides additional knowledge and skills to Wisconsin licensed EMTs. This program focuses on intravenous fluid and medication administration as well as advanced anatomy and physiology for a greater understanding of how the human body responds to injury or illness.

### PROGRAM OUTCOMES

- Prepare for incident response and EMS operations.
- Integrate pathophysiological principles and assessment findings to provide appropriate patient care.
- Demonstrate AEMT skills aligned with established standards and procedures for a variety of patient encounters.
- Communicate effectively with others.
- Demonstrate professional behavior.
- Meet state competencies listed for AEMT certification.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete health requirements.
  - Submit Wisconsin Emergency Medical Technician License.
  - Complete Functional Abilities Statement of Understanding form.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
	<b>Term 1</b>	
30531303	Advanced EMT	4

**TOTAL 4**

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ADVANCED EMT**...program builds on the EMT curriculum, students will learn advanced patient assessment skills, advanced life-support interventions and analysis of body systems and disease processes. After completion students will be able to provide advanced-level assessments and treatment to their patients, including establishment of IVs and administration of IV fluids and medications. This course meets the educational requirement for AEMT licensure in Wisconsin. CONDITION: 305316 Advanced EMT program admissions requirements met

## Program Number 10-006-2 Associate Degree in Applied Science • Four Terms

### ABOUT THE PROGRAM

Successful individuals employed in agribusiness occupations understand the importance of running efficient and profitable operations in the areas of records/business analysis, credit/marketing/purchasing, farm business transfers, goal setting, human relations, crop/soil management, and livestock nutrition/management. Maximize your opportunities for success by increasing your agricultural business and production management knowledge.

### PROGRAM OUTCOMES

- Develop an agri-business management plan.
- Apply economic and marketing strategies to agribusiness industry.
- Apply relevant technologies.
- Create a crop management plan.
- Create a livestock management plan.
- Investigate opportunities in agribusiness.
- Interact as a professional in agribusiness.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTES

Students may alternately choose to earn the Agriculture Technician Technical Diploma after completing Term 1 and Term 2 coursework. In addition, for students who are not seeking a diploma, select courses in this program will provide focused certificates of learning in agribusiness crops and soils, agribusiness financial, and agribusiness livestock. Graduates of the Dairy Herd Management program can earn the Advanced Dairy Herd Management Certificate by taking four additional courses in Terms 3 and 4.

### MPTC CLASSES

This program is shared with Moraine Park Technical College. MPTC district students follow LTC's admissions process; however, they are able to attend classes at a MPTC campus classroom by receiving both in-person and video conference instruction. MPTC Agribusiness Science & Technology program students will be issued a laptop from LTC while learning and applying the program's software applications.

### ONLINE STUDENTS

Out-of-district students and working adults are able to take Term 1 & 2 courses in the online format. Instructor led field trips and off campus activities are not an included requirement. Some activities may also be required.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10-006-112	Farm Business Management	3
10-006-114	Intro to Animal Science	3
10-006-116	Intro to Soil Science	3
10-801-195	Written Communications	3
10-804-123	Math with Business Applications	3
		<b>15</b>
<b>Term 2</b>		
10-006-110	Agricultural Finance	3
10-006-122	Principles of Crop Production	3
10-006-124	Principles of Animal Breeding	3
10-006-134	Animal Records	1
10-006-126	Agribusiness Economics	3
10-006-128	Agribusiness Internship	2
		<b>15</b>
<b>Term 3</b>		
10-006-135	Agriculture Business Accounting	3
10-006-136	Principles of Agronomy	3
10-006-146	Precision Ag Technologies	3
10-006-144	Nutrition Principles	3
10-801-196	Oral/Interpersonal Communication	3
		<b>15</b>
<b>Term 4</b>		
10-006-130	Agricultural Marketing & Sales	3
10-006-140	Legal Aspects of Agribusiness	3
10-006-141	Livestock Production Systems and Management	3
10-809-196	Introduction to Sociology	3
10-809-198	Introduction to Psychology	3
		<b>15</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**AGRIBUSINESS ECONOMICS**...introduces agricultural economic dimensions and impacts, economic principles, calculation of economic returns, and evaluation of economic alternatives. Other topics include capital use, cost appraisal, risk considerations under a variety of economic conditions, farm credit sources, and creditor relationships. COREQUISITE: 10006110 or 10006110OL Agricultural Finance

**AGRIBUSINESS INTERNSHIP**...provides the student a broad variety of specific occupational experiences in the agribusiness industry. Students work with faculty to develop an internship plan and identify, coordinate, and evaluate learning experiences appropriate to the field of study and major career focus of the student. COREQUISITES: 10006110 Agricultural Finance, 10006122 Principles of Crop Production, 10006124 Principles of Animal Breeding, and 10006126 Agribusiness Economics

**AGRICULTURAL FINANCE**...introduces learner to major aspects of agribusiness financial management through extensive problem solving, financial analysis and planning. Students will describe and calculate the sweet 16 ratios, business cash flows, inventory controls, budgeting and borrowing considerations of various types of agribusinesses. Relevant software tools will be introduced. PREREQUISITE: 10006112 Farm Business Management or 10006112OL Farm Business Management – Online

**AGRICULTURAL MARKETING AND SALES**...provides the fundamental principles and methods of marketing agricultural products, marketing processes and agencies, pricing and merchandising of various products, and obtaining bargaining power. Other topics include futures market structure and function; futures commodity contract specifications; futures trading procedures; commodity futures trading strategies; and an introduction to commodity options. PREREQUISITE: 10006110 or 10006110OL Agribusiness Economics OR CONDITION: 190066 Advanced Dairy Herd Management

**AGRICULTURE BUSINESS ACCOUNTING**...provides the learner with a study of accounting systems and methods appropriate for farms and agricultural businesses including the application of basic information-recording skills to allow for the construction of financial statements and filing of income tax forms. Students will produce and analyze financial statements and apply managerial accounting concepts by utilizing relevant financial software. PREREQUISITES: 10006110 Agricultural Finance or 10006110OL Agricultural Finance – Online

**ANIMAL RECORDS**...introduces learner to records management through hands-on applications including the setup and use of computerized record-keeping software, completion of a sample farm record problem utilizing computerized records, a review of various record keeping systems, as well as the selection and implementation of various computerized record programs. Software tools, such as PCDART, CowManager, and DairyCOMP 305, will be utilized. PREREQUISITES: 10006124 or 10006124OL Principles of Animal Breeding OR CONDITION: 190066 Adv Dairy Herd Management

**FARM BUSINESS MANAGEMENT**...provides learner with basic business management practices including the development of a business plan, establishment of short and long range goals, identification and implementation alternatives for reaching goals, and development of strategies to monitor progress. The importance of designing a business mission statement based on goals is emphasized.

**INTRO TO ANIMAL SCIENCE**...provides animal science fundamentals including animal health, animal environments, anatomy and physiology, genetics and reproduction, animal feedstuffs, and animal-related safety.

**INTRO TO SOIL SCIENCE**...provides fundamentals of soil's physical properties, chemical properties, biological properties, soil formation, classification, essential nutrients and soil survey. There will be emphasis on soil and water conservation practices that can be used to reduce soil erosion.

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**LEGAL ASPECTS OF AGRIBUSINESS**...provides students with pertinent information of the legal liabilities and regulations of an agribusiness at the state and federal levels. Course content includes legal descriptions, contractual agreements, employee and consumer rights, insurance, debt collection, as well as bankruptcy and employment protection issues as regulated by DOL, OSHA and DILHR. COREQUISITE: 10006130 or 10006130OL Agricultural Marketing and Sales OR CONDITION: 190066 Advanced Dairy Herd Management

**LIVESTOCK PRODUCTION SYSTEMS AND MANAGEMENT**...engages the student in the exploration and study of a variety of livestock management systems including feeding arrangements, health, marketing considerations, the use of computer systems, personnel issues, and financial impacts of management decisions. PREREQUISITE: 10006114 Intro to Animal Science

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**NUTRITION PRINCIPLES**...introduces learner to the principles of nutrition as presented on a comparative species basis including characteristics, physiological functions, interrelationships, and deficiency symptoms as they pertain to carbohydrates, fats, proteins, mineral elements, and vitamins. PREREQUISITE: 10006113 or 10006113OL Intro to Animal Science OR CONDITION: 190066 Advanced Dairy Herd Management

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PRECISION AG TECHNOLOGIES**...provides the student the opportunity to experience studies in agricultural precision technologies including bio-technologies, application industries, livestock equipment, precision farming, financial resource management, plant protection, sustainable agriculture, environmental impacts of agriculture, agricultural workforce, and agricultural production. COREQUISITES: 10006135 Ag Business Accounting or 10006136 or 10006136OL Principles of Agronomy or OR CONDITION: 190066 Advanced Dairy Herd Management

**PRINCIPLES OF AGRONOMY**...examines agronomy principles for Midwest crops including basic components of plant growth, seed quality, plant parts, plant growth and development, plant classification, maturity systems, and seeding rates. PREREQUISITE: 10006122 Principles of Crop Production or 10006122OL Principles of Crop Production Online

**PRINCIPLES OF ANIMAL BREEDING**...applies genetic principles and reproduction physiology to livestock improvement including elementary population genetics, phenotypic and genotypic effects of selection, selection methods, and systems of mating. PREREQUISITE: 10006114 or 10006114OL Intro to Animal Science

**PRINCIPLES OF CROP PRODUCTION**...provides knowledge of crop and soil nutrient management, including use of both commercial fertilizers and manure. Course topics include purchase or lease options for land, agronomy consulting programs, tillage and conservation plans, soil nutrient plans, cropping plans, managing nutrient waste, crop harvest and storage and production records. PREREQUISITE: 10006116 Intro to Soil Science or 10006116OL Intro to Soil Science Online

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 31-006-2 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

Successful individuals employed in agriculture occupations need a basic understanding of industry specific financial operations, goal-setting, human relations, crops and soil management, as well as livestock fundamentals.

### PROGRAM OUTCOMES

- Apply relevant technologies.
- Investigate opportunities in agribusiness.
- Interact as a professional in agribusiness.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTES

This diploma is embedded within the Agribusiness Science & Technology Associate degree. This means that Agriculture Technician graduates have the opportunity to also complete their associate degree with one more year of college.

### MPTC CLASSES

This program is shared with Moraine Park Technical College. MPTC district students follow LTC's admissions process; however, they are able to attend classes at a MPTC campus classroom by receiving both in-person and video conference instruction. MPTC Agriculture Technician program students will be issued a laptop from LTC while learning and applying the program's software applications.

### ONLINE STUDENTS

Out-of-district students and working adults, as well as high school students are able to take courses in the online format. Instructor led field trips and off campus activities are not an included requirement.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10-006-112	Farm Business Management	3
10-006-114	Intro to Animal Science	3
10-006-116	Intro to Soil Science	3
10-801-195	Written Communications	3
10-804-123	Math with Business Applications	3
		<b>15</b>
<b>Term 2</b>		
10-006-110	Agricultural Finance	3
10-006-122	Principles of Crop Production	3
10-006-124	Principles of Animal Breeding	3
10-006-134	Animal Records	1
10-006-126	Agribusiness Economics	3
10-006-128	Agribusiness Internship	2
		<b>15</b>
		<b>TOTAL 30</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**AGRIBUSINESS ECONOMICS**...introduces agricultural economic dimensions and impacts, economic principles, calculation of economic returns, and evaluation of economic alternatives. Other topics include capital use, cost appraisal, risk considerations under a variety of economic conditions, farm credit sources, and creditor relationships. COREQUISITE: 10006110 or 10006110OL Agricultural Finance

**AGRIBUSINESS INTERNSHIP**...provides the student a broad variety of specific occupational experiences in the agribusiness industry. Students work with faculty to develop an internship plan and identify, coordinate, and evaluate learning experiences appropriate to the field of study and major career focus of the student. COREQUISITES: 10006110 Agricultural Finance, 10006122 Principles of Crop Production, 10006124 Principles of Animal Breeding, and 10006126 Agribusiness Economics

**AGRICULTURAL FINANCE**...introduces learner to major aspects of agribusiness financial management through extensive problem solving, financial analysis and planning. Students will describe and calculate the sweet 16 ratios, business cash flows, inventory controls, budgeting and borrowing considerations of various types of agribusinesses. Relevant software tools will be introduced. PREREQUISITE: 10006112 Farm Business Management or 10006112OL Farm Business Management – Online

**ANIMAL RECORDS**...introduces learner to records management through hands-on applications including the setup and use of computerized record-keeping software, completion of a sample farm record problem utilizing computerized records, a review of various recordkeeping systems, as well as the selection and implementation of various computerized record programs. Software tools, such as PCDART, CowManager, and DairyCOMP 305, will be utilized. PREREQUISITES: 10006124 or 10006124OL Principles of Animal Breeding OR CONDITION: 190066 Advanced Dairy Herd Mngmt

**FARM BUSINESS MANAGEMENT**...provides learner with basic business management practices including the development of a business plan, establishment of short and long range goals, identification and implementation alternatives for reaching goals, and development of strategies to monitor progress. The importance of designing a business mission statement based on goals is emphasized.

**INTRO TO ANIMAL SCIENCE**...provides animal science fundamentals including animal health, animal environments, anatomy and physiology, genetics and reproduction, animal feedstuffs, and animal-related safety.

**INTRO TO SOIL SCIENCE**...provides fundamentals of soil's physical properties, chemical properties, biological properties, soil formation, classification, essential nutrients and soil survey. There will be emphasis on soil and water conservation practices that can be used to reduce soil erosion.

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**PRINCIPLES OF ANIMAL BREEDING**...applies genetic principles and reproduction physiology to livestock improvement including elementary population genetics, phenotypic and genotypic effects of selection, selection methods, and systems of mating. PREREQUISITE: 10006114 or 10006114OL Intro to Animal Science

**PRINCIPLES OF CROP PRODUCTION**...provides knowledge of crop and soil nutrient management, including use of both commercial fertilizers and manure. Course topics include purchase or lease options for land, agronomy consulting programs, tillage and conservation plans, soil nutrient plans, cropping plans, managing nutrient waste, crop harvest and storage and production records. PREREQUISITE: 10006116 Intro to Soil Science or 10006116OL Intro to Soil Science Online

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 31-405-1 Technical Diploma • Four Terms

### ABOUT THE PROGRAM

If you love cars and are seeking a career that offers challenging work, provides abundant opportunities for growth and advancement, and rewards hard work and dedication, think seriously about the auto collision industry. Pursuing a career in the collision industry can take your interests and talents to the next level by developing highly sought-after skills. There has never been a better time to consider a career in an industry with such excellent growth potential. Jobs in the collision industry will never be outsourced, and this job saves lives by returning safe and properly repaired vehicles to the road.

### PROGRAM OUTCOMES

- Straighten collision damaged sheet metal.
- Refinish automobile body parts.
- Replace non-structural panels and parts.
- Perform auto collision welding procedures.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete the OSHA Medical Evaluation questionnaire.
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.
- Students purchase Snap-On tools as part of their tuition in Terms 1, 2 and 3 at an approximate total cost of \$2,300.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

- The program is certified by NATEF (National Automotive Technicians Education Foundation).
- Students are prepared and eligible for the I-CAR Welding Certification Testing.
- Students are well prepared to take the ASE (Automotive Service Excellence) Exam.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
31405320	Introduction to Auto Collision	1
31405322	Auto Collision Panel Repair	2
31405304	Auto Collision Electrical Mechanical	3
31405324	Auto Collision Plastic & Composite Panel Repair	2
31405326	Auto Collision Panel Replacement & Alignment	2
31801359	Communication Skills for the Workplace	2
		<b>12</b>
<b>Term 2</b>		
31405340	Introduction to Auto Refinishing	1
31405332	Auto Collision Wire Welding	2
31405342	Auto Refinishing Masking/Preparation	2
31405346	Auto Refinishing Color Matching/Blending	2
31405348	Auto Refinishing Water Borne Systems	2
31405344	Auto Refinishing Multiple Panel	2
31405311	Sheet Metal Fabrication	2
		<b>13</b>
<b>Term 3</b>		
32405333	Collision Center Best Practices	1
31405308	Collision Estimating & Repair Planning	2
32405313	Hybrid/Electric Vehicle Safety	1
32405325	Cycle Time and Shop Production 1	4
32405329	Cycle Time and Shop Production 2	4
		<b>12</b>
<b>Term 4</b>		
31405341	Structural Analysis	1
32405306	Vehicle Anchoring & Structural Repair	3
32405309	Structural Steel Replacement	3
31405347	Custom Painting	1
31405349	MIG Aluminum Welding & Panel Repair	3
32405317	Internship - Auto Collision	1
		<b>12</b>
		<b>TOTAL 49</b>

## *Curriculum Modifications Pending State Approval*

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**AUTO COLLISION ELECTRICAL MECHANICAL**...prepares the learner to examine and troubleshoot basic electrical circuits, interpret electrical circuit diagrams, service automotive batteries, lighting systems, and passive restraint systems. The learner will perform soldering and splicing of electrical components. Students will also learn how to diagnose and service automotive air conditioning systems and have the opportunity to become EPA certified. COREQUISITE: 31405320 Intro to Auto Collision

**AUTO COLLISION PANEL REPAIR**...provides the learner with hands-on activities to gain the skills necessary for metal finishing, panel straightening, application of body fillers, and use of hydraulics to straighten panels and make body panel adjustments. COREQUISITE: 31405320 Intro to Auto Collision

**AUTO COLLISION PANEL REPLACEMENT AND ALIGNMENT**...prepares the student to apply straightening, welding, restoring, corrosion protection, alignment, and panel replacement skills. COREQUISITE: 31405320 Intro to Auto Collision

**AUTO COLLISION PLASTIC AND COMPOSITE PANEL REPAIR**...prepares the learner to work on repairing damaged plastic panels using adhesives and airless welding techniques. The repair of SMC, FRP, ABS, TPO, and other popular plastics are taught. COREQUISITE: 31405320 Intro to Auto Collision

**AUTO COLLISION WIRE WELDING**...introduces the learner to information and skills necessary to safely operate gas metal arc welding, aluminum welding, and oxyacetylene cutting as it applies to auto collision. Upon completion, the student is prepared to take the I-CAR steel weld qualification test. COREQUISITE: 31405340 Intro to Auto Refinishing

**AUTO REFINISHING COLOR MATCHING/BLENDING**...prepares the student with an understanding of color movement using the color wheel and the differences in spray gun technique as it applies to blending and how to solve paint color matching problems. COREQUISITE: 31405340 Intro to Auto Refinishing

**AUTO REFINISHING MASKING/PREPARATION**...enhances the learner's ability to understand automotive finishes and the equipment, paint area, and refinish area and to understand a thorough understanding of surface preparation as it relates to vehicle refinishing. COREQUISITE: 31405340 Intro to Auto Refinishing

**AUTO REFINISHING MULTIPLE PANEL**...provides the learner with the skills to spray complete panels and vehicles using the latest spray technology and equipment, troubleshoot paint problems, and detail the finish to a preaccident condition. COREQUISITE: 31405344 Intro to Auto Refinishing

**AUTO REFINISHING WATER BORNE SYSTEMS**...provides the learner with specific knowledge and skills necessary to work with water borne products. Learners will be introduced to application methods, mixing and other considerations unique to water borne refinishing systems. COREQUISITE: 31405340 Intro to Auto Refinishing

**COLLISION CENTER BEST PRACTICES**...provides learners with the knowledge and skills needed to provide excellent customer service. Learn skills to identify and resolve concerns in a professional manner. Build positive customer relationships for collision repair businesses. PREREQUISITE: 32405348 Auto Ref Water Borne System

**COLLISION ESTIMATING AND REPAIR PLANNING**...introduces the learner to various damage appraisal methods and provides the skills necessary to create computerized estimates and work orders with an emphasis on customer service. PREREQUISITE: 31405348 Auto Refinishing Water Borne Systems

**COMMUNICATION SKILLS FOR THE WORKPLACE**...prepares the student to develop paper job-search tools and job-related writing skills to increase 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.

**CUSTOM PAINTING**...introduces the learner to many popular custom painting techniques. Students will have an overview of hand painted pinstripe applications, multi-stage candy coat finishes, using an airbrush, masking methods, and equipment cleaning and maintenance. PREREQUISITE: 31405332 Auto Collision Wire Welding

**CYCLE TIME AND SHOP PRODUCTION 1**...prepares learners to enter the workforce by applying their practical skills and performing live customer work. This course reinforces the team approach as it applies to shop production and repair work performed by students and will be assessed using real-world criteria. PREREQUISITE: 32405348 Auto Refinishing Water Borne Systems

**CYCLE TIME AND SHOP PRODUCTION 2**...learners prepare to enter the workforce by applying their practical skills and performing live customer work. Course reinforces cycle time and shop production by performing vehicle repairs using specialized cells and the assembly line method. Repair work performed by students will be assessed using real-world criteria. PREREQ: 32405348 Auto Refinishing Water Borne Systems

**HYBRID/ELECTRIC VEHICLE SAFETY**...provides the learner with the knowledge and skills necessary in order to properly and safely repair vehicles equipped with high voltage systems. Learners will shut down and initiate high voltage vehicle systems, assess damaged components unique to hybrid and electric vehicles and learn the fundamentals of how hybrid and electric vehicle systems operate. PREREQUISITE: 32405348 Auto Refinishing Water Borne Systems

**INTERNSHIP - AUTO COLLISION**...requires students to complete 72 hours (1 credit) of work in an automotive collision repair facility. Students are responsible for seeking and obtaining the internship position. Course requirements include maintaining a log of work activities, identifying and receiving approval from the job supervisor and instructor, and completing a work-related project. Students may meet periodically at LTC. PREREQUISITE: 32405329 Cycle Time & Shop Production 2

**INTRODUCTION TO AUTO COLLISION**...introduces the learner to the auto collision course procedures, practices, and grading policy and develops safe work habits and attitudes. Many of the hand and power tools are identified.

**INTRODUCTION TO AUTO REFINISHING**...introduces the learner to auto collision and refinishing course procedures, practices, and grading policy and develops safer work habits and attitudes. COREQUISITE: 31405320 Intro to Auto Collision

**MIG ALUMINUM WELDING AND PANEL REPAIR**...provides the learner with skills to complete repair procedures unique to vehicles with aluminum structures using specialty tools and methods. OEM repair methods from major automotive manufacturers are taught and assessed in this course. Learners have the opportunity to earn the I-CAR WCA03 Aluminum Weld Test Certification. PREREQUISITE: 31405332 Auto Collision Wire Welding

**SHEET METAL FABRICATION**...prepares learners to develop metal-working skills to the next level in this advanced auto-body course. Students will learn to shape steel vehicle panels using the English wheel, power hammer, and bead roller as well as other metal shaping tools. Learners have the opportunity to create their own unique parts and designs. COREQUISITE: 31405340 Intro to Auto Refinishing

**STRUCTURAL ANALYSIS**...provides the learner with knowledge and hands-on experiences in measuring and analyzing frames, body panels, and alignments using tape measures, tram and self-centering gauges, and a computerized measuring system. PREREQUISITE: 31405332 Auto Collision Wire Welding

**STRUCTURAL STEEL REPLACEMENT**...prepares the student to apply steel mig welding skills combined with steel sectioning methods to perform proper steel sectioning procedures. Learners will perform sectioning procedures approved by OEM manufacturers and prepare to earn the I-CAR SPS05 Steel Sectioning Certification. PREREQUISITE: 32405332 Auto Collision Wire Welding

**VEHICLE ANCHORING AND STRUCTURAL REPAIR**...provides the learner with skills to use state of the art Car-O-liner equipment such as the Evolution jig type anchoring systems and the B73 truck clamp system to properly anchor vehicles for structural repairs. Learners will gain valuable experience using the Car-O-Liner vision electromechanical measuring system. Structural repairs will be made to vehicles according to OEM guidelines. PREREQUISITE: 32405332 Auto Collision Wire Welding

## Program Number 31-404-3 Technical Diploma • Four Terms

### ABOUT THE PROGRAM

Most of us place great value on owning and operating our own vehicles. Our independence stems from our ability to jump in our cars and trucks and go wherever we want, whenever we want. When our independence is threatened because our vehicles aren't working properly, the first person we seek is a qualified automotive maintenance technician. If you're mechanically talented, like to solve problems, and enjoy working with people, success in the automotive maintenance field may be just down the road for you.

### PROGRAM OUTCOMES

- Practice safe techniques when servicing automobiles
- Estimate automotive repair and order replacement parts
- Communicate and respond to customers' needs
- Use tools and equipment to diagnose and service automobile systems including:
  - Automotive internal combustion engines
  - Automotive transmission/transaxle systems
  - Automotive manual drive train and axle systems
  - Automotive steering and suspension steering systems
  - Automotive brake systems
  - Automotive electrical/electronic systems
  - Automotive heating and air conditioning systems
  - Engine performance systems
- Demonstrate professionalism appropriate for the auto service industry
- Perform maintenance and light repair of automotive steering and suspension systems
- Perform maintenance and light repair of automotive brake systems
- Perform maintenance and light repair of automotive electrical and electronic systems

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.
- Students purchase Snap-On tools as part of their Term 1, 2 and 3 enrollments. The total tool cost is approximately \$2,400.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTES

You'll need to drive manual transmissions and have a valid driver's license. This program is certified by NATEF (National Automotive Technicians Education Foundation). Students are well-prepared to take the ASE (Automotive Service Excellence) Exam.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
31809362	Psychology for Life	1
10106116	Computer Essentials	1
31404301	Auto Orientation and Safety	1
31442345	Auto Servicing Welding	1
31404370	Auto Brakes	3
31404312	Auto Mechanical Math Skills*	1
31404311	Auto Electrical Math Skills 1	1
31404310	Auto Introduction to Electricity 2	1
31404313	Auto Electricity Fundamentals 3	2
		<b>12</b>
<b>Term 2</b>		
31404372	Auto Suspension and Steering	3
31404376	Auto Engine Repair	4
31404323	Auto Wiring Mechanics 4	2
31404326	Auto Basic Electrical 5	3
		<b>12</b>
<b>Term 3</b>		
31801359	Communication Skills for the Workplace	2
31404328	Auto Air Conditioning	2
31404316	Differential and Manual Transmissions	3
31404327	Auto Electrical Systems 6	2
31404329	Auto Engine Performance 1	3
		<b>12</b>
<b>Term 4</b>		
31404334	Automatic Transmissions	5
31404333	Auto Engine Performance 2	2
31404385	Auto Engine Performance 3	5
		<b>12</b>
		<b>TOTAL 48</b>

\*A math assessment placement test is required.

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**AUTO AIR CONDITIONING**...provides the student with a thorough knowledge of the operation, diagnosis, and repair procedures of heating and air conditioning systems used by domestic and import automotive manufacturers. U.S. EPA, Section 609, certification is included. PREREQUISITE: 31404301 Auto Orientation & Safety

**AUTO BASIC ELECTRICAL 5**...prepares the learner to diagnose and repair computer-controlled circuits. Learners will diagnose automotive networks, computerized body controls, and supplemental restraint systems. COREQUISITE: 31404323 Auto Wiring Mechanics 4

**AUTO BRAKES**...prepares the student with the theory of mechanical and hydraulic components of domestic and imported automotive braking systems, including antilock braking systems and traction controls; servicing techniques of new systems and procedures; and basic braking systems with hands on application. COREQUISITE: 31404301 Auto Orientation & Safety

**AUTO ELECTRICAL MATH SKILLS 1**...provides the learner with the required math skills for automotive electrical troubleshooting. Students will use decimals, symbols, and formulas to quantify electricity. COREQUISITE: 31404301 Auto Orientation & Safety

**AUTO ELECTRICAL SYSTEMS 6**...prepares the learner to diagnose security, comfort, and convenience systems. Operation of collision avoidance and other driver aids will be covered. PREREQUISITE: 31404326 Auto Basic Electrical 5

**AUTO ELECTRICITY FUNDAMENTALS 3**...prepares the learner to troubleshoot inoperative electrical circuits using various tools and methods. Learners will learn to quantify electrical behavior in simple circuits using a digital volt ohm meter. COREQUISITE: 31404310 Auto Intro to Electricity 2

**AUTO ENGINE PERFORMANCE 1**...introduces the learner to the fundamentals of engine operation and lab scopes. Prepares the learner to diagnose and repair gasoline engine fuel, ignition, and performance concerns. COREQUISITE: 31404327 Auto Electrical Systems 6

**AUTO ENGINE PERFORMANCE 2**...prepares the learner to diagnose and repair basic computerized engine control feedback systems using specialized diagnostic equipment. PREREQUISITE: 31404329 Auto Engine Performance 1

**AUTO ENGINE PERFORMANCE 3**...prepares the learner to diagnose and repair advanced powertrain systems using specialized diagnostic equipment. Engine performance concerns on turbocharged, non-turbocharged, diesel, and hybrid engines will be addressed. COREQUISITE: 31404384 Auto Engine Performance 2

**AUTO ENGINE REPAIR**...prepares the student for engine reconditioning and related component repair procedures, engine rebuilding and cooling and lubrication systems, and service procedures. PREREQUISITE: 31404301 Auto Orientation & Safety

**AUTO INTRODUCTION TO ELECTRICITY 2**...introduces the learner to the characteristics and behaviors of electricity and electromagnetism. Prepares the learner to use basic electrical terms, tools, and theory for troubleshooting automotive electrical circuits. COREQUISITE: 31404311 Auto Electrical Math Skills 1

**AUTO MECHANICAL MATH SKILLS**...prepares the learner with the required math skills needed for the automotive servicing industry. Students will perform a variety of measurements using U.S. Standard and metric measuring instruments. Conversions, units of measure, and calculations will also be discussed. COREQUISITE: 31404301 Auto Orientation & Safety and Math placement assessment equivalent

**AUTO ORIENTATION AND SAFETY**...prepares the learner to work effectively and efficiently in the automotive lab. Shop safety and proper procedures are emphasized. CONDITION: Automotive Maintenance Technician

**AUTO SERVICING WELDING**...prepares the student to make repairs commonly practiced in the auto industry, including safe techniques of brazing, cutting, SMAW, and GMAW. COREQUISITE: 31404301 Auto Orientation & Safety

**AUTO SUSPENSION AND STEERING**...prepares the student to perform testing and replacement procedures of suspension components; front and four-wheel alignment procedures for automotive and light trucks; and service procedures, including power steering diagnosis and repair. PREREQUISITE: 31404301 Auto Orientation & Safety

**AUTO WIRING MECHANICS 4**...prepares the learner to interpret automotive wiring diagrams and troubleshoot automotive circuits. Learners will utilize wiring diagrams to diagnose inoperative lighting, starting, and charging systems. PREREQUISITE: 31404313 Auto Electricity Fundamentals 3

**AUTOMATIC TRANSMISSIONS**...prepares the learner to develop skills in the operation and servicing of automatic transmissions. The learner will disassemble, inspect, repair and reassemble various automatic transmissions and learn proper procedures for diagnosis of these assemblies. PREREQUISITE: 31404301 Auto Orientation & Safety

**COMMUNICATION SKILLS FOR THE WORKPLACE**...prepares the student to develop paper job-search tools and job-related writing skills to increase 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.

**COMPUTER ESSENTIALS**...covers computer technology and basic computer skills for the student who is just starting classes at LTC. This course will include topics related to uses of computer hardware and software, internet searching, e-mail, MyLTC, online courses, and an introduction to documents and presentations.

**DIFFERENTIALS AND MANUAL TRANSMISSIONS**...prepares the learner with a thorough knowledge of the operation, diagnosis, and repair procedures of differential assemblies and manual transmissions. The learner will disassemble, inspect and reassemble differentials and various manual transmissions. PREREQUISITE: 31404301 Auto Orientation & Safety

**PSYCHOLOGY FOR LIFE**...prepares the learner to select behavior modification techniques, demonstrate techniques for enhancing memory, analyze expressions of emotion, use conflict for common good, employ techniques to reduce conflict/frustration, use several methods to reduce stress, interpret personality types, ascertain contributors to perception, and apply methods of problem-solving.

## Program Number 10-170-1

### Associate Degree in Applied Science • Two Years Plus Summer School

#### ABOUT THE PROGRAM

You've read the scrolling captions for the hearing-impaired on your TV screen. The person providing instantaneous text of programs is trained in realtime transcription techniques and technology. These skills can also be used to provide CART (Communication Access Realtime Translation) for hearing-impaired students in educational as well as public settings. If you're an excellent listener, have strong language and communication skills, are committed to accuracy and able to work on deadline, a career in broadcast captioning may be a perfect fit for your talents.

#### PROGRAM OUTCOMES

- Utilize machine shorthand with a computer-aided transcription system to write the spoken word and produce a transcript.
- Perform as a realtime reporter with skills to obtain certification.
- Demonstrate knowledge of legal and medical concepts and terminology.
- Apply the NCRA Code of Professional Ethics and Certification Standards.

#### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

#### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

#### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete Notification of Laptop/Steno Rental Equipment form.
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

#### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

#### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

#### SPECIAL NOTE

Students are required to rent a stenograph machine and laptop computer through the rental program available at LTC. LTC's Broadcast Captioning program follows the National Court Reporters Association (NCRA) standards. Upon completion of this curriculum, the student will have dual degrees in Court Reporting and Broadcast Captioning.

#### GRADUATION REQUIREMENT

Three 5-minute timings must be passed in each of the following categories with a minimum of 95 percent accuracy:

- Two-voice testimony @ 225 wpm
- Jury charge @ 200 wpm
- Literary @ 180 wpm
- Broadcast Captioning Internship of 40 hours must be taken within 18 months of graduation.

#### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10170106	Realtime Reporting 1	5
10170804	Realtime Reporting 1 Lab	1
10170144	Realtime Reporting Orientation	1
10170160	Legal Terminology	1
10801195	Written Communication OR 10801136 English Composition 1	3
10809198	Introduction to Psychology	3
		<b>14</b>
<b>Term 2</b>		
10170105	Realtime Reporting 2	5
10170805	Realtime Reporting 2 Lab	1
10170159	Realtime Reporting Technology	2
10170184	English for Realtime Reporters	1
10801196	Oral/Interpersonal Communication OR 10801198 Speech	3
		<b>12</b>
<b>Term 3 (Summer)</b>		
10170108	Realtime Reporting Speed Development	2
10170104	Broadcast Captioning Research Methods	1
10809122	Introduction To American Government or 10809172 Introduction to Diversity Studies Skillbuilding 1, 2, or 3 (optional)	3
		<b>6</b>
<b>Term 4</b>		
10170109	Literary 1 - Advanced	2
10170128	Jury Charge 1 - Advanced	2
10170156	Testimony 1 - Advanced	3
10170171	Medical Reporting & Terminology	2
10804123	Math with Business Applications OR 10804107 College Math OR 10806112 Principles of Sustainability	3
10170161	Realtime Reporting Technology Advanced	2
		<b>14</b>
<b>Term 5</b>		
10170145	Court Reporting Internship	1
10170111	Literary 2 - Advanced	2
10170129	Jury Charge 2 - Advanced	2
10170157	Testimony 2 - Advanced	3
10170146	Four Voice	1
10170141	Court Reporting Procedures	2
10170101	Captioning/CART	3
		<b>14</b>
<b>Term 6</b>		
10170143	Internship in Broadcast Captioning/CART	1

**TOTAL 61**

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**BROADCAST CAPTIONING RESEARCH METHODS...**prepares the learner to prepare (research) prior to broadcast, conduct research in preparation for broadcasting international news, national news, local news, weather reports, sporting events, writing geographical terms, utilize culturally diverse terminology, and create job dictionaries.

**CAPTIONING/CART...**prepares student to write Realtime dictation at 180 wpm, analyze deaf culture, analyze captioning/CART procedures, prepare for broadcast production, configure CAT software for captioning, set up captioning hardware, operate the CAT system in captioning mode, utilize proper technology to control caption spacing and placement, write a news broadcast for 30 minutes non-stop, configure CART software, and analyze the contents of the CART provider's manual. PREREQUISITE: 10170156 Testimony 1-Adv and 10170109 Literary 1-Adv & COREQ: 10170157 Testimony 2-Adv

**COURT REPORTING INTERNSHIP...**prepares student to write machine shorthand verbatim for a min of 40 hrs of actual writing time in the courtroom, classroom, & deposition environment under the supervision of a working reporter; prepare a 40-pg transcript, and summarize the internship experience in a narrative report. PREREQ: 10106108 or 10170108 Realtime Rptg Speed Dev, 10106128 or 10170128 Jury Chrg 1-Adv, 10106109 or 10170109 Lit 1-Adv, 10106156 or 10170156 Test 1-Adv & COREQ: 10106129 or 10170129 Jury Chrg 2-Adv, 10106111 or 10170111 Lit 2-Adv & 10106157 or 10170157 Test 2-Adv

**COURT REPORTING PROCEDURES...**introduces the student to reporting procedures for which reporters are responsible in the courtroom, deposition, and real-time reporting environments, including preparing salable transcripts, researching legal citations, and developing professional development plans.

**ENGLISH FOR REALTIME REPORTERS...**enhances the student's ability to use proper English grammar, spelling, punctuation, capitalization, and vocabulary techniques in the transcription of the spoken word.

**FOUR VOICE...**prepares student to write four-voice testimony from material dictated at a min speed of 160 wpm for 5 min with a min of 95% accuracy. PREREQ: 10170156 Test 1-Adv

**INTERNSHIP IN BROADCAST CAPTIONING/CART...**prepares learner to caption live broadcast, use television broadcast terminology, describe television broadcast operations, and provide CART services to a hearing-impaired person. Students must be writing at 180 WPM literary prior to enrolling in this course. PREREQ: 10106108 or 10170108 Realtime Rptg Speed Dev, 10106128 or 10170128 Jury Chrg 1-Adv, 10106109 or 10170109 Lit 1-Adv, 10106156 or 10170156 Test 1-Adv & COREQ: 10106129 or 10170129 Jury Chrg 2-Adv, 10106111 or 10170111 Lit 2-Adv & 10106157 or 10170157 Test 2-Adv

**INTRODUCTION TO AMERICAN GOVERNMENT...**introduces American political processes and institutions. It focuses on rights and responsibilities of citizens and the process of participatory democracy. Learners examine the complexity of the separation of powers and checks and balances. It explores the role of the media, interest groups, political parties and public opinion in the political process. It also explores the role of state and national government in our federal system. COREQUISITE: 10838105 Intro to Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**JURY CHARGE 1 - ADVANCED...**prepares the student to write jury charge material at 160 WPM for 3 minutes and transcribe at least 3 timings with a minimum of 95 percent accuracy and prepare salable transcripts. PREREQUISITE: 10170121 Jury Charge 1-Beginner or 10106121 Jury Charge 1-Beginner or CONDITION: Min of 130 WPM met

**JURY CHARGE 2 - ADVANCED...**prepares learner to write jury charge material at 200 WPM for 5 minutes and transcribe at least 3 timings with a minimum of 95 percent accuracy and prepare salable transcripts. PREREQUISITE: 10170122 Jury Charge 2 - Beginner or 10106122 Jury Charge 2-Beginner or CONDITION: Min of 180 WPM met

**LEGAL TERMINOLOGY...**provides the student with the ability to spell, pronounce, and define legal terms.

**LITERARY 1 - ADVANCED...**prepares the learner to write literary material at 150 words per minute for 3 minutes and transcribe at least 3 timings with a minimum of 95 percent accuracy, write and read back current events dictation, and prepare salable transcripts. PREREQUISITE: 10170113 Literary 1 - Beginner or 10106113 Literary 1 - Beginner or CONDITION: Minimum of 130 WPM met

**LITERARY 2 - ADVANCED...**prepares the learner to write literary material at 180 words per minute for 5 minutes and transcribe at least 3 timings with a minimum of 95 percent accuracy, write and read back current events dictation, and prepare salable transcripts. PREREQUISITE: 10170114 Literary 2 - Beginner or 10106114 Literary 2 - Beginner or CONDITION: minimum of 160 words per minute met

**MATH WITH BUSINESS APPLICATIONS...**covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent & COREQ: 10838105 Intro Reading & Study Skills or Reading placement assessment equiv or CONDITION: 610061 Agribusiness/Agronomy Basic program adm req met

**MEDICAL REPORTING/TERMINOLOGY...**prepares the student to write medical terminology in machine shorthand using appropriate medical terminology from material dictated at a minimum speed of 150 wpm for 5 minutes with a minimum of 95 percent accuracy. The student will research medical information, prepare salable transcripts, and submit timings. COREQUISITE: 10170156 Testimony 1 - Advanced or 10106156 Testimony 1 – Advanced

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**REALTIME REPORTING 1...**prepares the learners to use machine shorthand to write consonants, vowels, numbers, multi-syllabic words, multi-consonant words, punctuation and special symbols, short forms and phrases, words in their singular and plural forms, and prefixes and suffixes. Concurrent registration in Realtime Reporting 1 Lab is required. CONDITION: 101701 Broadcast Captioning or 101702 Court Reporting or 101061 Judicial Reporting program requirements met

**REALTIME REPORTING 2...**prepares the learner to write multi-syllabic words; punctuation and special symbols, short forms and phrases, prefixes and suffixes; numbers, frequently used words and phrases, contractions using the Z-rule, the "Flagged Alphabet," apply realtime conflict elimination principles, apply realtime theory and write dictation using a realtime theory at a minimum speed of 100 wpm. Concurrent registration in Realtime Reporting 2 Lab is required. PREREQUISITES: 10170106 Realtime Reporting 1 or 10106104 Realtime Reporting 1 and 10170804 Realtime Reporting 1 Lab or 10106804 Realtime Reporting 1 Lab

**REALTIME REPORTING ORIENTATION...**prepares the student to use computer-assisted, real-time transcription software, Windows, e-mail, a steno machine, and a laptop in writing machine shorthand in court reporting and to complete and submit required coursework. CONDITION: 101701 Broadcast Captioning or 101702 Court Reporting program requirements met

**REALTIME REPORTING SPEED DEVELOPMENT...**further develops skills acquired in Realtime Reporting 2 on literary and testimony material beginning at 100 wpm. Scheduled during the summer term, students must pass two, 3-minute timings at a minimum speed of 110 words per minute. PREREQUISITE: 10170105 Realtime Reporting 2 or 10106105 Realtime Reporting 2 and 10170805 Realtime Reporting Lab 2

**TESTIMONY 1 - ADVANCED...**prepares the learner to write 2-voice testimony material at 160 words per minute for 3 minutes and transcribe at least 3 timings with a minimum of 95 percent accuracy and prepare salable transcripts. PREREQUISITE: 10170153 Testimony 1 - Beginner or 10106153 Testimony 1 - Beginner or CONDITION: Minimum of 130 WPM met

**TESTIMONY 2 - ADVANCED...**prepares the learner to write 2-voice testimony material at 225 words per minute for 5 minutes and transcribe at least 3 timings with a minimum of 95 percent accuracy and prepare salable transcripts. PREREQUISITE: 10170154 Testimony 2 - Beginner or 10106154 Testimony 2 - Beginner or CONDITION: Minimum of 180 WPM

**REALTIME REPORTING 1 LAB...**prepares the learner to use machine shorthand to write consonants, vowels, numbers, multi-syllabic words, multi-consonant words, punctuation and special symbols, short forms and phrases, words in their singular and plural forms, and prefixes and suffixes. Concurrent registration in Realtime Reporting 1 is required. COREQUISITE: 10170106 Realtime Reporting 1 or 10106104 Realtime Reporting 1 and CONDITION: 101701 Broadcast Captioning or 101702 Court Reporting or 101061 Judicial Reporting program requirement met

**REALTIME REPORTING 2 LAB...**expands the learner's ability to write multi-syllabic words; punctuation and special symbols, short forms and phrases, prefixes and suffixes; numbers, frequently used words and phrases, contractions using the Z-rule, the "Flagged Alphabet," apply realtime conflict elimination principles, apply realtime theory and write dictation using a realtime theory. Concurrent registration in Realtime Reporting 2 is required. PREREQUISITE: 10170106 Realtime Reporting 1 and 10170804 Realtime Reporting 1 Lab and COREQUISITES: 10170105 Realtime Reporting 2 or 10106105 Realtime Reporting 2

**REALTIME REPORTING TECHNOLOGY...**prepares the student to use CAT (Computer-Assisted Transcription) and real-time software; build personal dictionaries; and read, translate, and edit transcripts. Students are introduced to real-time translation procedures in court, depositions, captioning, and educational environments.

**REALTIME REPORTING TECHNOLOGY ADVANCED...**prepares the learner to expand their knowledge of computer-assisted transcription and realtime software, dictionary management, specialized editing functions, transcript preparation, auto-included block files, and specialized macros for Steno-related tasks.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

**Program Number 10-102-3**  
**Associate Degree in Applied Science • Four Terms**

### ABOUT THE PROGRAM

Business managers are found in every sector of the economy in nearly all work settings from manufacturing to health care. The Business Management program provides graduates with the knowledge and skills for positions such as an entry-level manager, office manager, shift coordinator, or team leader, or graduates may start their own business. The successful business manager oversees day-to-day activities and leads the team or organization to the next level of performance. Managers plan, organize, staff, and control the tasks that carry out the work of the business or nonprofit organization. If you set goals for yourself and strive to accomplish them, prefer working with others rather than alone, enjoy serving as a leader even if it means more work, and want to improve your skills and promotion potential, then a career in business management may be a good choice for you.

### PROGRAM OUTCOMES

- Plan the operation of a business across functional areas.
- Organize resources to achieve the goals of the organization.
- Direct individuals and/or processes to meet organizational goals.
- Control business processes.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### RELATED PROGRAMS

- Entrepreneurship & Business (19-145-2)

### CONTACT

LTC Career Coach  
 920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10103121	Excel - Level I	1
10103191	Word - Level I	1
10196189	Team Building and Problem Solving	3
10102110	Introduction to Business	3
10801195	Written Communication OR 10801136 English Composition 1	3
10804123	Math with Business Applications	3
		<b>14</b>
<b>Term 2</b>		
10101131	Business Accounting	4
10105128	Personal Branding	2
10196193	Human Resource Management	3
10104102	Marketing, Principles of	3
10801198	Speech OR 10801196 Oral/Interpersonal Communication	3
		<b>15</b>
<b>Term 3</b>		
10101127	Managerial Accounting	3
10182102	Service Operations Management	3
10182108	Purchasing	3
10809195	Economics	3
10809198	Introduction to Psychology	3
		<b>15</b>
<b>Term 4</b>		
10102107	Internship - Business Management OR 10138101 Introduction to Global Business OR 10104104 Selling Strategies	3
10102123	Business Management-Capstone	3
10102127	Portfolio Assessment-Business Mngmt	1
10102160	Business Law	3
10809122	Introduction to American Government	3
10806112	Principles of Sustainability OR 10809166 Introduction to Ethics	3
		<b>16</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**BUSINESS ACCOUNTING**...introduces Business Management students to the core concepts of accounting and how a manager uses accounting in running a business. The student will also learn how to use financial statements to manage a business. PREREQUISITE: 10804123 Math with Business Applications

**BUSINESS LAW 1**...provides the learner with the skills to summarize the American legal system; diagram the state/federal court systems; evaluate dispute resolution methods; sequence the civil litigation process; summarize the administrative agencies; differentiate civil and criminal law; apply theories of negligence, intentional tort, and product liability; summarize elements of a contract; assess the validity of a contract; assess third-party rights and available remedies; and summarize Article II of the UCC.

**BUSINESS MANAGEMENT-CAPSTONE**...assess the role of business, its internal structure and its relationship to the external environment. Each learner analyzes the functions of business planning, information systems, operations management, information technology, marketing and how they interact and drive business activities. PREREQUISITES: 10102110 Intro to Business, 10104102 Principles of Marketing, 10196193 Human Resource Management and COREQUISITE: 10101131 Business Accounting

**ECONOMICS**...provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**EXCEL - LEVEL 1**...introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**HUMAN RESOURCE MANAGEMENT**...applies the skills/tools necessary to effectively value and apply employees' abilities and needs to organization goals. Learners will demonstrate the application of the supervisor's role in contemporary human resources management, impacts of EEOC, writing job descriptions, recruitment, selection, conducting job interviews, orientation, developing policies/procedures, training, performance management, employee counseling/development, and effective use of compensation and benefit strategies.

**INTERNSHIP-BUSINESS MANAGEMENT**...requires students to complete 216 hours of performing work in a business/industrial service setting related to their Business Management program objectives. Students are responsible for seeking and obtaining the internship position. Course requirements include maintaining a log of work activities, identifying and receiving approval from the job supervisor and instructor, and completing a work-related project. Students may meet periodically at LTC. PREREQUISITES: 10102110 Intro to Business, 10104102 Principles of Management, 10196193 Human Resource Management and COREQUISITES: 10101131 Business Accounting and 10102123 Business Management Capstone

**INTRODUCTION TO AMERICAN GOVERNMENT**...introduces American political processes and institutions. It focuses on rights and responsibilities of citizens and the process of participatory democracy. Learners examine the complexity of the separation of powers and checks and balances. It explores the role of the media, interest groups, political parties and public opinion in the political process. It also explores the role of state and national government in our federal system. COREQUISITE: 10838105 Intro to Reading and Study Skills or Reading placement assessment equivalent

**INTRODUCTION TO BUSINESS**...provides an introduction to the world of business from both the organizational and managerial viewpoint. It examines areas of business including the business environment, business formation, planning, operations, accounting, marketing, human resource management, and building effective teams.

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**MANAGERIAL ACCOUNTING**...prepares the learner to analyze financial performance; prepare and evaluate budgets; and compare and manage capital. (Accounting students will require the Accounting 1 prerequisite requirement for this course.) PREREQUISITE: 10101131 Business Accounting or 10101111 Accounting 1

**MARKETING, PRINCIPLES OF**...introduces the student to the consumer decision process model, the bases used to segment a market, basic concepts about goods, services, and ideas, the nature of supply chain and distribution, integrated marketing communications, and the stages of the product life cycle and their impact on the marketing mix.

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**PERSONAL BRANDING**...focuses on the importance of developing a strong brand identity for yourself as a professional. As a prospective employee, you are constantly selling yourself from how you talk, walk, dress, your facial expressions, and your body language; people are always forming impressions of you. In this course, you will develop a professional resume, cover letter, practice interview skills, and learn the role of social media in career development.

**PORTFOLIO ASSESSMENT-BUSINESS MANAGEMENT**...prepares the student to identify what they have learned throughout the business management program, write career goals, re-examine their resume, research and collect project samples of their achievements, and analyze their achievements within the college core abilities. PREREQUISITES: 10102110 Intro to Business, 10104102 Principles of Marketing, 10196193 Human Resource Management and COREQUISITES: 10101131 Business Accounting and 10102123 Business Management Capstone

**PRINCIPLES OF SUSTAINABILITY**...prepares students to develop sustainable literacy, analyze interconnections among physical and biological sciences and environmental systems, summarize effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal/recycling in the U.S., and analyze approaches used by your community. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PURCHASING**...introduces the participant to basic purchasing, quality specifications, inventory control, supplier selection, price aspects, research and measurement, negotiation, and global purchasing. This course is exciting for anyone interested in working in a challenging and rewarding purchasing and supply chain management career.

**SERVICE OPERATIONS MANAGEMENT**...introduces the student to the basic coverage of the concepts and current issues in service operation management. Topics include the value equation in operations management; understanding services; building the service system; operating the service system; enterprise resource management (ERP) and supply chain management concepts in the service sector.

**SPEECH**...explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and other essential elements of speaking successfully, including the listening process, form the basis of the course. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**TEAMBUILDING AND PROBLEM SOLVING**...applies the skills and tools necessary to facilitate problem solving in a team environment. Each learner will demonstrate the application of the benefits and challenges of group work, necessary roles in a team, stages of team development, different approaches to problem solving, consensus, a systematic process of problem definition, data acquisition, analysis, developing alternative solutions, solution implementation, and evaluation.

**WORD - LEVEL 1**...introduces the student to word processing features such as creating, saving, editing, navigating, and formatting the content of multi-page documents.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

**Program Number 50-410-1  
4-Year Contract**

**Work Hours (including related instruction): 6240  
Related Instruction Hours: 400 • Night School Hours: 120**

### ABOUT THE APPRENTICESHIP

Apprenticeships are employer-sponsored training programs. You must have a contract before being invited to school. A special application process is used for these programs. Please contact the Apprenticeship Office for the proper forms. Apprenticeship means you earn while you learn. If you want a career in a skilled trade, apprenticeship is the best way to get there. You'll combine on-the-job training with on-campus learning—you'll have the best of both worlds when it comes to learning the skills you need to get ahead. And even better, you'll earn a paycheck while you learn those skills.

### ABOUT THE CAREER

Architects create ideas and develop plans for buildings—carpenters turn ideas and plans into homes, offices, stores—all the structures in which we live, work and play. The Carpentry Apprenticeship program is an employer-sponsored, hands-on training program under the supervision of a joint apprenticeship committee. If you're detail-oriented; good at following directions; and enjoy working with your mind, hands, and tools to build things, becoming a journey-level carpenter could be a very rewarding career choice for you.

### CAREERS

Graduates of LTC's Carpentry Apprenticeship program work as journey-level carpenters in the areas of construction, maintenance, and repair of structures, both commercial and residential.

### CONSTRUCTION APPRENTICE APPLICATION REQUIREMENTS

- Apprentice Application
- Proof of Age
- Carpentry Entrance Assessment
- High School Transcripts or Equivalent
- Advisory Committee Interview

### PROGRAM OUTCOMES

- Build forms and rough frame.
- Read construction prints.
- Install exterior finishing.
- Install interior finishing and hardware.
- Install interior system including: drywall, insulation, acoustical ceilings, movable partitions, and access panel systems.
- Fit hardware to exterior and interior applications.

### APPROXIMATE COSTS

Contact the LTC Apprenticeship Office or visit [www.gotoltc.edu/apprenticeship](http://www.gotoltc.edu/apprenticeship) for detailed information.

### PLACEMENT SCORES

Seventy (70) percent or better on Carpenter Entrance Assessment.

### SPECIAL NOTE

Upon completion of the apprentice requirements, you'll be issued a Letter of Introduction, which states your requirements have been met. You'll use this Letter of Introduction to apply for work in the trade. You must have a sponsoring employer before receiving a contract and being invited to school.

### CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
50410715	Construction Carpentry Safety	1
50410719	Site Development for Carpentry Apprentices	1
<b>2</b>		
<b>Term 2</b>		
50410720	Concrete Forms for Carpentry Apprentices	1
50410721	Shoring & Floor Construction for Carpentry Apprentices	1
<b>2</b>		
<b>Term 3</b>		
50410722	Wall Construction for Carpentry Apprentices	1
50410724	Interior Finishing for Carpentry Apprentices	1
<b>2</b>		
<b>Term 4</b>		
50410716	Scaffold Erector and Tool Safety for Carpentry Apprentices	1
50410726	Roof Framing for Carpentry Apprentices	1
<b>2</b>		
<b>Term 5</b>		
50410727	Stair Design and Building for Carpentry Apprentices	1
50410725	Exterior Finishing and Doors for Carpentry Apprentices	1
<b>2</b>		
<b>Term 6</b>		
50410723	Metal Framing for Carpentry Apprentices	1
50410717	Basic Welding for Carpentry Apprentices	1
<b>2</b>		
		<b>TOTAL 12</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**BASIC WELDING FOR CARPENTRY**...will include arc and wire welding. Welding principles will be discussed and basic processes examined. Safety, set-up, and welding techniques commonly used by the trade will be addressed. Skill development will include basic arc and wire welding as well as burning, torching, and plasma cutting. Blueprint reading, safety and applicable commercial building codes will be reviewed. CONDITION: 504101 Carpentry Apprentice Requirements Met

**CONCRETE FORMS FOR CARPENTRY APPRENTICES**...will explore trade practices related to concrete forms. Course topics include Symons handset forms, MEVA gang forming, hardware & rebar requirements, reinforcement techniques and concrete science. Key principles involved in slump testing and preparing concrete will be discussed. Blueprint reading, safety, commercial codes, and related requirements will be addressed. CONDITION: 504101 Carpentry Apprentice Requirements Met

**CONSTRUCTION CARPENTRY SAFETY**...will introduce safe work practices, safety requirements, and personal protective equipment. Instruction includes forklift, rough terrain vehicle and aerial lift safety and operation. Construction trade safety best practices will be discussed. Trenching and rigging and signaling safety requirements and operation will also be covered. CONDITION: 504101 Carpentry Apprentice Requirements Met

**EXTERIOR FINISHING AND DOORS FOR CARPENTRY**...will examine exterior finishing and doors systems in this course. Exterior finishing topics include installation of windows and siding following specifications provided on blueprints. Door systems include hollow metal door frames; doors; door hardware, hangers and closures; and other related components. Blueprint reading, commercial building codes, and other requirements for doors and exteriors will be covered. CONDITION: 504101 Carpentry Apprentice Requirements Met

**INTERIOR FINISHING FOR CARPENTRY APPRENTICES**...will explore interior finishing techniques related to the trade. Trim and paneling will examine baseboard, casing, sills, jams, trims, and paneling installations. Cabinets and backing installation and blueprints are included in the course. Laminate and solid surface installation and manufacturing will be discussed. Acoustical ceiling basics, layouts, mains, and math are addressed. CONDITION: 504101 Carpentry Apprentice Requirements Met

**METAL FRAMING FOR CARPENTRY APPRENTICES**...will cover metal framing requirements related to commercial building codes. Blueprint reading and safety related to metal stud work are included. Course topics include structural studs, walls and shafts, soffits, joists, firestops, and other related concepts. Hands-on skill development in cutting studs for various job requirements is included. CONDITION: 504101 Carpentry Apprentice Requirements Met

**ROOF FRAMING FOR CARPENTRY APPRENTICES**...will apply blueprint reading skills to roofing systems and framing requirements. Rafters, gables, hips, intersecting, valleys, cornices & trusses will be covered. Course includes the installations of pre-engineered components as well as the awareness of how to make trusses and related components. Applicable commercial building codes, safety requirements, and related concepts addressed. CONDITION: 504101 Carpentry Apprentice Requirements Met

**SCAFFOLD ERECTOR AND TOOL SAFETY**...will cover scaffold systems, safety, and assembly in this course. Additional topics include tool safety, and basic blueprint reading. Tube and clamp, welding frame, and mobile towers will be compared. Common scaffold systems and set-ups for various job site situations will be discussed. Beginning tool safety for protecting workers, equipment and property will be examined. Blueprint reading skills will be introduced. CONDITION: 504101 Carpentry Apprentice Requirements Met

**SHORING AND FLOOR CONSTRUCTION FOR CARPENTRY**...will cover trade practices involving concrete shoring and floor construction. Course topics include elevated slabs and beams, EFCO systems, decks and Ellis clamps, plywood and concrete systems, precast and tilt-up slabs, and slab-on-grade with slopes. Hands-on learning opportunities related to the course topics are included. Codes, safety, blueprint reading and other related requirements are included. CONDITION: 504101 Carpentry Apprentice Requirements Met

**SITE DEVELOPMENT FOR CARPENTRY APPRENTICES**...will expose apprentices to trade practices related to site development. Use of a transit and level will be covered and skills developed related to working with building layouts. Elevation specifications and symbols will be examined. Total station fundamentals will be applied to various job sites. Blueprint reading, commercial building codes, safety, and related concepts when working on a job site. CONDITION: 504101 Carpentry Apprentice Requirements Met

**STAIR DESIGN AND BUILDING CARPENTRY**...will examine stair design, layout, and building in this course. Interpreting blueprints and building codes related to stairs and ADA accessibility will be addressed along with layout and frame wood and metal and concrete stairs based on codes and standards. Stairs will be built in team or class projects. Applying use of concrete forms to stairways will be covered. Reviewing and applying commercial codes to stairway construction for public buildings will also be covered. CONDITION: 504101 Carpentry Apprentice Requirements Met

**WALL CONSTRUCTION FOR CARPENTRY APPRENTICE**...will teach wall construction techniques involved with wood framing. Course topics include stick framing walls and headers, wood framing practices, drywall and insulation, drywall taping, and wall finishing. Blueprint reading, safety, and tool use are included. Commercial building codes related to wall construction will be reviewed. CONDITION: 504101 Carpentry Apprentice Requirements Met

## Program Number 31-307-1 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

Students in this fast-growing field receive training in planning and implementing developmentally appropriate curriculum for specific age levels; using positive guidance techniques to manage an early childhood classroom; providing for the health, safety and physical needs of the children; and work with parents to provide a link between the center and the home.

### PROGRAM OUTCOMES

- Relate knowledge of child development to practice
- Create relationships with children, family and the community
- Apply observation, documentation, and assessment strategies
- Implement developmentally appropriate teaching and learning activities
- Demonstrate professionalism
- Follow health, safety and nutrition practices

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Complete health requirements.
  - Submit Infant/Child CPR/AED certification to program staff.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

Practicum 1, and 2 students are required to attend all course reflections to receive required trainings. (36 hours of lecture + 72 hours of field experience for Practicum 1 and 2).

### RELATED PROGRAMS

- Early Childhood Education Associate Degree

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10307148	ECE: Foundations of Early Childhood Education	3
10307151	ECE: Infant & Toddler Development	3
10307174	ECE: Introductory Practicum	3
10307110	ECE: Social Studies, Art & Music	3
10801195	Written Communications OR 10801136 English Composition 1	3
		<b>15</b>
<b>Term 2</b>		
10307179	ECE: Child Development	3
10307188	ECE: Guiding Children's Behavior	3
10307177	ECE: Intermediate Practicum OR 10307175 ECE: Preschool Practicum (3 cr)	3
10307108	ECE: Early Language & Literacy	3
10307167	ECE: Health, Safety, and Nutrition	3
10809172	Introduction to Diversity Studies	3
		<b>18</b>
		<b>TOTAL 33</b>

*Curriculum  
Modifications Pending  
State Approval*

Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.

**ECE: CHILD DEVELOPMENT**...examines child development within the context of the early childhood education setting. Course competencies include: integrate strategies that support diversity, cultural responsiveness, and anti-bias perspectives; analyze social, cultural, and economic influences on child development; summarize child development theories; analyze development of children ages three through five; analyze development of children ages five through eight; relate child development research findings to teaching practice; analyze the role of heredity and the environment; examine the role of brain development in early learning (ages 3-8); examine developmental and environmental assessment strategies for children ages 3-8.

**ECE: FOUNDATIONS OF EARLY CHILDHOOD EDUCATION**...introduces you to the early childhood profession. Course competencies include: explore the concepts of diversity, cultural responsiveness, and anti-bias as it relates to early childhood education, investigate the history of early childhood education, examine regulatory requirements for early childhood education programs in WI, summarize types of early childhood education settings, identify the components of a quality early childhood education program, summarize responsibilities of early childhood education professionals, explore early childhood curriculum models and examine the critical role of play as it relates to developmentally appropriate practice.

**ECE: GUIDING CHILDREN'S BEHAVIOR**...examines positive strategies to guide children's behavior in the early childhood education setting. Course competencies include: integrate strategies that support diversity, cultural responsiveness, and anti-bias perspectives; analyze techniques for and effects of strong relationship-building with children and families; identify positive and proactive guidance principles and techniques to support children; analyze environmental influences on child behavior; identify strategies that support children's active engagement in the learning environment; identify strategies that proactively teach emotional literacy and regulation techniques; identify strategies that proactively teach friendship skills; identify strategies that proactively teach children calming, relaxation, and problem-solving techniques; utilize observation and assessment techniques to assess and interpret behavior; create a behavior support plan based on a functional behavior assessment; create a guidance philosophy. This course meets the requirements of the "24 hour Wisconsin" Pyramid Model training.

**ECE: HEALTH, SAFETY AND NUTRITION**...examines the topics of health, safety, and nutrition within the context of the early childhood educational setting. Course competencies include: integrate strategies that support diversity, cultural responsiveness, and anti-bias perspectives; examine governmental regulations and professional standards as they apply to health, safety, and nutrition; plan a safe early childhood environment; plan a healthy early childhood environment; plan nutritionally sound menus; examine child abuse and neglect issues and mandates; describe Sudden Infant Death Syndrome (SIDS) risk reduction strategies, describe strategies to prevent the occurrence of Shaken Baby Syndrome (SBS); incorporate health, safety, and nutrition concepts into the children's curriculum.

**ECE: INFANT AND TODDLER DEVELOPMENT**...will study infant and toddler development as it applies to an early childhood education setting. Course competencies include: integrate strategies that support diversity, cultural responsiveness, and anti-bias perspectives; analyze development of infants and toddlers (conception to thirty-six months); correlate prenatal and postnatal conditions with development; summarize child development theories; analyze the role of heredity and the environment; examine culturally and developmentally appropriate environments for infants and toddlers, examine the role of brain development in early learning (conception through thirty-six months); examine caregiving routines as curriculum; and examine developmental and environmental assessment strategies for infants and toddlers.

**ECE: INTRODUCTORY PRACTICUM**...will learn about and apply the course competencies in an actual early childhood setting. You will explore the standards for quality early childhood education, demonstrate professional behaviors, and meet the requirements for training in the Wisconsin Model Early Learning Standards. **CONDITION:** 103071 Early Childhood Education Admission Requirements Met or 313071 Child Care Services Admission Requirements Met and **PREREQUISITE:** 10307167 ECE: Health, Safety and Nutrition

**ECE: EARLY LANGUAGE AND LITERACY**...explores strategies to encourage the development of early language and literacy knowledge and skill building in children birth to 8 years of age. Learners will investigate the components of literacy including; literacy and a source of enjoyment, vocabulary and oral language, phonological awareness, knowledge of print, letters and words, comprehension and an understanding of books and other texts. Theories and philosophies regarding children's language and literacy development will be addressed. Dual language learning will be examined within the context of developmentally appropriate practices. Assessment tools for early language and literacy acquisition will be reviewed.

**ECE: INTERMEDIATE PRACTICUM**...will be implementing regulations and standards for quality early childhood education, applying knowledge of child development and positive guidance, utilizing observation and assessment techniques, and assessing developmentally appropriate environments for children. **PREREQUISITE:** 10307174 ECE: Introductory Practicum and **CONDITION:** 103071 Early Childhood Education or 313071 Child Care Services program admissions requirements met

**ECE: SOCIAL STUDIES, ART, AND MUSIC**...will focus on beginning level curriculum development in the specific integrated content areas of social studies, art, music, & movement (SSAMM).

**INTRODUCTION TO DIVERSITY STUDIES**...introduces learners to the study of diversity from a local to a global environment using a holistic, interdisciplinary approach. Encourages self-exploration and prepares the learner to work in a diverse environment. In addition to an analysis of majority/minority relations in a multicultural context, the primary topics of race, ethnicity, age, gender, class, sexual orientation, disability, religion are explored. **COREQUISITE:** 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. **PREREQUISITE:** 10831103 Intro to College Wrtg or Writing placement assessment equivalent and **COREQUISITE:** 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

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

### ABOUT THE PROGRAM

Computer numerical control (CNC) 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 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 basic machine tool equipment setup and operation.
- Perform programming, setup, and operation of CNC machine tools.
- Perform advanced CNC Machinist operations.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
- Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### RELATED PROGRAMS

- Machinist Apprenticeship
- Tool and Die Apprenticeship

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
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 1A	1
31420341	Machine Tool Lathes 1B	1
31420350	Machine Tool Mills 1A	1
31420351	Machine Tool Mills 1B	1
31420311	Machine Tool Programming Basic	1
31420325	Machine Tool Math Basic	1
31420326	Machine Tool Math Intermediate	1
31420385	Machine Tool Print Reading 1	1
31420386	Machine Tool Print Reading 2	1
		<b>13</b>
<b>Term 2</b>		
31420313	Machine Tool Programming	1
31420315	CAM for Milling Machines	1
31420342	Machine Tool Lathes 2	1
31420352	Machine Tool Mills 2	2
31420308	Intro to CNC Turning Center	1
31420307	Intro to CNC Machining Center	1
31420380	Machine Tool CNC Turning Center	2
31420382	Machine Tool CNC Machining Center	2
31420398	Machine Tool Technical Skills Portfolio	1
31809362	Psychology for Life	1
31801359	Communication Skills for the Workplace	2
		<b>15</b>
<b>Term 3</b>		
32444389	Print Reading Advanced	1
32444305	Advanced Measuring GD&T	2
32444302	Advanced Machining Centers 1A	2
32444307	Advanced Turning Centers 1A	2
32444303	Advanced Machining Centers 1B	2
32444308	Advanced Turning Centers 1B	2
32444311	CNC Programming Advanced	1
32444310	CAM for Turning Machines	1
		<b>13</b>
<b>Term 4</b>		
32444372	Metallurgy	1
32444304	Advanced Mills (Proto Traks)	2
32444360	Grinders 1	1
32444306	Advanced Technical Skills Portfolio	1
32444343	CNC Technician Program Internship	2
32444341	Advanced Machining Centers 1C	2
32444344	Advanced Turning Centers 1C	2
32444345	HSM for SolidWorks	1
32444309	Grinders 2	1
		<b>13</b>
		<b>TOTAL 54</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

Please see *Machine Tool Operation for Term 1 and 2* course descriptions.

**ADVANCED MACHINING CENTERS 1A**...prepares the learner to set up and operate a CNC machining center, perform probing on the CNC machining center, set up and operate using various workholding techniques, editing a program on the CNC control. PREREQUISITE: 31420382 Machine Tool CNC Machining Centers

**ADVANCED MACHINING CENTERS 1B**...teaches students to create and edit G&M code for CNC machining centers. Advanced Machining Centers 1B prepares the learner to create G&M code programs, create G&M programs using conversational programming, load program into control, set up and prove out program, and operate your program on CNC machining center. You will be creating programs for face milling, end milling, and hole producing. COREQUISITE: 32444302 Advanced Machining Centers 1A and 31420315 CAM for Turning Machines

**ADVANCED MACHINING CENTERS 1C**...covers how the ability to create G&M code programs to create complex parts is made possible using CAM software. Mastercam is a CAM software that is often used in industry. Advanced Machining Centers 1C prepares the learner to create G&M code programs using Mastercam software, post process, and down load into control; set up and prove out; and operate on the CNC machining center. You will be creating programs for face milling, end milling, hole producing, and thread milling. COREQUISITE: 32444308 Advanced Machining Centers 1B

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

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

**ADVANCED TECHNICAL SKILLS PORTFOLIO**...prepares the learner to complete a final project using multiple machines, processes, and the advanced skills and techniques acquired throughout the Machine Tool program. Learners will also create a portfolio for this final project that will include a work process plan, and photographs of their project. COREQUISITE: 32444341 Advanced Machining Centers 1C and 32444344 Advanced Turning Centers 1C

**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, create G&M code programs using conversational programming. PREREQUISITE: 31420380 Machine Tool CNC Turning Centers and 10420184 Machine Tool Programming

**ADVANCED TURNING CENTERS 1B**...prepares the learner to set up and operate a Computer Numerical Control (CNC) turning center, create programs for the turning center, execute programs, edit existing G&M code programs on the control, create G&M code programs using conversational programming, and create programs using MasterCam software. COREQUISITE: 32444307 Advanced Turning Centers 1A and 32444310 CAM for Turning Machines

**ADVANCED TURNING CENTERS 1C**...prepares the learner in advanced set up and operation of a Computer Numerical Control (CNC) turning center, create G&M code programs for student designed parts, execute programs, edit G&M code programs on the control. The learner will create G&M code programs by writing them longhand, by using conversational programming, or by using MasterCam software. COREQUISITE: 32444308 Advanced Machining Centers 1B

**CAM FOR TURNING MACHINES**...covers how creating G&M code programs quickly is how companies compete in the competitive environment of machine shops. Mastercam is a CAM software that is common in industry. In this course you will explore Mastercam computer software environment; construct 2-D turning geometry; and create rough turning operations, finish turning operations, rough and finish boring operations, threading operations, grooving and cutoff operations, and hole-producing operations for CNC turning machines. COREQUISITE: 31420342 Machine Tool Lathes 2

**CNC PROGRAMMING ADVANCED**...covers how the ability to write CNC programs with advanced features can speed up cutting processes and create operations to better hold size and quality of work pieces. In this course you will be learning how to create G&M code programs to create helical and ramping cutting tool entry, and the use of roughing and finishing tool paths for CNC machining centers. You will also create additional CNC turning center G&M code program options to further enhance process speed and quality. PREREQUISITES: 31420313 MT Programming

**CNC TECHNICIAN PROGRAM INTERNSHIP**...provides a broad variety of specific occupational experiences in the manufacturing machine tool/CNC machining industry. Students work with faculty to develop an internship plan and identify, coordinate, and evaluate learning experiences appropriate to the field of study and major career focus of the student. COREQUISITES: 32444303 Advanced Machining Centers 1B and 32444308 Advanced Turning Centers 1B and 32444306 Advanced Technician Skills Portfolio

**GRINDERS 1**...prepares the learner to follow grinding machine tool safety rules, identify grinding machine tool components, grinding wheels, and operate horizontal spindle reciprocating table surface grinders. PREREQUISITES: 31420352 MT Mills 2

**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, and apply methods for side grinding and grinding angles. COREQUISITE: 32444360 Grinders 1

**HSM FOR SOLIDWORKS**...is a CAD software that is often used for mechanical design. HSM for Solidworks is an add-on to Solidworks for CAM processes, creating G&M code programs from the solid model. In this course you will explore the Solidworks interface and create face milling, end milling, and hole-producing tool paths for CNC machining centers. You will also be creating turning, boring, threading, and hole-producing tool paths for CNC turning centers. PREREQUISITES: 31420340 Machine Tool Lathes 1A or 10420103 Machine Tool Lathes 1A or 31420395 Ind Mtn Machine Tool Lathes and Mills

**METALLURGY1**...prepares the learner to interpret the properties of ferrous materials, heat treat ferrous material, test the hardness of ferrous materials, and interpret the properties of non-ferrous materials

**PRINT READING ADVANCED**...enhances the learner's ability to interpret complex part drawings answering questions specifically related to: projection type and violations of true projection, positional dimensioning, geometric dimensioning and tolerancing, screw thread types and threaded fasteners, workpiece material types and structural shapes, pin fasteners, springs, and worm gears. The course when delivered in the evening is self-paced and designed for individualized student needs. PREREQUISITE: 31420386 Machine Tool Print Reading 2

#### ABOUT THE PROGRAM

You've seen high-profile trials with a person keying the testimony into a stenograph machine or read the scrolling captions for the hearing-impaired on your TV screen. The person recording the spoken words at speeds ranging from 180 to 225 words a minute is a court reporter. If you're an excellent listener, have strong language and communications skills, and are committed to accuracy and confidentiality, a career in court reporting may be a perfect fit for you.

#### PROGRAM OUTCOMES

- Utilize machine shorthand with a computer-aided transcription system to write the spoken word and produce a transcript.
- Perform as a realtime reporter with skills to obtain certification.
- Demonstrate knowledge of legal and medical concepts and terminology.
- Apply the NCRA Code of Professional Ethics and Certification Standards.

#### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

#### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

#### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Complete Notification of Laptop/Steno Rental Equipment form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

#### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

#### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

#### SPECIAL NOTE

- Students are required to rent a stenograph machine and laptop computer through the rental program available at LTC. LTC's Court Reporting program is certified by the National Court Reporters Association (NCRA).
- LTC shares its Court Reporting program with Fox Valley Technical College (FVTC) Appleton, Northeast Wisconsin Technical College (NWTC)-Green Bay, Mid-State Technical College (MSTC)-Stevens Point, and Moraine Park Technical College (MPTC)-Fond du Lac. LTC also offers an opportunity for students to complete the program at the Lakeland College-Milwaukee campus.

#### GRADUATION REQUIREMENT

Three 5-minute timings must be passed in each of the following categories with a minimum of 95 percent accuracy:

- Two-voice testimony @ 225 wpm
- Jury charge @ 200 wpm
- Literary @ 180 wpm
- Court Reporting Internship of 40 hours must be taken within 18 months of graduation.

#### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10170106	Realtime Reporting 1	5
10170804	Realtime Reporting 1 Lab	1
10170144	Realtime Reporting Orientation	1
10170160	Legal Terminology	1
10801195	Written Communication OR 10801136 English Composition 1	3
10809198	Introduction to Psychology	3
<b>14</b>		
<b>Term 2</b>		
10170105	Realtime Reporting 2	5
10170805	Realtime Reporting 2 Lab	1
10170159	Realtime Reporting Technology	2
10170184	English for Realtime Reporters	1
10801196	Oral/Interpersonal Communication OR 10801198 Speech	3
<b>12</b>		
<b>Term 3 (Summer)</b>		
10170108	Realtime Reporting Speed Development	2
10170104	Broadcast Captioning Research Methods	1
10809122	Introduction to American Government OR 10809172 Introduction to Diversity Studies Skillbuilding 1, 2, or 3 (Optional)	3
<b>6</b>		
<b>Term 4</b>		
10170109	Literary 1 - Advanced	2
10170128	Jury Charge 1 - Advanced	2
10170156	Testimony 1 - Advanced	3
10170171	Medical Reporting & Terminology	2
10170161	Realtime Reporting Technology Adv	2
10804123	Math with Business Applications OR 10804107 College Math OR 10806112 Principles of Sustainability	3
<b>14</b>		
<b>Term 5</b>		
10170145	Court Reporting Internship	1
10170111	Literary 2 - Advanced	2
10170129	Jury Charge 2 - Advanced	2
10170157	Testimony 2 - Advanced	3
10170146	Four Voice	1
10170141	Court Reporting Procedures	2
10170101	Captioning/CART	3
<b>14</b>		
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**BROADCAST CAPTIONING RESEARCH METHODS...**prepares the learner to prepare (research) prior to broadcast, conduct research in preparation for broadcasting international news, national news, local news, weather reports, sporting events, writing geographical terms, utilize culturally diverse terminology, and create job dictionaries.

**CAPTIONING/CART...**prepares student to write Realtime dictation at 180 wpm, analyze deaf culture, analyze captioning/CART procedures, prepare for broadcast production, configure CAT software for captioning, set up captioning hardware, operate the CAT system in captioning mode, utilize proper technology to control caption spacing and placement, write a news broadcast for 30 min non-stop, configure CART software, and analyze the contents of the CART provider's manual. PREREQUISITE: 10170156 Testimony 1-Adv & 10170109 Literary 1-Adv & COREQUISITE: 10170157 Testimony 2-Adv

**COURT REPORTING INTERNSHIP...**prepares the student to write machine shorthand verbatim for a minimum of 40 hours of actual writing time in the courtroom, classroom, and deposition environment under the supervision of a working reporter; prepare a 40-page transcript, and summarize the internship experience in a narrative report. PREREQ: 10106108 or 10170108 Realtime Rptg Speed Dev, 10106128 or 10170128 Jury Chrg 1-Adv, 10106109 or 10170109 Lit 1-Adv, 10106156 or 10170156 Test 1-Adv & COREQ: 10106129 or 10170129 Jury Chrg 2-Adv, 10106111 or 10170111 Lit 2-Adv & 10106157 or 10170157 Test 2-Adv

**COURT REPORTING PROCEDURES...**introduces the student to reporting procedures for which reporters are responsible in the courtroom, deposition, and real-time reporting environments, including preparing salable transcripts, researching legal citations, and developing professional development plans.

**ENGLISH FOR REALTIME REPORTERS...**enhances the student's ability to use proper English grammar, spelling, punctuation, capitalization, and vocabulary techniques in the transcription of the spoken word.

**FOUR VOICE...**prepares the student to write four-voice testimony from material dictated at a minimum speed of 160 wpm for 5 minutes with a minimum of 95 percent accuracy. PREREQUISITE: 10170156 Testimony 1 – Advanced

**INTRODUCTION TO AMERICAN GOVERNMENT...**introduces American political processes and institutions. It focuses on rights and responsibilities of citizens and the process of participatory democracy. Learners examine the complexity of the separation of powers and checks and balances. It explores the role of the media, interest groups, political parties and public opinion in the political process. It also explores the role of state and national government in our federal system. COREQUISITE: 10838105 Intro to Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**JURY CHARGE 1 - ADVANCED...**prepares student to write jury charge material at 160 WPM for 3 minutes and transcribe at least 3 timings with a minimum of 95 percent accuracy and prepare salable transcripts. PREREQUISITE: 10170121 Jury Charge 1 - Beginner or 10106121 Jury Charge 1 - Beginner or CONDITION: Min of 130 WPM met

**JURY CHARGE 2 - ADVANCED...**prepares learner to write jury charge material at 200 WPM for 5 minutes and transcribe at least 3 timings with a minimum of 95 percent accuracy and prepare salable transcripts. PREREQUISITE: 10170122 Jury Charge 2- Beginner or 10106122 Jury Charge 2-Beginner or CONDITION: Min of 180 WPM met

**LEGAL TERMINOLOGY...**provides the student with the ability to spell, pronounce, and define legal terms.

**LITERARY 1 - ADVANCED...**prepares learner to write literary material at 150 WPM for 3 min and transcribe at least 3 timings with a minimum of 95 percent accuracy, write & read back current events dictation, and prepare salable transcripts. PREREQUISITE: 10170113 Literary 1-Beg or 10106113 Literary 1-Beg or CONDITION:Min of 130 WPM met

**LITERARY 2- ADVANCED...**prepares the learner to write literary material at 180 words per minute for 5 minutes and transcribe at least 3 timings with a minimum of 95 percent accuracy, write and read back current events dictation, and prepare salable transcripts. PREREQUISITE: 10170114 Literary 2 - Beginner or 10106114 Literary 2 - Beginner or CONDITION: minimum of 160 words per minute met

**MATH WITH BUSINESS APPLICATIONS...**covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**MEDICAL REPORTING/TERMINOLOGY...**prepares the student to write medical terminology in machine shorthand using appropriate medical terminology from material dictated at a minimum speed of 150 wpm for 5 minutes with a minimum of 95 percent accuracy. The student will research medical information, prepare salable transcripts, and submit timings. COREQUISITE: 10170156 Testimony 1 - Advanced or 10106156 Testimony 1 – Advanced

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**REALTIME REPORTING 1...**prepares the learners to use machine shorthand to write consonants, vowels, numbers, multi-syllabic words, multi-consonant words, punctuation and special symbols, short forms and phrases, words in their singular and plural forms, and prefixes and suffixes. Concurrent registration in Realtime Reporting 1 Lab is required. CONDITION: 101701 Broadcast Captioning or 101702 Court Reporting or 101061 Judicial Reporting program requirements met

**REALTIME REPORTING 1 LAB...**prepares the learner to use machine shorthand to write consonants, vowels, numbers, multi-syllabic words, multi-consonant words, punctuation and special symbols, short forms and phrases, words in their singular and plural forms, and prefixes and suffixes. Concurrent registration in Realtime Reporting 1 is required. COREQUISITE: 10170106 Realtime Reporting 1 or 10106104 Realtime Reporting 1 and CONDITION: 101701 Broadcast Captioning or 101702 Court Reporting or 101061 Judicial Reporting program requirement met

**REALTIME REPORTING 2...**prepares learner to write multi-syllabic words; punctuation and special symbols, short forms & phrases, prefixes & suffixes; numbers, frequently used words and phrases, contractions using the Z-rule, the "Flagged Alphabet," apply realtime conflict elimination principles, apply realtime theory and write dictation using a realtime theory at a minimum speed of 100 wpm. Concurrent registration in Realtime Reporting 2 Lab is required. PREREQUISITES: 10170106 Realtime Reporting 1 or 10106104 Realtime Reporting 1 & 10170804 Realtime Reporting 1 Lab or 10106804 Realtime Reporting 1 Lab

**REALTIME REPORTING 2 LAB...**expands learner's ability to write multi-syllabic words; punctuation and special symbols, short forms and phrases, prefixes & suffixes; numbers, frequently used words and phrases, contractions using the Z-rule, the "Flagged Alphabet," apply realtime conflict elimination principles, apply realtime theory and write dictation using a realtime theory. Concurrent registration in Realtime Reporting 2 is required. PREREQUISITE: 10170106 Realtime Reporting 1 & 10170804 Realtime Reporting 1 Lab & COREQUISITES: 10170105 Realtime Reporting 2 or 10106105 Realtime Reporting 2

**REALTIME REPORTING ORIENTATION...**prepares student to use computer-assisted, real-time transcription software, Windows, e-mail, a steno machine, and a laptop in writing machine shorthand in court reporting and to complete and submit required coursework. CONDITION: 101701 Broadcast Capt or 101702 Court Rep program requirements met

**REALTIME REPORTING SPEED DEVELOPMENT...**further develops skills acquired in Realtime Reporting 2 on literary and testimony material beginning at 100 wpm. Scheduled during the summer term, students must pass two, 3-minute timings at a minimum speed of 110 words per minute. PREREQUISITE: 10170105 Realtime Reporting 2 or 10106105 Realtime Reporting 2 and 10170805 Realtime Reporting Lab 2

**REALTIME REPORTING TECHNOLOGY...**prepares the student to use CAT (Computer-Assisted Transcription) and real-time software; build personal dictionaries; and read, translate, and edit transcripts. Students are introduced to real-time translation procedures in court, depositions, captioning, and educational environments.

**REALTIME REPORTING TECHNOLOGY ADVANCED...**prepares the learner to expand their knowledge of computer-assisted transcription and realtime software, dictionary management, specialized editing functions, transcript preparation, auto-included block files, and specialized macros for Steno-related tasks.

**TESTIMONY 1 - ADVANCED...**prepares learner to write 2-voice testimony material at 160 words per minute for 3 minutes and transcribe at least 3 timings with a minimum of 95 percent accuracy and prepare salable transcripts. PREREQUISITE: 10170153 Testimony 1 - Beginner or 10106153 Testimony 1 - Beginner or CONDITION: Min of 130 WPM met

**TESTIMONY 2 - ADVANCED...**prepares learner to write 2-voice testimony material at 225 words per minute for 5 minutes and transcribe at least 3 timings with a minimum of 95 percent accuracy and prepare salable transcripts. PREREQUISITE: 10170154 Testimony 2 - Beginner or 10106154 Testimony 2 - Beginner or CONDITION: Minimum of 180 WPM

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 10-504-6 Associate Degree in Applied Science • Four Terms

### ABOUT THE PROGRAM

To serve and protect. These words define the commitment of law enforcement personnel. If you're a law-abiding individual who values honesty, order, detail, and you possess the desire and ability to work with and assist people in a variety of situations, you may want to consider dedicating yourself to an ever-changing career in law enforcement.

### PROGRAM OUTCOMES

- Think critically.
- Manage emergencies.
- Communicate effectively.
- Demonstrate professionalism.
- Interact with others.
- Demonstrate tactical skills.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee. (No felony arrest or domestic violence convictions)

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Firearms User Background Disclosure form.
  - Submit US citizenship status.
  - Complete DMI (District Mutual Insurance) form.
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

LTC's Criminal Justice—Law Enforcement program is approved by the Wisconsin Department of Justice, Training and Standards Bureau. The Wisconsin Department of Justice reserves the right to make changes to the Recruit Academy embedded within this program, which may necessitate curriculum changes.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10540131	Intro to Public Safety	2
10504170	Public Safety Fitness	1
10504910	Law Enforcement Career Development	2
10801195	Written Communication	3
10809198	Introduction to Psychology	3
10804107	College Mathematics	3
		<b>14</b>
<b>Term 2</b>		
10504700	Introduction to Criminal Justice	3
10504915	Basic Patrol Response	2
10504916	Basic Tactics	2
10504703	Basic Investigations	3
10504920	Physical Fitness Phase 1	1
10809159	Abnormal Psychology	3
10801196	Oral/Interpersonal Communication	3
		<b>17</b>
<b>Term 3</b>		
10504917	Intermediate Investigation	1
10504704	Intermediate Patrol Response	3
10504705	Advanced Tactics	4
10504706	Emergency Vehicle Response	2
10504921	Physical Fitness Phase 2	1
10801198	Speech	3
		<b>14</b>
<b>Term 4</b>		
10504918	Advanced Investigations	5
10504709	Traffic Response	3
10504171	Advanced Patrol Techniques	3
10504970	Spanish for Law Enforcement	1
10504708	Physical Fitness Phase 3	1
10504195	Law Enforcement Capstone	2
		<b>15</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ABNORMAL PSYCHOLOGY**...surveys the essential features, possible causes, and assessment and treatment of the various systems of abnormal behavior from the viewpoint of the major theoretical perspectives in the field of abnormal psychology. Students will be introduced to the diagnosis system of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). In addition, the history of the psychology of abnormality will be traced. Cultural and social perspectives in understanding and responding to abnormal behavior will be explored as well as current topics and issues within abnormal psychology. PREREQUISITE: 10809198 Psychology-Intro or 10809199 Psychology of Human Relations and Reading placement assessment equivalent

**ADVANCED INVESTIGATIONS**...instructs students in applying the skills from the Phase III topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Moral Reasoning and Professional Responsibility, Fair and Impartial Policing, Victims, Sexual Assault, Child Maltreatment, Interrogations, Physical Evidence Collection, Testifying in Court, Juvenile Law, Hazardous Materials, Domestic, and DOJ Integration Exercises. PREREQUISITE: 10504917 Intermediate Investigations

**ADVANCED PATROL TECHNIQUES**...provides the learner with the specialized knowledge and skills to perform a Pursuit Intervention Technique (PIT) and conduct modified high risk contacts. Additionally, learners will incorporate multiple previously learned traffic concepts into scenario based applications, and learn a variety of restraint and transport procedures.

**ADVANCED TACTICS**...teaches and applies the skills from the Phase 2 topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Defense and Arrest Tactics (DAAT) and Firearms 2. Student learning will occur through lecture and on campus lab activities. PREREQUISITE: 10504916 or 10504702 Basic Tactics

**BASIC INVESTIGATIONS**...teaches and applies the skills from the Phase 1 topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Constitutional Law, Crimes, Interviews, and Report Writing. Student learning will occur through lecture, on campus lab activities, and the Department of Justice 720 Academy Integration Exercises. CONDITION: 105046 Criminal Justice Law Enforcement 2 or 315047 Criminal Justice 720 Embedded Academy program requirements met

**BASIC PATROL RESPONSE**...instructs students through classroom lecture, on campus lab and Wisconsin Department of Justice Integration activities. Students will learn and apply skills addressed in the following Department of Justice 720 academy Phase I topics: Basic Response(RESPOND), TraCS, Traffic Law Enforcement, and First Aid/ CPR/ AED.

**BASIC TACTICS**...instructs students in the skills from Phase I topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Defense and Arrest Tactics, Fundamentals of Firearms, Vehicle Contacts, and Officer Wellness. Student learning will occur through: lecture, on campus lab activities, and the Department of Justice 720 Academy Integration Exercises. CONDITION: 105046 Criminal Justice Law Enforcement 2 or 315047 Criminal Justice 720 Embedded Academy

**COLLEGE MATHEMATICS**...is designed to review and develop fundamental concepts of mathematics pertinent to the areas of: 1) arithmetic and algebra; 2) geometry and trigonometry; and 3) probability and statistics. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent

**EMERGENCY VEHICLE RESPONSE**...teaches and applies the skills from the Phase 2 topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Emergency Vehicle Operations and Control (EVO) and Vehicle Contacts 2. Student learning will occur through lecture, on campus lab activities, and Wisconsin Department of Justice 720 Academy Integration Exercises. PREREQUISITE: 10504916 or 10504702 Basic Tactics

**INTERMEDIATE INVESTIGATION**...instructs students in the skills from the Phase II topics outlined in the WI Department of Justice 720 Academy. Topics include: Constitutional Law II and Evidence Collection. Student learning will occur through lecture and the Wisconsin Department of Justice 720 Academy Integration Exercises. PREREQUISITE: 10504703 Basic Investigations

**INTERMEDIATE PATROL RESPONSE**...teaches and applies the skills from the Phase 2 topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Professional Communication Skills, Tactical Response, Crisis Management, and Tactical Emergency Casualty Care. Student learning will occur through lecture, on campus lab activities, and Wisconsin Department of Justice 720 Academy Integration Exercises. PREREQUISITE: 10504915 or 10504701 Basic Patrol Response

**INTRO TO PUBLIC SAFETY**...gives the student a working knowledge of the Emergency Management and Incident Command System.

**INTRODUCTION TO CRIMINAL JUSTICE**...focuses on the following phase 1 topics as addressed in the Wisconsin Department of Justice Academy 720 curriculum framework: Academy Orientation, Fundamentals of Criminal Justice, Ethics, Cultural Competency, Agency Policy, Professional Communications, Radio Procedures, Critical Thinking, and Integration Exercises to apply learning. PREREQUISITE: 10831103 Intro to College Writing or test or waiver equivalency and CONDITION: 105046 Criminal Justice Law Enforcement 2 or 315047 Criminal Justice 720 Embedded Academy program requirements met

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**LAW ENFORCEMENT CAPSTONE**...instructs students how to complete practice scenarios for Phase III Wisconsin Department of Justice 720 Academy testing. Additionally, the Phase III practical testing will occur. COREQUISITE: 10504709 Traffic Response and 10504918 Advanced Investigation

**LAW ENFORCEMENT CAREER DEVELOPMENT**...provides an in-depth study of the hiring process commonly used by law enforcement agencies. It also focuses on the skills that are essential to obtain and maintain employment as a police officer and prepares the student for future interviews. In addition, the course provides meaningful information about career options in the Criminal Justice field as well as options within the law enforcement field itself. CONDITION: 105046 Criminal Justice-Law Enforcement 2 or 315047 Criminal Justice 720 Embedded Academy program requirements met

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PHYSICAL FITNESS PHASE 1**...applies the physical fitness skills required by the Wisconsin Department of Justice 720 academy in this phase 1 course. Students will apply learning in an instructor facilitated lab with on and off campus physical fitness activities. CONDITION: 105046 Criminal Justice Law Enforcement 2 or 315047 Criminal Justice 720 Embedded Academy

**PHYSICAL FITNESS PHASE 2**...applies the physical fitness skills required by the Wisconsin Department of Justice 720 academy in this phase 2 course. Students will apply learning in an instructor facilitated lab with on campus physical fitness activities. PREREQUISITE: 10504920 Physical Fitness Phase 1

**PHYSICAL FITNESS PHASE 3**...applies the physical fitness skills required by the Wisconsin Department of Justice 720 Academy in this phase 3 course. Students will apply learning in independent lab activities and an on campus physical fitness test/assessment. PREREQUISITE: 10504705 Advanced Tactics

**PUBLIC SAFETY FITNESS**...gives the student a basic understanding of fitness for a career in Public Safety occupations.

**SPANISH FOR LAW ENFORCEMENT**...prepares the learner to communicate with Spanish speaking individuals during a police contact while maintaining safety. Prepares the learner to perform police duties using limited Spanish. CONDITION: 105046 Criminal Justice Law Enforcement 2 or 315047 Criminal Justice 720 Embedded Academy program requirements met

**SPEECH**...explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and other essential elements of speaking successfully, including the listening process, form the basis of the course. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**TRAFFIC RESPONSE**...teaches and applies the skills from the Phase 3 topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Traffic Law Enforcement - Core and Radar, Traffic Crash Investigations and Incident Management, and Operating While Intoxicated (OWI) and Standard Field Sobriety Testing (SFST), and Crimes. Student learning will occur through lecture and on campus lab activities. COREQUISITE: 10504706 Emergency Vehicle Response

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 31-504-7 Technical Diploma • Three Terms

### ABOUT THE PROGRAM

This program incorporates the Wisconsin Department of Justice Recruit Academy portion of LTC's Criminal Justice Associate Degree. This offers those individuals that have already completed necessary college coursework to complete a Department of Justice Recruit Academy at Lakeshore Technical College.

### PROGRAM OUTCOMES

- Think critically.
- Manage emergencies.
- Communicate effectively.
- Demonstrate professionalism.
- Interact with others.
- Demonstrate tactical skills.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee. (No felony arrest or domestic violence convictions)

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Firearms User Background Disclosure form.
  - Submit US citizenship status.
  - Complete DMI (District Mutual Insurance) form.
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

This unique program permits individuals that already have 24 accredited college credits to complete a Department of Justice Recruit Academy and gain the necessary credentials to become a certifiable candidate for law enforcement job opportunities.

Individuals seeking Department of Justice Academy completion will need to complete a mandatory physical fitness test for admission to the academy component of this program.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1 (Spring)</b>		
10504700	Introduction to Criminal Justice	3
10504915	Basic Patrol Response	2
10501916	Basic Tactics	2
10504703	Basic Investigations	3
10504920	Physical Fitness Phase 1	1
10801196	Oral/Interpersonal Communicaton	3
		<b>14</b>
<b>Term 2 (Fall)</b>		
10504917	Intermediate Investigation	1
10504704	Intermediate Patrol Responses	3
10504705	Advanced Tactics	4
10504706	Emergency Vehicle Response	2
10504921	Physical Fitness Phase 2	1
		<b>11</b>
<b>Term 3 (Spring)</b>		
10504918	Advanced Investigations	5
10504709	Traffic Response	3
10504708	Physical Fitness Phase 3	1
10504195	Law Enforcement Capstone	2
		<b>11</b>
		<b>TOTAL 36</b>

*Students seeking Department of Justice certification must complete the courses in the program in the sequence required by the Department of Justice Recruit Academy phases.*

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ADVANCED INVESTIGATIONS**...instructs students in applying the skills from the Phase III topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Moral Reasoning and Professional Responsibility, Fair and Impartial Policing, Victims, Sexual Assault, Child Maltreatment, Interrogations, Physical Evidence Collection, Testifying in Court, Juvenile Law, Hazardous Materials, Domestic, and DOJ Integration Exercises. PREREQUISITE: 10504917 Intermediate Investigations

**ADVANCED TACTICS**...teaches and applies the skills from the Phase 2 topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Defense and Arrest Tactics (DAAT) and Firearms 2. Student learning will occur through lecture and on campus lab activities. PREREQUISITE: 10504916 or 10504702 Basic Tactics

**BASIC INVESTIGATIONS**...teaches and applies the skills from the Phase 1 topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Constitutional Law, Crimes, Interviews, and Report Writing. Student learning will occur through lecture, on campus lab activities, and the Department of Justice 720 Academy Integration Exercises. CONDITION: 105046 Criminal Justice Law Enforcement 2 or 315047 Criminal Justice 720 Embedded Academy program requirements met

**BASIC PATROL RESPONSE**...instructs students through classroom lecture, on campus lab and Wisconsin Department of Justice Integration activities. Students will learn and apply skills addressed in the following Department of Justice 720 Academy Phase I topics: Basic Response (RESPOND), TraCS, Traffic Law Enforcement, and First Aid/ CPR/ AED.

**BASIC TACTICS**...instructs students in the skills from Phase I topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Defense and Arrest Tactics, Fundamentals of Firearms, Vehicle Contacts, and Officer Wellness. Student learning will occur through: lecture, on campus lab activities, and the Department of Justice 720 Academy Integration Exercises. CONDITION: 105046 Criminal Justice Law Enforcement 2 or 315047 Criminal Justice 720 Embedded Academy

**EMERGENCY VEHICLE RESPONSE**...teaches and applies the skills from the Phase 2 topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Emergency Vehicle Operations and Control (EVOC) and Vehicle Contacts 2. Student learning will occur through lecture, on campus lab activities, and Wisconsin Department of Justice 720 Academy Integration Exercises. PREREQUISITE: 10504916 or 10504702 Basic Tactics

**INTERMEDIATE INVESTIGATION**...instructs students in the skills from the Phase II topics outlined in the WI Department of Justice 720 Academy. Topics include: Constitutional Law II and Evidence Collection. Student learning will occur through lecture and the Wisconsin Department of Justice 720 Academy Integration Exercises. PREREQUISITE: 10504703 Basic Investigations

**INTERMEDIATE PATROL RESPONSE**...teaches and applies the skills from the Phase 2 topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Professional Communication Skills, Tactical Response, Crisis Management, and Tactical Emergency Casualty Care. Student learning will occur through lecture, on campus lab activities, and Wisconsin Department of Justice 720 Academy Integration Exercises. PREREQUISITE: 10504915 or 10504701 Basic Patrol Response

**INTRODUCTION TO CRIMINAL JUSTICE**...focuses on the following phase 1 topics as addressed in the Wisconsin Department of Justice Academy 720 curriculum framework: Academy Orientation, Fundamentals of Criminal Justice, Ethics, Cultural Competency, Agency Policy, Professional Communications, Radio Procedures, Critical Thinking, and Integration Exercises to apply learning. PREREQUISITE: 10831103 Intro to College Writing or test or waiver equivalency and CONDITION: 105046 Criminal Justice Law Enforcement 2 or 315047 Criminal Justice 720 Embedded Academy program requirements met

**LAW ENFORCEMENT CAPSTONE**...instructs students how to complete practice scenarios for Phase III Wisconsin Department of Justice 720 Academy testing. Additionally, the Phase III practical testing will occur. COREQUISITE: 10504709 Traffic Response and 10504918 Advanced Investigation

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PHYSICAL FITNESS PHASE 1**...applies the physical fitness skills required by the Wisconsin Department of Justice 720 Academy in this phase 1 course. Students will apply learning in an instructor facilitated lab with on and off campus physical fitness activities. CONDITION: 105046 Criminal Justice Law Enforcement 2 or 315047 Criminal Justice 720 Embedded Academy

**PHYSICAL FITNESS PHASE 2**...applies the physical fitness skills required by the Wisconsin Department of Justice 720 Academy in this phase 2 course. Students will apply learning in an instructor facilitated lab with on campus physical fitness activities. PREREQUISITE: 10504920 Physical Fitness Phase 1

**PHYSICAL FITNESS PHASE 3**...applies the physical fitness skills required by the Wisconsin Department of Justice 720 Academy in this Phase 3 course. Students will apply learning in independent lab activities and an on campus physical fitness test/assessment. PREREQUISITE: 10504705 Advanced Tactics

**TRAFFIC RESPONSE**...teaches and applies the skills from the Phase 3 topics outlined in the Wisconsin Department of Justice 720 Academy. Topics include: Traffic Law Enforcement - Core and Radar, Traffic Crash Investigations and Incident Management, and Operating While Intoxicated (OWI) and Standard Field Sobriety Testing (SFST), and Crimes. Student learning will occur through lecture and on campus lab activities. COREQUISITE: 10504706 Emergency Vehicle Response

## Program Number 31-316-1 Technical Diploma • Four Terms

### ABOUT THE PROGRAM

If you are creative, enjoy the constantly evolving food service industry, work well with people, and have a love of food, the Lakeshore Culinary Institute may be the best place to launch your career. Graduates of the program become chefs, independent restaurateurs, bakers or pastry chefs, sales staff for the food industry, food service managers, and corporate chefs. The program is offered at Bistro 712, on Sheboygan's Riverfront in a working restaurant setting. Students enjoy class sizes of 12 and rapid progression to graduation through four consecutive 15-week semesters. The program is rich with practical experience in American regional and international cuisines. Courses are offered in traditional and blended delivery. The program requires day, evening, and some Saturday hours.

### PROGRAM OUTCOMES

- Apply principles of safety and sanitation in food service operations.
- Apply principles of nutrition.
- Demonstrate culinary skills.
- Manage food service operations.
- Plan menus.
- Analyze food service financial information.
- Relate food service operations to sustainability.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### RELATED PROGRAMS

- Culinary Arts Associate Degree

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10316101	Product Identification and Purchasing	2
10316102	Skill Development	3
10316104	Introduction to Baking and Pastry	3
10109112	Sanitation for Food Service	1
10316105	Culinary Practicum 1	2
10109108	Dining Room and Beverage Service	2
		<b>13</b>
<b>Term 2</b>		
10316133	Advanced Patisserie and Desserts	2
10316110	Cooking Methods	3
10316111	Garde Manger	2
10316114	Culinary Practicum 2	2
10316107	Introduction to Stocks, Soups and Sauces	2
10801196	Oral/Interpersonal Communication OR	3
	10801198 Speech	
		<b>14</b>
<b>Term 3</b>		
10316122	Classic and Contemporary French Cuisine	3
10316123	Menu Planning and Cost Controls	3
10316112	Catering, Buffet and Quantity Food Production	2
10316125	Culinary Practicum 3	2
10316132	Culinary Leadership	2
		<b>12</b>
<b>Term 4</b>		
10316121	Advanced Garde Manger and Catering	3
10316135	European and Fusion Cooking	3
10316136	Nutrition	1
10316134	Culinary Internship	2
		<b>9</b>
		<b>TOTAL 48</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ADVANCED GARDE MANGER AND CATERING...**covers executing finer techniques in smaller quantities, to allow learners to explore Charcuterie items including sausages, cured and smoked meats. Compound salads, terrines, pates, canapés, and vegetable and fruit displays are covered. Presentation techniques are emphasized including ice sculpting. Safety, sanitation and cost control concepts are applied. PREREQUISITES: 10316114 Culinary Practicum 2

**ADVANCED PATISSERIE AND DESSERTS...**includes advanced styles of pastries and desserts, per assignment and in group projects - for our restaurant menu and for a variety of assigned events. Content will include artisan bread production, along with the preparation, plating, garnishing and display of a variety of frozen desserts, ice creams, gelatos, crepes, patisserie, tarts, flans, cakes, tortes, custards, truffles and classic dessert sauces.

**CATERING, BUFFET, AND QUANTITY FOOD PRODUCTION...**building on Garde Manger, learners examine the execution of banquets and catering events. Principles of large group menus, contemporary batch cookery, multiple station service, on demand preparation and volume feeding operations are covered. Safety, sanitation and cost control concepts are applied. COREQUISITE: 10316111 Garde Manager

**CLASSIC AND CONTEMPORARY FRENCH CUISINE...**is a more advanced course, including technique, cooking methods, French sauces, line cooking, plating, and how the practice of those skills finds relevance in the professional restaurant kitchen. Students explore the history, culture, and techniques of specific regions in France and many countries influenced by French cooking. Bistro recipes are developed, field tested and applied. Prerequisites: 10316114 Culinary Practicum 2

**COOKING METHODS...**explores the advanced professional kitchen, covering soups, sauces and cooking methods. Content includes stock preparation, reduction techniques and a wide variety of classic soups, in addition to contemporary sauce preparation, the 5 Mother Sauces and their many derivatives. Adv. cooking methods are applied to batch and single entree preparation. Styles of plating are explored. PREREQUISITES: 10109112 Sanitation for Food Service

**CULINARY INTERNSHIP...**applies program objectives and competencies under supervision in culinary settings, preparing foods that are cooked to order. Activities may include day, evening, and weekend requirements. Students enhance the learning experience through journal writing and other written assignments. A final program portfolio is required per rubric. COREQUISITES: 10316121 Advanced Garde Manager and Catering and 10316135 European and Fusion Cooking

**CULINARY LEADERSHIP...**includes review and application of industry-specific skills needed to master the effective management of a profitable and efficient culinary operation. Includes recipe and product development, menu scripting, time management, principles of leadership, staff motivation, developing a community of excellence, staff scheduling, writing a business plan, developing standard operating procedures, resume and portfolio development, professional development planning, interviewing and public speaking skills. COREQUISITE: 10316123 Menu Planning and Cost Control

**CULINARY PRACTICUM 1...**incorporates fundamental theories and techniques learned during the first semester in a restaurant setting. Safety, sanitation and cost control concepts are applied. Activities may include day, evening, and weekend requirements. CONDITION: 1031611 Culinary Arts or 313161 or Culinary Technical Diploma or 101092 Hospitality Management program requirements met.

**CULINARY PRACTICUM 2...**will incorporate fundamental theories and techniques learned during the first and second semesters in a restaurant setting. Activities may include day, evening, and weekend requirements. PREREQUISITE: 10109112 Sanitation for Food Service and COREQUISITES: 10316110 Cooking Methods and 10316111 Garde Manager and 10316133 Advanced Patisserie and Desserts

**CULINARY PRACTICUM 3...**incorporates fundamental theories and techniques learned during the first, second and third semesters in a restaurant setting. Activities may include day, evening, and weekend requirements. COREQUISITES: 10316122 Classic and Contemporary French Cuisine

**DINING ROOM AND BEVERAGE SERVICE...**introduces learners to dining room and beverage service including wine, spirits, beer, mixology, and non-alcoholic drinks. Helps learners refine their customer service and meal delivery skills through the study and application of proper, customer-oriented dining room service environments including etiquette, dining room safety, set-up, American and French table service, and menu knowledge skills. Concepts include histories of table service, psychology of the customer, and service sequence.

**EUROPEAN AND FUSION COOKING...**builds on previous semesters and applies skills and methods to production, seasoning, cooking techniques, plate presentation and speed while exploring Central and Eastern Europe, Mediterranean, and Italian cuisine's, along with cuisine's of the Orient, the Pacific Rim, Latin America, Mexico, India, Caribbean Islands, and Sub-Saharan Africa. Student creativity is emphasized along with all ACF standards of professionalism. Safety, sanitation, and cost control concepts are applied. PREREQUISITE: 10316125 Culinary Practicum 3

**GARDE MANGER...**includes basic concepts of timing, seasoning and fine garnishing. Focus is placed upon the preparation and plating of appetizers and hors d'oeuvre, salads, vegetables, fruits, dressings, garnishing and displays. The learner will participate in a variety of class projects and catering assignments. Teamwork, communication skills, sanitation, safety, cost control, professionalism are emphasized. PREREQUISITE: 10109105 or 10316105 Culinary Practicum 1

**INTRODUCTION TO BAKING AND PASTRY...**introduces learners to the principles and techniques used in the preparation of high-quality baked goods and pastries. Students develop skills in breads, muffins, biscuits, custards, pies, cakes, pastries and specialized desserts. Skills include creaming, blending, meringues, straight dough, custards and frozen desserts. Safety, sanitation and cost control concepts are applied.

**INTRODUCTION TO STOCKS, SOUPS, AND SAUCES...**continues with fundamental principles of classic stocks, soups, and hot and cold sauces. The traditional mother and small sauces are covered. Stabilizing and thickening methods include roux, beurre manie, arrowroot, and puree, reduction, and emulsion techniques. Students practice in the use of tools, utensils, and equipment emphasizing safety and sanitation. CONDITION: 103161 or 103161Z Culinary Arts or 313161 or 313161Z Culinary Technical Diploma program requirements met and PREREQUISITE: 10316102 Skill Development

**MENU PLANNING AND COST CONTROLS...**includes review and application of essential kitchen cost and quality management skills with an emphasis on menu development, mathematics, and profitable production. Examines culinary mathematics, HACCP, standardized recipe development, recipe and menu costing, inventory, principles of cost efficient purchasing and receiving, along with a variety of approaches used in mastering the overall cost of kitchen operations. PREREQUISITE: 10316114 Culinary Practicum 2

**NUTRITION...**examines basic principles of nutrition and explores the nutritional needs for various populations including children, teens, the aging, vegetarians, sports enthusiasts, and those with conditions such as obesity, heart disease, diabetes, gastrointestinal disorders, hypertension and food allergies. Recipe modification, food quality and menu planning for these populations is a focus. Safety, sanitation and cost control concepts are applied. This course includes a service learning component.

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PRODUCT IDENTIFICATION AND PURCHASING...**through identification, the study of origins and seasonality, discussion of quality, use, safe handling and fabrication, learners will explore vegetables, seafood, meats, fruits, herbs, spices, oils, vinegar and the nature of taste and flavor. The USDA grading system and butchery concepts are included. Safety, sanitation and cost control concepts are applied.

**SANITATION FOR FOOD SERVICE...**provides face to face food safety training, testing and materials to food service managers. The Serv Safe Manager certification test is included and a passing score earns the Serv Safe Food Protection Manager Certification.

**SKILL DEVELOPMENT...**introduces the professional kitchen in a real restaurant setting. Fundamental theories of cooking and duties are explored. Knife skills and safety are applied including classic cuts, boning, filet and fabrication techniques. Content includes mise en place for events and menu production, preparing stocks, basic bread baking, timing, multi-tasking, and terminology. Students will practice the use of tools, utensils and equipment emphasizing safety and sanitation. CONDITION: 103161 Culinary Arts or 313161 Culinary Technical Diploma or 303162 Culinary and Baking Basics Technical Diploma program requirements met

## Program Number 10-316-1 Associate Degree in Applied Science • Four Terms

### ABOUT THE PROGRAM

If you are creative, enjoy the constantly evolving food service industry, work well with people, and have a love of food, the Lakeshore Culinary Institute may be the best place to launch your career. Graduates of the program become chefs, independent restaurateurs, bakers or pastry chefs, sales staff for the food industry, food service managers, and corporate chefs. The program is offered at Bistro 712 on Sheboygan's Riverfront in a working restaurant setting. Students enjoy class sizes of 12 and rapid progression to graduation through four consecutive 15-week semesters. The program is rich with practical experience in American regional and international cuisines. Courses are offered in traditional and blended delivery. The program requires day, evening, and some Saturday hours.

### PROGRAM OUTCOMES

- Apply principles of safety and sanitation in food service operations.
- Apply principles of nutrition.
- Demonstrate culinary skills.
- Manage food service operations.
- Plan menus.
- Analyze food service financial information.
- Relate food service operations to sustainability.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10316101	Product Identification and Purchasing	2
10316102	Skills Development	3
10316104	Introduction to Baking and Pastry	3
10316105	Culinary Practicum 1	2
10109112	Sanitation for Food Service	1
10109108	Dining Room and Beverage Service	2
10801196	Oral/Interpersonal Communication OR	3
	10801198 Speech	
		<b>16</b>
<b>Term 2</b>		
10316133	Advanced Patisserie and Desserts	2
10316110	Cooking Methods	3
10316111	Garde Manger	2
10316114	Culinary Practicum 2	2
10809172	Introduction to Diversity Studies OR	3
	10809196 Introduction to Sociology	
10316107	Introduction to Stocks, Soups and Sauces	2
		<b>14</b>
<b>Term 3</b>		
10316122	Classic and Contemporary French Cuisine	3
10316123	Menu Planning and Cost Controls	3
10316125	Culinary Practicum 3	2
10316132	Culinary Leadership	2
10806112	Principles of Sustainability OR 10804123	3
	Math with Business Applications	
10316112	Catering, Buffet and Quantity Food	2
	Production	
		<b>15</b>
<b>Term 4</b>		
10316121	Advanced Garde Manger and Catering	3
10316135	European and Fusion Cooking	3
10316136	Nutrition	1
10316134	Culinary Internship	2
10801195	Written Communications OR 10801136	3
	English Composition 1	
10809198	Introduction to Psychology	3
		<b>15</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**ADVANCED GARDE MANGER AND CATERING**...covers executing finer techniques in smaller quantities, to allow learners to explore Charcuterie items including sausages, cured and smoked meats. Compound salads, terrines, pates, canapés, and vegetable and fruit displays are covered. Presentation techniques are emphasized including ice sculpting. Safety, sanitation and cost control concepts are applied. PREREQUISITES: 10316114 Culinary Practicum 2

**ADVANCED PATISSERIE AND DESSERTS**...includes advanced styles of pastries and desserts, per assignment and in group projects-for our restaurant menu and for a variety of assigned events. Content includes artisan bread production, along with the preparation, plating, garnishing and display of a variety of frozen desserts, ice creams, gelatos, crepes, patisserie, tarts, flans, cakes, tortes, custards, truffles & classic dessert sauces.

**CATERING, BUFFET, AND QUANTITY FOOD PRODUCTION**...building on Garde Manger, learners examine the execution of banquets and catering events. Principles of large group menus, contemporary batch cookery, multiple station service, on demand preparation and volume feeding operations are covered. Safety, sanitation and cost control concepts are applied. COREQUISITE: 10316111 Garde Manager

**CLASSIC AND CONTEMPORARY FRENCH CUISINE**...is a more advanced course, including technique, cooking methods, French sauces, line cooking, plating, and how the practice of those skills finds relevance in the professional restaurant kitchen. Students explore the history, culture, and techniques of specific regions in France and many countries influenced by French cooking. Bistro recipes are developed, field tested and applied. Prerequisites: 10316114 Culinary Practicum 2

**COOKING METHODS**...explores the advanced professional kitchen, covering soups, sauces and cooking methods. Content includes stock preparation, reduction techniques and a wide variety of classic soups, in addition to contemporary sauce preparation, the 5 Mother Sauces and their many derivatives. Adv. cooking methods are applied to batch and single entree preparation. Styles of plating are explored. PREREQUISITES: 10109112 Sanitation for Food Service

**CULINARY INTERNSHIP**...applies program objectives and competencies under supervision in culinary settings, preparing foods that are cooked to order. Activities may include day, evening, and weekend requirements. Students enhance the learning experience through journal writing and other written assignments. A final program portfolio is required per rubric. COREQUISITES: 10316121 Advanced Garde Manager and Catering and 10316135 European and Fusion Cooking

**CULINARY LEADERSHIP**...includes review and application of industry-specific skills needed to master the effective management of a profitable and efficient culinary operation. Includes recipe and product development, menu scripting, time management, principles of leadership, staff motivation, developing a community of excellence, staff scheduling, writing a business plan, developing standard operating procedures, resume and portfolio development, professional development planning, interviewing and public speaking skills. COREQUISITE: 10316123 Menu Planning and Cost Control

**CULINARY PRACTICUM 1**...incorporates fundamental theories and techniques learned during the first semester in a restaurant setting. Safety, sanitation and cost control concepts are applied. Activities may include day, evening, and weekend requirements. CONDITION: 103161 Culinary Arts or 313161 or Culinary Technical Diploma or 101092 Hospitality Management program requirements met.

**CULINARY PRACTICUM 2**...will incorporate fundamental theories and techniques learned during the first and second semesters in a restaurant setting. Activities may include day, evening, and weekend requirements. PREREQUISITE: 10109112 Sanitation for Food Service and COREQUISITES: 10316110 Cooking Methods and 10316111 Garde Manager and 10316133 Advanced Patisserie and Desserts

**CULINARY PRACTICUM 3**...incorporates fundamental theories and techniques learned during the first, second and third semesters in a restaurant setting. Activities may include day, evening, and weekend requirements. COREQUISITES: 10316122 Classic and Contemporary French Cuisine

**DINING ROOM AND BEVERAGE SERVICE**...introduces to dining room and beverage service including wine, spirits, beer, mixology, and non-alcoholic drinks. Helps refine their customer service & meal delivery skills through the study and application of proper, customer-oriented dining room service environments including etiquette, dining room safety, set-up, American & French table service, and menu knowledge skills. Concepts include histories of table service, psychology of the customer, and service sequence.

**EUROPEAN AND FUSION COOKING**...builds on previous semesters and applies skills and methods to production, seasoning, cooking techniques, plate presentation and speed while exploring Central and Eastern Europe, Mediterranean, and Italian cuisine's, along with cuisine's of the Orient, the Pacific Rim, Latin America, Mexico, India, Caribbean Islands, and Sub-Saharan Africa. Student creativity is emphasized along with all ACF standards of professionalism. Safety, sanitation, and cost control concepts are applied. PREREQUISITE: 10316125 Culinary Practicum 3

**GARDE MANGER**...includes basic concepts of timing, seasoning and fine garnishing. Focus is placed upon the preparation and plating of appetizers and hors d'oeuvre, salads, vegetables, fruits, dressings, garnishing and displays. The learner will participate in a variety of class projects and catering assignments. Teamwork, communication skills, sanitation, safety, cost control, professionalism are emphasized. PREREQUISITE: 10109105 or 10316105 Culinary Practicum 1

**INTRODUCTION TO BAKING AND PASTRY**...introduces learners to the principles and techniques used in the preparation of high-quality baked goods and pastries. Students develop skills in breads, muffins, biscuits, custards, pies, cakes, pastries and specialized desserts. Skills include creaming, blending, meringues, straight dough, custards and frozen desserts. Safety, sanitation and cost control concepts are applied.

**INTRODUCTION TO DIVERSITY STUDIES**...introduces learners to the study of diversity from a local to a global environment using a holistic, interdisciplinary approach. Encourages self-exploration and prepares the learner to work in a diverse environment. In addition to an analysis of majority/minority relations in a multicultural context, the primary topics of race, ethnicity, age, gender, class, sexual orientation, disability, religion are explored. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**INTRODUCTION TO STOCKS, SOUPS, AND SAUCES**...continues with fundamental principles of classic stocks, soups, and hot and cold sauces. The traditional mother and small sauces are covered. Stabilizing and thickening methods include roux, beurre manie, arrowroot, and puree, reduction, and emulsion techniques. Students practice in the use of tools, utensils, and equipment emphasizing safety and sanitation. CONDITION: 103161 or 103161Z Culinary Arts or 313161 or 313161Z Culinary Technical Diploma program requirements met and PREREQUISITE: 10316102 Skill Development

**MENU PLANNING AND COST CONTROLS**...includes review and application of essential kitchen cost and quality management skills with an emphasis on menu development, mathematics, and profitable production. Examines culinary mathematics, HACCP, standardized recipe development, recipe and menu costing, inventory, principles of cost efficient purchasing and receiving, along with a variety of approaches used in mastering the overall cost of kitchen operations. PREREQUISITE: 10316114 Culinary Practicum 2

**NUTRITION**...examines basic principles of nutrition and explores the nutritional needs for various populations including children, teens, the aging, vegetarians, sports enthusiasts, and those with conditions such as obesity, heart disease, diabetes, gastrointestinal disorders, hypertension and food allergies. Recipe modification, food quality and menu planning for these populations is a focus. Safety, sanitation and cost control concepts are applied. This course includes a service learning component.

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PRINCIPLES OF SUSTAINABILITY**...prepares students to develop sustainable literacy, analyze interconnections among physical and biological sciences and environmental systems, summarize effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal/recycling in the U.S., and analyze approaches used by your community. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PRODUCT IDENTIFICATION AND PURCHASING**...through identification, the study of origins and seasonality, discussion of quality, use, safe handling and fabrication, learners will explore vegetables, seafood, meats, fruits, herbs, spices, oils, vinegar and the nature of taste and flavor. The USDA grading system and butchery concepts are included. Safety, sanitation and cost control concepts are applied.

**SANITATION FOR FOOD SERVICE**...provides face to face food safety training, testing and materials to food service managers. The Serv Safe Manager certification test is included and a passing score earns the Serv Safe Food Protection Manager Certification.

**SKILL DEVELOPMENT**...introduces the professional kitchen in a real restaurant setting. Fundamental theories of cooking and duties are explored. Knife skills and safety are applied including classic cuts, boning, filet and fabrication techniques. Content includes mise en place for events and menu production, preparing stocks, basic bread baking, timing, multi-tasking, and terminology. Students will practice the use of tools, utensils and equipment emphasizing safety and sanitation. CONDITION: 103161 Culinary Arts or 313161 Culinary Technical Diploma or 303162 Culinary and Baking Basics Technical Diploma program requirements met

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

### ABOUT THE PROGRAM

The Culinary and Baking Basics Technical Diploma provides an introduction to the growing Baking industry and prepares the learner for an entry-level position in the baking and food service industry. Students will learn the principles and techniques used in the preparation of high-quality baked goods and pastries, maintain sanitation standards and work with diverse food inventories.

### PROGRAM OUTCOMES

- Apply principles of safety and sanitation in food service operations.
- Apply principles of nutrition.
- Demonstrate culinary skills.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10316101	Product Identification and Purchasing	2
10316102	Skills Development	3
10316104	Introduction to Baking and Pastry	3
10109112	Sanitation	1
		<b>9</b>

**TOTAL 9**

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**INTRODUCTION TO BAKING AND PASTRY**...introduces learners to the principles and techniques used in the preparation of high-quality baked goods and pastries. Students develop skills in breads, muffins, biscuits, custards, pies, cakes, pastries and specialized desserts. Skills include creaming, blending, meringues, straight dough, custards and frozen desserts. Safety, sanitation and cost control concepts are applied.

**PRODUCT IDENTIFICATION AND PURCHASING**...through identification, the study of origins and seasonality, discussion of quality, use, safe handling and fabrication, learners will explore vegetables, seafood, meats, fruits, herbs, spices, oils, vinegar and the nature of taste and flavor. The USDA grading system and butchery concepts are included. Safety, sanitation and cost control concepts are applied.

**SANITATION FOR FOOD SERVICE**...provides face to face food safety training, testing and materials to food service managers. The Serv Safe Manager certification test is included and a passing score earns the Serv Safe Food Protection Manager Certification.

**SKILL DEVELOPMENT**...introduces the professional kitchen in a real restaurant setting. Fundamental theories of cooking and duties are explored. Knife skills and safety are applied including classic cuts, boning, filet and fabrication techniques. Content includes mise en place for events and menu production, preparing stocks, basic bread baking, timing, multi-tasking, and terminology. Students will practice the use of tools, utensils and equipment emphasizing safety and sanitation. **CONDITION:** 103161 Culinary Arts or 313161 Culinary Technical Diploma or 303162 Culinary and Baking Basics Technical Diploma program requirements met

## Program Number 31-091-1 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

Operating a profitable and progressive dairy farm in today's agricultural climate involves learning to work smarter, not just harder. Successful operations are built on solid herds-person skills, effective management skills, and use of technology. If dairy farming is your career dream, completing LTC's Dairy Herd Management program is the way to turn your dream into reality.

### PROGRAM OUTCOMES

- Manage herd nutrition.
- Manage herd reproduction.
- Manage herd health.
- Manage herd/farm business.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Complete On-Farm Placement and Release form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

Each student will be assigned to a farm for supervised, on-the-job training. An internship agreement will be completed and signed by both the student and farm representative. Graduates of LTC's Dairy Herd Management program receive national AI certification.

Please watch for updates on the future Dairy Business Management associate degree at LTC. Graduates of this Dairy Herd Management technical diploma can attend an additional year of classes to achieve this associate degree focusing on Dairy Business Management.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10091102	Dairy Cattle Management	3
10091103	Dairy Reproductive Management	3
10091115	Nutrition Principles - Dairy	3
10091104	On-Farm Internship 1	2
10091117	Animal Records - Dairy	1
10804123	Math with Business Applications	3
		<b>15</b>
<b>Term 2</b>		
10091105	Dairy Feeding Management	3
10091106	Dairy Management Applications	3
10091107	Dairy Employability and Management	3
10091108	Quality Milk Production	3
10091109	On-Farm Internship 2	2
10091113	Dairy Issues and Advocacy	1
		<b>15</b>
		<b>TOTAL 30</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**ANIMAL RECORDS - DAIRY**...introduces learner to records management through hands-on applications including the set-up and use of computerized record-keeping software, completion of sample farm record problems utilizing computerized record-keeping systems, as well as the selection and implementation of various computerized record programs. Software tools, such as PCDART, CowManager, and DairyCOMP 305, will be utilized. COREQUISITE: 10091103 Dairy Reproductive Management

**DAIRY CATTLE MANAGEMENT**...introduces the student to herd health and preventative medicine through understanding cow behavior, signs of illness, metabolic disorders, infectious disease, vaccination programs, and herd records to develop and implement a herd-health protocol. Students will learn and use basic tools and equipment of herd health programs.

**DAIRY EMPLOYABILITY AND MANAGEMENT**...prepares students to be employees and/or managers on the dairy farm setting. Students will learn about setting goals to reach dairy industry benchmarks, practice basic agricultural Spanish phrases, and develop appropriate dairy farm management and conflict-resolution skills. Team-building activities, mock interviews, and job shadowing will develop skills necessary for successful employment. Students will gather and organize all pieces of their portfolio upon completion of the program.

**DAIRY FEEDING MANAGEMENT**...provides the student with proper harvesting and storage practices to ensure the best forage for the cow's diet. Students will learn diet specifications for each step of the cow's life cycle, ration formulations, developing feed inventories, and maximizing resource allocations. PREREQUISITE: 10091115 Nutrition Principles – Dairy

**DAIRY ISSUES AND ADVOCACY**...prepares students to be advocates for the dairy industry. With farming becoming more publicized and scrutinized every day, students will learn how to promote and apply these concepts within the industry. Students will learn the skills to talk and respond to dairy farm issues that the industry faces.

**DAIRY MANAGEMENT APPLICATIONS**...provides students with information to build protocols for dairy farm management. Students will learn about the proper environment, health protocols, and the care of cows in each part of their life cycle. DairyCare 365 and the F.A.R.M. program will also be utilized. One-on-one rotations to selected site farms allow students to learn and practice troubleshooting and problem-solving on the farm.

**DAIRY REPRODUCTIVE MANAGEMENT**...prepares participants for the mating and breeding of the dairy herd. Topics include linear evaluation, selection indexes, anatomy, hormonal cycles, artificial insemination, estrus detection, activity monitors, and genomics. Live cattle for artificial insemination practices are featured.

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**NUTRITION PRINCIPLES - DAIRY**...instructs students in utilizing basic nutrition skills to analyze rations and complete basic ration formulations. This course introduces the principles of nutrition as presented on a comparative species basis including characteristics, physiological functions, interrelationships, and deficiency symptoms as they pertain to carbohydrates, fats, proteins, mineral elements, and vitamins. COREQUISITE: 10804123 Math with Business Apps

**ON-FARM INTERNSHIP 1**...provides the student with the ability and skills to perform industry expectations as a dairy herdsman, including milking, feeding, calf care, scheduling, employer/employee communications, and general farm duties. Students work with their internship farm to complete the internship skills checklist. COREQUISITE: 10091115 Nutrition Principles-Dairy

**ON-FARM INTERNSHIP 2**...provides the student with enhanced skills, beyond the On-Farm Internship 1 course, to perform industry expectations as a dairy herdsman, including milking, feeding, calf care, scheduling, employer/employee communications, and general farm duties. Students work with their internship farm to complete the internship skills checklist. PREREQUISITE: 10091104 On-Farm Internship 1

**QUALITY MILK PRODUCTION**...introduces the student to the process of how milk is produced and how to harvest it for a maximum profit to the farmer, including the major principles of milk secretion, the anatomy and physiology of the udder, milk letdown, proper milking practices, mastitis, efficient milking systems, and how to properly milk cows as well as treat and prevent udder infections.

## Program Number 30-508-2 Technical Diploma • One Term

### ABOUT THE PROGRAM

Think about your last dental visit. Your dentist likely worked closely with a dental assistant to perform your exam or procedures. Dental assistants are vital to the safe and efficient operation of the dental office—they assist the dentist in the treatment room, in the lab, and with business administration. If you're interested in a career that focuses on helping people and offers plenty of variety in the workday, dental assisting is a great choice for you.

### PROGRAM OUTCOMES

- Perform a variety of entry-level supportive dental procedures.
- Manage infection and hazard control.
- Produce diagnostic radiographs/digital images.
- Perform basic laboratory procedures.
- Demonstrate professional behaviors, ethics, and appearance.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete health requirements.
  - Submit Healthcare Provider CPR or Professional Rescuer certification.
  - Complete Functional Abilities Statement of Understanding form.
  - Dental Exam form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

Graduates are eligible to apply for Radiography and Infection Control, two sections of the Dental Assistant National Board Exam. The Chairside section of the exam requires two years of chairside experience. Hepatitis B vaccination is strongly recommended.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
31508302	Dental Chairside	5
31508304	Dental and General Anatomy	2
31508305	Applied Dental Radiography	2
31508306	Dental Assistant Clinical	3
31508307	Dental Assistant Professionalism	1
10508101	Dental Health Safety	1
10508113	Dental Materials	2

**TOTAL 16**

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**APPLIED DENTAL RADIOGRAPHY**...prepares students to operate x-ray units and expose bitewing, periapical, extra oral, and occlusal radiographs. Emphasis is placed on protection against x-ray hazards. Students also process, mount, and evaluate radiographs for diagnostic value. Students also expose digital images and evaluate the image for diagnostic value. In this course students demonstrate competency on a manikin. In addition, students expose bitewing radiographs on a peer and role-play as a patient. COREQUISITES: 31508304 Dental & General Anatomy, 31508307 Dental Professionalism and CONDITION: 305082 Dental Asst admission requirements met

**DENTAL & GENERAL ANATOMY**...prepares dental assistant students to apply fundamentals of general and dental anatomy to informed decision-making and to professional communication with colleagues and patients. COREQUISITES: 31508305 Applied Dental Radiography and 31508307 Dental Assistant Professionalism and CONDITION: 305082 Dental Assistant admission requirements met

**DENTAL ASSISTANT CLINICAL**...allows students to apply the skills developed in Dental Health Safety, Dental Chairside, Dental Materials, Dental Radiography, and Professionalism in a clinical setting with patients. It emphasizes the integration of core abilities and basic communication skills. COREQUISITE: 10508113 Dental Mtls, 31508302 Dental Chairside, 31508304 Dent/Gen Anat, 31508305 Appl Dental Radio, 31508307 Dental Prof, 10508101 Dent Hlth Sfty, and CONDITION: 305082 Dental Asst admission requirements met

**DENTAL ASSISTANT PROFESSIONAL**...prepares dental assistant students for professional success in a dental practice or another dental health care environment. Students develop professional appearance and image. More importantly, they learn to work within the ethical guidelines and legal framework. In preparation for entering the work force, dental assistants customize or develop their portfolios and lay out an on-going professional development plan. COREQUISITES: 31508304 Dental & General Anatomy, 31508305 Applied Dental Radiography and CONDITION: 305082 Dental Assistant admission requirements met

**DENTAL CHAIRSIDE**...prepares dental assistant students to chart oral cavity structures, dental pathology, and restorations; assist dentist with basic dental procedures including examinations, pain control, amalgam restoration, and cosmetic restoration. Students will also develop the ability to educate patients about preventative dentistry, brushing/flossing techniques, and dental procedures using lay terminology. Students will apply decoding strategies to the correct use and interpretation of dental terminology. COREQUISITE: 31508306 Dental Asst Clin, 31508304 Dent/Gen Anat, 31508305 Appl Dent Radio, 31508307 Dental Prof, 10508101 Dental Hlth Sfty, 10508113 Dental Mtls and CONDITION: 305082 Dental Asst admissions requirements met

**DENTAL HEALTH SAFETY**...prepares dental auxiliary students to respond proactively to dental emergencies, control infection, prevent disease, adhere to OSHA Standards, and safely manage hazardous materials. Students also take patient vital signs and collect patient medical/dental histories. CPR certification is a prerequisite; students will be required to show proof of certification before beginning the course. CONDITION: 305082 Dental Asst admission requirements met

**DENTAL MATERIALS**...prepares dental auxiliary students to handle and prepare dental materials such as liners, bases, cements, amalgam, resin restorative materials, gypsum products, and impression materials. They also learn to take alginate impressions on manikins and clean removable appliances. COREQUISITE: 10508101 Dental Health Safety and CONDITION: 305082 Dental Assistant admission requirements met

## Program Number 10-307-1

### Associate Degree in Applied Science • Four Terms

#### ABOUT THE PROGRAM

The Early Childhood Education program prepares students to work as teacher-caregivers in early childhood settings. It combines hands-on fieldwork in area centers with related academic work at the college. Graduates become responsible for the care and education of children in the birth-to-eight-years age range. They create and maintain safe and healthy play environments, guide behavior, plan and implement learning activities, and work cooperatively with staff and parents.

#### PROGRAM OUTCOMES

- Apply child development theory to practice
- Cultivate relationships with children, family and the community
- Assess child growth and development
- Use best practices in teaching and learning
- Demonstrate professionalism
- Integrate health, safety and nutrition practices

#### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

#### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

#### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Complete health requirements.
  - Submit Infant/Child CPR/AED certification to program staff.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

#### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

#### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

#### SPECIAL NOTE

Introductory Practicum, Intermediate Practicum, Preschool Practicum and Advanced Practicum students are required to attend all course reflections to receive required trainings. (36 hours of lecture + 72 hours of field experience for Introductory Practicum, Intermediate Practicum, Preschool Practicum and Advanced Practicum). Students successfully completing year one of the associate degree program are able to graduate with a Child Care Services technical diploma. See advisor for details.

#### CONTACT

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Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10307148	ECE: Foundations of Early Childhood Education	3
10307151	ECE: Infant & Toddler Development	3
10307174	ECE: Introductory Practicum	3
10307110	ECE: Social Studies, Art & Music	3
10801195	Written Communications OR 10801136 English Composition 1	3
		<b>15</b>
<b>Term 2</b>		
10307179	ECE: Child Development	3
10307188	ECE: Guiding Children's Behavior	3
10307177	ECE: Intermediate Practicum	3
10307108	ECE: Early Language & Literacy	3
10307167	ECE: Health, Safety, and Nutrition	3
10809172	Introduction to Diversity Studies	3
		<b>18</b>
<b>Term 3</b>		
10307112	ECE: STEM	3
10307195	ECE: Family & Community Relationships	3
10307175	ECE: Preschool Practicum	3
10804107	College Mathematics	3
10809196	Introduction to to Sociology	3
		<b>15</b>
<b>Term 4</b>		
10307187	ECE: Children with Differing Abilities	3
10307199	ECE: Advanced Practicum	3
10801198	Speech	3
10809198	Introduction to Psychology	3
		<b>12</b>
		<b>TOTAL 60</b>

## *Curriculum Modifications Pending State Approval*

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**COLLEGE MATHEMATICS**...is designed to review and develop fundamental concepts of mathematics pertinent to the areas of: 1) arithmetic and algebra; 2) geometry and trigonometry; and 3) probability and statistics. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators. **PREREQUISITE:** 10834109 Pre-Algebra or Math placement assessment equivalent

**ECE: ADVANCED PRACTICUM**...demonstrate competence in supporting child development through observation, assessment and implementation of teaching strategies as you work in and learn about and apply the course competencies in an actual early childhood setting. You will demonstrate a high level of skill in fostering relationships with children, families and early childhood professionals, and use skills learned in a lead teacher role to develop a career plan to transition from student to early childhood education professional. **PREREQUISITE:** 10307175 ECE: Preschool Practicum & 10307177 ECE: Intermediate Practicum and **CONDITION:** 103071 ECE Admission Requirements Met

**ECE: CHILD DEVELOPMENT**...examines child development within the context of the early childhood education setting. Course competencies include: integrate strategies that support diversity, cultural responsiveness, and anti-bias perspectives; analyze social, cultural, and economic influences on child development; summarize child development theories; analyze development of children ages three through five; analyze development of children ages five through eight; relate child development research findings to teaching practice; analyze the role of heredity and the environment; examine the role of brain development in early learning (ages 3-8); examine developmental and environmental assessment strategies for children ages 3-8.

**ECE: CHILDREN WITH DIFFERING ABILITIES**...focuses on the child with differing abilities in an early childhood education setting. Course competencies include: integrate strategies that support diversity, cultural responsiveness, and anti-bias perspectives; promote inclusive programs for young children; apply legal and ethical requirements including, but not limited to, ADA and IDEA; examine the consultation process to embed intervention in natural based settings; differentiate between typical and exceptional development; analyze the differing abilities of children with physical, cognitive, health/medical, communication, and/or behavioral/emotional disorders; identify community and professional resources; interpret an individual educational plan (IEP/IFSP) for children with developmental differences; adapt curriculum to meet the needs of children with developmental differences; examine strategies for cultivating partnerships with families who have children with developmental differences.

**ECE: FAMILY AND COMMUNITY RELATIONSHIPS**...examine the role of relationships with family and community in early childhood education. Course competencies include: implement strategies that support diversity, cultural responsiveness, and anti-bias perspectives when working with families and community; analyze contemporary family patterns and trends; identify strategies to strengthen and support families; explore effective communication strategies; discover strategies for developing respectful and reciprocal relationships with families; analyze strategies to promote family engagement in early childhood education programs; explore a variety of formats for meeting with families in their contexts; advocate for children and families; and explore community resources that provide a range of services for children and families.

**ECE: FOUNDATIONS OF EARLY CHILDHOOD EDUCATION**...introduces you to the early childhood profession. Course competencies include: explore the concepts of diversity, cultural responsiveness, and anti-bias as it relates to early childhood education, investigate the history of early childhood education, examine regulatory requirements for early childhood education programs in WI, summarize types of early childhood education settings, identify the components of a quality early childhood education program, summarize responsibilities of early childhood education professionals, explore early childhood curriculum models and examine the critical role of play as it relates to developmentally appropriate practice.

**ECE: GUIDING CHILDREN'S BEHAVIOR**...examines positive strategies to guide children's behavior in the early childhood education setting. Course competencies include: integrate strategies that support diversity, cultural responsiveness, and anti-bias perspectives; analyze techniques for and effects of strong relationship-building with children and families; identify positive and proactive guidance principles and techniques to support children; analyze environmental influences on child behavior; identify strategies that support children's active engagement in the learning environment; identify strategies that proactively teach emotional literacy and regulation techniques; identify strategies that proactively teach friendship skills; identify strategies that proactively teach children calming, relaxation, and problem-solving techniques; utilize observation and assessment techniques to assess and interpret behavior; create a behavior support plan based on a functional behavior assessment; create a guidance philosophy. This course meets the requirements of the "24 hour Wisconsin" Pyramid Model training.

**ECE: HEALTH, SAFETY AND NUTRITION**...examines the topics of health, safety, and nutrition within the context of the early childhood educational setting. Course competencies include: integrate strategies that support diversity, cultural responsiveness, and anti-bias perspectives; examine governmental regulations and professional standards as they apply to health, safety, and nutrition; plan a safe early childhood environment; plan a healthy early childhood environment; plan nutritionally sound menus; examine child abuse and neglect issues and mandates; describe Sudden Infant Death Syndrome (SIDS) risk reduction strategies, describe strategies to prevent the occurrence of Shaken Baby Syndrome (SBS); incorporate health, safety, and nutrition concepts into the children's curriculum.

**ECE: INFANT AND TODDLER DEVELOPMENT**...will study infant & toddler development as it applies to an early childhood education setting. Course competencies include: integrate strategies that support diversity, cultural responsiveness, and anti-bias perspectives; analyze development of infants & toddlers (conception to 36 months); correlate prenatal and postnatal conditions with development; summarize child development theories; analyze the role of heredity and the environment; examine culturally & developmentally appropriate environments for infants & toddlers, examine the role of brain development in early learning (conception through 36 months); examine caregiving routines as curriculum; and examine developmental & environmental assessment strategies for infants & toddlers.

**ECE: INTRODUCTORY PRACTICUM**...will learn about and apply the course competencies in an actual early childhood setting. You will explore the standards for quality early childhood education, demonstrate professional behaviors, and meet the requirements for training in the Wisconsin Model Early Learning Standards. **CONDITION:** 103071 ECEducation Admission Requirements Met or 313071 CCS Admission Requirements Met and **PREREQUISITE:** 10307167 ECE: Health, Safety and Nutrition

**ECE: EARLY LANGUAGE AND LITERACY**...explores strategies to encourage the development of early language and literacy knowledge and skill building in children birth to 8 yrs of age. Learners will investigate the components of literacy including; literacy and a source of enjoyment, vocabulary & oral language, phonological awareness, knowledge of print, letters & words, comprehension and an understanding of books and other texts. Theories and philosophies regarding children's language and literacy development will be addressed. Dual language learning will be examined within the context of developmentally appropriate practices. Assessment tools for early language and literacy acquisition will be reviewed.

**ECE: INTERMEDIATE PRACTICUM**...will be implementing regulations and standards for quality early childhood education, applying knowledge of child development and positive guidance, utilizing observation and assessment techniques, and assessing developmentally appropriate environments for children. **PREREQUISITE:** 10307174 ECE: Introductory Practicum and **CONDITION:** 103071 Early Childhood Education or 313071 Child Care Services program admissions requirements met

**ECE: PRESCHOOL PRACTICUM**...will apply as the capstone course in The Registry Preschool Credential. You will be placed or working in an early childhood setting with 3-5 yr old children and create a portfolio that prepares you for The Registry commission. You will be implementing regulations and standards for quality early childhood education, applying knowledge of child development and positive guidance, utilizing observation and assessment techniques, and assessing developmentally appropriate environments for preschoolers. **PREREQUISITE:** 10307174 ECE: Introductory Practicum and **CONDITION:** 103071 Early Childhood Education or 313071 Child Care Services prog admissions req met

**ECE: SOCIAL STUDIES, ART, AND MUSIC**...will focus on beginning level curriculum development in the specific integrated content areas of social studies, art, music, & movement (SSAMM).

**ECE: STEM**...will focus on beginning level curriculum development in the specific integrated content areas of science, technology, engineering and mathematics.

**INTRODUCTION TO DIVERSITY STUDIES**...introduces learners to study of diversity from a local to a global environment using a holistic, interdisciplinary approach. Encourages self-exploration and prepares learner to work in a diverse environment. In addition to an analysis of majority/minority relations in a multicultural context, the primary topics of race, ethnicity, age, gender, class, sexual orientation, disability, religion are explored. **COREQUISITE:** 10838105 Intro Reading & Study Skills or Reading placement assmnt equiv

**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. **PREREQUISITE:** Reading placement assessment equivalent or **COREQUISITE:** 10838105 Intro to Reading and Study Skills

**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:** 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**SPEECH**...explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and other essential elements of speaking successfully, including the listening process, form the basis of the course. **COREQUISITE:** 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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 & design documents based on subject matter and content. Keyboarding skills required for this course. Also develops critical reading & thinking skills through the analysis of a variety of written documents. **PREREQ:** 10831103 Intro to College Wrtg or Writing plcmnt assessment equiv & **COREQ:** 10838105 Intro Rdg & Study Skills or Reading plcmnt assessment equivalent

## Program Number 10-620-1 Associate Degree in Applied Science • Four Terms

### ABOUT THE PROGRAM

Change is constant. Change is rapid. In the world of manufacturing technology change brings more complex systems of assembly, control measurement, and material processing of manufactured products. If you're good at problem solving, like working with automated manufacturing equipment, and you're looking forward to work that continuously challenges you to keep growing your knowledge and skills—consider an always-evolving career in electro-mechanical technology.

### PROGRAM OUTCOMES

- Perform work safely.
- Troubleshoot electrical and mechanical systems and devices.
- Repair electrical and mechanical systems.
- Communicate technical information.
- Integrate electrical and mechanical systems and devices.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

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### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

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Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10620122	Industrial Wiring	2
10620103	Fluid Power 1	2
10620169	Robotic Mechanical Maintenance	1
10620105	DC Fundamentals	2
10804113	College Technical Math 1A	3
10462107	Tools and Measurement	1
10620135	Electrical Robotic Maintenance	1
10801195	Written Communications	3
		<b>15</b>
<b>Term 2</b>		
10620104	Fluid Power 2	3
10620138	Programmable Controllers - Allen Bradley	3
10620141	Industrial Controls and Motors	3
10620110	AC Fundamentals	2
10806154	General Physics 1	4
10801196	Oral/Interpersonal Communication	3
		<b>18</b>
<b>Term 3</b>		
10620130	Mechanical Drive Systems	3
10620140	Programmable Controllers-Allen Bradley Advanced	2
10620147	Electronic Devices/Transducers	2
10620164	Electromechanical Systems	2
10620168	Robotics Introduction	2
10620193	NEC Codes	1
10620194	Touch Screen Applications	2
10620198	Industrial Networks	2
		<b>16</b>
<b>Term 4</b>		
10620171	Robotics Advanced	2
10620192	Frequency Drives	1
10620195	Industrial Troubleshooting	1
10620196	Industrial Applications	4
10620197	Analog Controls	2
10620199	Integration of Manufacturing	2
10809196	Introduction to Sociology OR 10809195 Economics (3 cr)	3
10809198	Introduction to Psychology	3
		<b>18</b>
		<b>TOTAL 67</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 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, apply the elements and properties of basic measuring circuits, and describe transformer characteristics.

**ANALOG CONTROLS...**introduces instrumentation used for process control. The student will test, calibrate, install, and commission transmitters in varied processes. PREREQUISITE: 10620110 AC Fundamentals, 10620141 Ind Cntrls and Motors, 10620140 PCLs Advanced, 10620194 Touch Screen Apps, 10620147 Elec Devices/Transducers

**COLLEGE TECHNICAL MATHEMATICS 1A...**prepares the student to solve linear, quadratic, and relational equations; graph; formula rearrangement; solve systems of equations; percent; proportions; and operations on polynomials. Emphasis will be on the application of skills to technical problems. PREREQUISITES: 10834110 Elementary Algebra w Apps or 10804107 College Mathematics or 31457318 Ind Mtrc Trades Math or 31420320 Machine Tool Math or math placement assessment equivalent

**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.

**ELECTRICAL ROBOTIC MAINTENANCE...**investigates error codes using the Fanuc A size cabinet with a R30iB controller. Students will identify the cause of the various codes and be trained in the repair. Students will also be trained in motor / gear replacement and robot mastering. COREQUISITE: 10620169 Robotic Mechanical Maintenance

**ELECTROMECHANICAL SYSTEMS...**prepares the student to communicate with, tune, run, and troubleshoot Allen-Bradley servos; utilize electrical control of hydraulic systems, explore PID control of motor speed; and investigate open and closed loop control systems. PREREQUISITES: 10620104 Fluid Power 2 and 10660110 AC Fundamentals

**ELECTRONIC DEVICES/TRANSDUCERS...**prepares the student to relate numbering systems with their functions in Electrical Ladder Diagrams and Data Transmission; gain an understanding of temperature and temperature sensing devices, weighing systems, ultrasonic and radar level detection, measuring flow, and pressure. The student will develop the ability to explain the operation of transducers that measure process variables and the transmitters that interface to industrial control systems. Transmitters will be analyzed, configured and calibrated to properly indicate the physical characteristic being measured and provide the information to control systems. PREREQUISITES: 10660110 AC Fundamentals

**FLUID POWER 1...**prepares the learner to identify hydraulic and pneumatic component symbols; adjust a pressure relief valve; analyze the operation of a pilot operated relief valve; analyze Pascal's law; evaluate flow, velocity, work and power in industrial hydraulic and pneumatic circuits; analyze meter-in, meter-out, and bypass flow control circuits; identify basic hydraulic and pneumatic control valves; and assemble hydraulic circuits. COREQUISITES: 10804115 College Technical Math 1 or 10804114 College Tech Math 1A

**FLUID POWER 2...**enhances the learner's ability to read schematics containing fluid power component symbols; assemble systems using schematics; analyze system's operation using a schematic; evaluate the general characteristics and terms of fluids under pressure, fluid conditioning, conductors, reservoirs, accumulators, pressure control; and troubleshoot malfunctioning pressurized systems. PREREQUISITE: 10620103 Fluid Power 1 or 10620155 Industrial Maintenance Hydraulics and Pneumatics

**FREQUENCY DRIVES...**prepares the learner to explain the function, construction and troubleshoot frequency drives as well as select and change parameters to meet operational characteristics for the drive application. PREREQUISITE: 10620141 Ind Controls & Motors

**GENERAL PHYSICS 1...**presents the applications and theory of basic physics principles. This course emphasizes problem-solving, laboratory investigation, and applications. Topics include unit conversions and analysis, vectors, translational and rotational kinematics, translational and rotational dynamics, heat and temperature, and harmonic motion and waves. PREREQUISITE: 10804113 College Tech Math 1A, 10804115 College Tech Math 1, or 10804118 Intermediate Algebra, or Math placement assessment equivalent.

**INDUSTRIAL APPLICATIONS...**prepares the learner to configure, install, troubleshoot and maintain automation equipment in a "real world" setting. This course will include writing and configuring automation equipment, wiring and configuring industrial networks, wiring, programming and troubleshooting PLCs and touchscreens. These practices will be applied to create and maintain a manufacturing process. This course is highly computer based. PREREQUISITE: 10620140 Prog Cntrls AB Adv, 10620104 Fluid Power 2, 10620194 Touch Screen Appl, 10620168 Robotics Intro, 10620193 NEC Codes, 10620198 Indust Networks and COREQUISITE: 10620192 Freq Drives and 10620195 Indust Troubleshooting

**INDUSTRIAL CONTROLS AND MOTORS...**prepares the learner to select control devices by function and operation; illustrate electrical circuits using symbols, diagrams, and abbreviations; explain the operation of magnetic solenoids and apply motor control techniques and introduces the student to three-phase power motor circuits for industrial applications. COREQUISITE: 10660110 AC Fundamentals and PREREQUISITE: 10620122 Industrial Wiring

**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

**INDUSTRIAL TROUBLESHOOTING...**prepares the learner to conduct effective machine control troubleshooting techniques with an understanding of preventive maintenance methods designed to minimize motor and controls issues between preventive maintenance measures. PREREQUISITE: 10620141 Industrial Controls and Motors

**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.

**INTEGRATION OF MANUFACTURING...**provides student with a detailed examination of automated processes and devices that are integrated together in a manufacturing environment. PREREQUISITE: 10620140 PCLs Adv, 10620194 Touch Screen Apps, 10620147 Elec Devices/Transducers, 10620141 Ind Cntrls & Motors, 10620168 Robotics Intro and COREQUISITE: 10620192 Frequency Drives, 10620198 Ind Networks

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**MECHANICAL DRIVE SYSTEMS...**prepares the learner to use tools and fasteners safely; identify belt and chain drive components; install and adjust belt and chain drives; apply bearing and lubrication information; perform coupling alignment using straight edge, feeler gauge, and dial indicator and laser methods; identify various gear drives; calculate gear ratios; and analyze first-, second-, and third-class levers.

**NEC CODES...**introduces the student to National Electric Codes NFPA 70. Prepares the learner to apply NFPA 70 to motor and control installations and repairs. PREREQUISITE: 10620141 Industrial Controls and Motors

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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, RSLOGIX5000 software. This course is highly computer based. PREREQUISITE: 10620138 Prog Cntrls/AB

**ROBOTIC MECHANICAL MAINTENANCE...**introduces the students to the robot teach pendant and robot jogging. Students will be taught to replace servo motors, recalibrate the robot and back up robot software and programs.

**ROBOTICS ADVANCED...**introduces students to advanced robot programming commands to include use of Fanuc vision on the Fanuc Robots. PREREQUISITE: 10620168 Robotics Introduction

**ROBOTICS INTRODUCTION...**introduces the student to robotic axes, movement control, navigating the teach pendant, robotic frames, basic programming commands such as conditional branching, wait and call instructions.

**TOOLS AND MEASUREMENT...**prepares the learner to use hand tools, precision measuring instruments, and torque tools.

**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. 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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

**Program Number 30-531-3  
Technical Diploma • One Term**

### ABOUT THE PROGRAM

Injuries, trauma, sudden illness—medical emergencies can happen at any time, in any place. Survival often depends on the initial care the injured or severely ill person receives at the scene. If you are calm under pressure, compassionate, good at problem solving, and have the desire to help people in need, a career as an Emergency Medical Technician (EMT) may be an excellent choice for you.

### PROGRAM OUTCOMES

- Use essential ambulance and other emergency equipment.
- Identify and treat common medical conditions and emergencies.
- Identify and treat common injuries, wounds, and burns.
- Utilize stretchers, long boards, and other devices used for moving patients.
- Solve problems in assessing, stabilizing, and transporting patients with various illnesses and injuries.
- Identify medical/legal problems an EMT may face.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete health requirements.
  - Complete Functional Abilities Statement of Understanding form.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
30531301	Emergency Medical Technician Part 1	2
10531102	Emergency Medical Technician Part 2	4
		<b>6</b>

**TOTAL 6**

## *Curriculum Modifications Pending State Approval*

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**EMERGENCY MEDICAL TECHNICIAN PART 1**...provides the foundational knowledge for future Emergency Medical Technicians and Emergency Medical Responders. Topics include: basic human anatomy, performing a patient assessment, traumatic injury management, airway management, and Basic Life Support cardiac resuscitation. Upon successful completion, candidates will be eligible to participate in the National Registry of EMTs Emergency Medical Responder exams for Wisconsin EMR certification.

**EMERGENCY MEDICAL TECHNICIAN PART 2**...advances on the foundation concepts of Part 1 to include pharmacology, pathophysiology, operating an ambulance, and medication administration. Students will also complete a clinical rotation in a hospital Emergency Department. Upon successful completion, candidates will be eligible to participate in the National Registry of EMTs Emergency Medical Technician exams for Wisconsin EMT licensure. CONDITION: 305313 EMT or 315311 EMT Paramedic program requirements met

## Program Number 31-531-1 Technical Diploma • Three Terms

### ABOUT THE PROGRAM

Life can bring about unfortunate events of medical or traumatic emergency; a Paramedic is a highly trained and skilled medical professional ready to assist those in need. Paramedics integrate Advanced Life Support treatment measures into the challenging pre-hospital environment. The Technical Diploma EMT-Paramedic is an entry level educated Paramedic meeting the minimum national educational standards.

### PROGRAM OUTCOMES

- Prepare for incident response and EMS operations.
- Integrate pathophysiological principles and assessment findings for a variety of patient encounters.
- Demonstrate paramedic skills associated with established standards and procedures for a variety of patient encounters.
- Communicate effectively with others.
- Demonstrate professional behavior.
- Meet state and national competency requirements for paramedic credentialing.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete health requirements.
  - Complete Functional Abilities Statement of Understanding form.
  - Complete DMI (District Mutual Insurance) form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

The Lakeshore Technical College Paramedic Program is accredited by the Commission on Accreditation of Allied Health Education Programs ([www.caahep.org](http://www.caahep.org)) upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP). 25400 US Highway 19 N., Suite 158, Clearwater, FL 33756. Phone: 727-210-2350. Web: [www.caahep.org](http://www.caahep.org).

### RELATED PROGRAMS

- Paramedic Technician Associate Degree
- Fire Medic

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
30531301	EMT Part 1	2
10531102	EMT Part 2	4
		<b>6</b>
<b>Spring</b>		
10531911	EMS Fundamentals	2
10531912	Paramedic Medical Principles	4
10531913	Advanced Patient Assessment Principles	3
10531914	Advanced Prehospital Pharmacology	3
10531915	Paramedic Respiratory Management	2
10531916	Paramedic Cardiology 1	1
10531926	Paramedic HPS Lab 1	1
10531930	Paramedic Clinical 1	1
		<b>17</b>
<b>Summer</b>		
10531918	Advanced Emergency Resuscitation	1
10531920	Paramedic Trauma	3
10531922	EMS Operations	1
10531927	Paramedic HPS Lab 2	1
10531928	Paramedic Clinical 2	2
10531932	Paramedic Cardiology 2	3
		<b>11</b>
<b>Fall</b>		
10531919	Paramedic Medical Emergencies	4
10531921	Special Patient Populations	3
10531923	Paramedic Capstone	1
10531929	Paramedic Field Clinical	2
10531931	Paramedic Internship	1
10531933	Paramedic HPS Lab 3	1
		<b>12</b>
		<b>TOTAL 46</b>

## *Curriculum Modifications Pending State Approval*

To contact CoAEMSP:  
8301 Lakeview Parkway, Suite 111-312  
Rowlett, TX 75088  
214-703-8445 Fax 214-703-8992  
[www.coaemsp.org](http://www.coaemsp.org)

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ADVANCED EMERGENCY RESUSCITATION**...provides ACLS and PALS knowledge and skills preparing the student in the integration of comprehensive knowledge of causes and pathophysiology into the management of shock, respiratory failure, respiratory arrest, cardiac arrest, and peri-arrest with intervention to prevent respiratory and/or cardiac arrest if possible. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531916 Paramedic Cardiology

**ADVANCED PATIENT ASSESSMENT PRINCIPLES**...provides knowledge of scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531912 Paramedic Medical Principles

**ADVANCED PREHOSPITAL PHARMACOLOGY**...provides student with comprehensive knowledge of pharmacology required to formulate and administer a pharmacological treatment plan intended to mitigate emergencies and improve the health of the patient. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531913 Advanced Patient Assessment Principles

**EMERGENCY MEDICAL TECHNICIAN PART 1**...provides the foundational knowledge for future Emergency Medical Technicians and Emergency Medical Responders. Topics include: basic human anatomy, performing a patient assessment, traumatic injury management, airway management, and Basic Life Support cardiac resuscitation. Upon successful completion, candidates will be eligible to participate in the National Registry of EMTs Emergency Medical Responder exams for Wisconsin EMR certification.

**EMERGENCY MEDICAL TECHNICIAN PART 2**...advances on the foundation concepts of Part 1 to include pharmacology, pathophysiology, operating an ambulance, and medication administration. Students will also complete a clinical rotation in a hospital Emergency Department. Upon successful completion, candidates will be eligible to participate in the National Registry of EMTs Emergency Medical Technician exams for Wisconsin EMT licensure. CONDITION: 305313 EMT or 315311 EMT Paramedic program requirements met

**EMS FUNDAMENTALS**...provides comprehensive knowledge of EMS systems, safety, well-being, legal issues and ethical issues with intended outcome of improving EMS personnel, patients and the community. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITES: 10531102 EMT Basic or 30531301 EMT Part 1

**EMS OPERATIONS**...provides the knowledge of operational roles and responsibilities to ensure patient, public and EMS personnel safety. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531921 Special Patient Populations

**MEDICAL EMERGENCIES**...provides the student the skills to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a treatment plan for an acutely injured patient. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531918 Advanced Emergency Resuscitation

**PARAMEDIC CAPSTONE**...provides the final opportunity to incorporate knowledge and skills through labs and scenario-based practice and evaluations prior to taking the NREMT written and practical exams. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531922 EMS Operations

**PARAMEDIC CARDIOLOGY 1**...provides the principles of cardiovascular anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and a plan for a patient with a cardiovascular complaint. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531915 Paramedic Respiratory Management

**PARAMEDIC CARDIOLOGY 2**...continues the paramedic's knowledge of cardiology. Incorporates basic and advanced electrocardiogram rhythm interpretation as well as introduces students to Advanced Cardiovascular Life Support (ACLS).

**PARAMEDIC CLINICAL 1**...allows paramedics their first experiences providing advanced level skills and assessments on patients in a healthcare setting. Students will be assigned to an area hospital to begin their clinical training and meeting their assigned clinical competencies. Activities may include rotations within hospital emergency departments, operating rooms, intensive care units, and/or rotations with lab or respiratory staff. COREQUISITE: 10531911 EMS Fundamentals and CONDITION: 15311 Paramedic Technician or 105312 Fire Medic or 315311 EMT Paramedic program admission requirements met

**PARAMEDIC CLINICAL 2**...provides student with the opportunity to enhance their learning through the skills practice in a health care environment experience with actual patients under the supervision of approved preceptors or high-fidelity human patient simulator. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic Program Requirements Met and COREQUISITE: 10531930 Paramedic Clinical 1

**PARAMEDIC FIELD CLINICAL**...provides student with the opportunity to enhance their learning through the practice in the prehospital environment with actual patients under the supervision of approved preceptors. Students will be assigned to an area Paramedic ambulance service provider to incorporate their previously acquired capabilities into prehospital patient care. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic Program Requirements Met and COREQUISITE: 10531918 Advanced Emergency Resuscitation

**PARAMEDIC HPS LAB 3**...provides instruction for continued growth for paramedic students towards mastery in patient assessment, treatment, team management, and ambulance operations during this capstone Human Patient Simulation experience.

**PARAMEDIC HUMAN PATIENT SIMULATION LAB 1**...reinforces student learning through the practice of paramedicine in a controlled environment utilizing high-fidelity human patient simulators and realistic emergency response scenarios with support and guidance of instructors. The student will apply assessment knowledge and demonstrate paramedic level skills in a variety of emergency response scenarios and environments.

**PARAMEDIC HUMAN PATIENT SIMULATION LAB 2**...reinforces student learning through the practice of paramedicine in a controlled environment utilizing high-fidelity human patient simulators and realistic emergency response scenarios with support and guidance of instructors. The student will evaluate patient presentations, formulate treatment plans, reassess interventions, and implement corrective actions by integrating pathophysiological principles and assessment findings. CONDITION: 105311 Paramedic Technician or 105312 Fire Medic or 315311 EMT Paramedic program admission requirements met

**PARAMEDIC INTERNSHIP**...demonstrates to paramedic students their team leadership capabilities while assessing, formulating treatments plans, and delegating tasks to their EMS team members. Students will be assigned to an area paramedic ambulance service to complete requirements during this capstone field internship.

**PARAMEDIC MEDICAL PRINCIPLES**...provides the knowledge of anatomy, physiology and pathophysiology of major human systems while also introducing the students to shock, immunology and bleeding. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531911 EMS Fundamentals

**PARAMEDIC RESPIRATORY MANAGEMENT**...provides specific knowledge pertaining to the respiratory system and to ensure the student is prepared to formulate a field impression and implement a comprehensive treatment plan for a respiratory complaint. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531914 Advanced Prehospital Pharmacology

**PARAMEDIC TRAUMA**...provides the student the skills to integrate assessment findings with principles of anatomy, physiology, epidemiology and pathophysiology to formulate a field impression and implement a treatment plan for an acutely injured patient. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531919 Paramedic Medical Emergencies

**SPECIAL PATIENT POPULATIONS**...provides the student the skills to integrate assessment findings with principles of anatomy, physiology, epidemiology and pathophysiology to formulate a field impression and implement a treatment plan for patient with special needs. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531920 Paramedic Trauma

### ABOUT THE PROGRAM

Energy expenses make up a part of every business' bottom line. Employers are seeking those skilled in monitoring energy consumption with the ability to detect and evaluate energy efficiency opportunities. Graduates of the Energy Management Technology associate degree program are equipped to lead business' energy management initiatives. Energy managers work within a variety of business sectors: utility companies; energy equipment companies; government agencies; and heating, ventilating, air conditioning and refrigeration contractors. Graduates may also find careers as energy auditors, energy management consultants, or energy program coordinators.

### PROGRAM OUTCOMES

- Evaluate the energy use patterns for commercial buildings and recommend energy efficiency and alternative energy solutions for high-energy consuming buildings.
- Troubleshoot, upgrade and maintain the Energy Management Systems (EMS); perform data recovery and backup duties.
- Monitor the efficiency of energy management operations, detecting, where possible, equipment failures.
- Construct energy evaluation technical reports and make presentations for potential project implementation.
- Upload and download information from remote and local networks to aid in the efficiency of energy management.
- Enhance energy management software and prepare program documentation and flow charts.
- Read and comprehend mechanical blueprints and control drawings.
- Respond to calls for heating, ventilating, air conditioning, and exterior lighting service independently; and determine whether to dispatch appropriate staff or to resolve problems remotely via the energy management system.
- Assist in the writing of specifications for additional energy management systems.
- Write technical proposals for energy projects.
- Provide training to campus users and facilities operations staff.

### ADMISSION TO DO'S

- Work with NWTC Admissions Specialist to:
  - Submit application and \$30 fee to NWTC.
  - Complete an assessment for placement (Accuplacer or ACT).
- Meet with NWTC program advisor to discuss program details.
- Meet with LTC program advisor to discuss program details.

### APPROXIMATE COSTS

- \$146 per credit (resident)
- \$205 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](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### SPECIAL NOTE

This program is shared with Northeast Wisconsin Technical College (NWTC) in Green Bay. LTC students follow NWTC's admission process; however, they are able to attend 29 credits at the LTC Cleveland campus. This includes 17 credits in Terms 1 and 2, and 12 credits in Terms 3 and 4. The remainder of the courses noted with \*\* are held at NWTC's Green Bay campus.

### CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### CONTACT

NWTC:  
Cynthia Kothbauer, Program Advisor  
920.498.6311 • [cynthia.kothbauer@nwtc.edu](mailto:cynthia.kothbauer@nwtc.edu)

LTC:  
Don Geiger, Program Advisor  
920.693.1378 • [donald.geiger@gotoltc.edu](mailto:donald.geiger@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10620105	DC Fundamentals	2
10804113	College Tech Math 1A	3
10809172	Introduction to Diversity Studies	3
10480101	Energy Intro-Renew & Sustain (Held at NWTC)	4
10481114	Intro to Energy Management (Held at NWTC)	3
		<b>15</b>
<b>Term 2</b>		
10103121	Excel - Level 1	1
10620110	AC Fundamentals	2
10620138	Programmable Controllers - Allen Bradley	3
10801195	Written Communication	3
10804114	College Tech Math 1B (Held at NWTC)	2
10196187	Project Management (Held at NWTC)	1
10481116	Building Automation Systems (BAS) Networking (Held at NWTC)	3
10605157	Power Electronics 1 (Held at NWTC)	1
		<b>16</b>
<b>Term 3</b>		
10620164	Electromechanical Systems	2
10806154	General Physics 1	4
10403100	Blueprint Reading Intro (Held at NWTC)	1
10481109	Commercial HVACR Analysis (Held at NWTC)	3
10481111	Energy Control Strategies (Held at NWTC)	3
10481115	Lighting Fundamentals (Held at NWTC)	3
10620220	Pumps: Intro to Fluid Moving Devices (Held at NWTC)	1
		<b>17</b>
<b>Term 4</b>		
10801196	Oral/Interpersonal Communication	3
10809198	Introduction to Psychology	3
10481107	Building Energy Simulation (Held at NWTC)	3
10481108	Commercial Energy Analysis (Held at NWTC)	3
10481110	Energy Accounting (Held at NWTC)	2
10481113	Energy Investment Analysis (Held at NWTC)	3
		<b>17</b>
		<b>TOTAL 65</b>

Classes meet at LTC, unless noted to be held at NWTC.

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**AC FUNDAMENTALS**...prepares student to analyze electrical circuits using AC math, analyze AC waveforms, measure & analyze AC power, analyze capacitors & inductors in DC & AC circuits, analyze AC circuits containing reactance and calculate resonance, apply the elements and properties of basic measuring circuits, and describe transformer characteristics.

**BLUEPRINT READING INTRO**...develop the knowledge skills process and understanding of site plans, footings and foundations, floor plans, elevations, below-grade piping, above-grade piping, isometric piping diagrams, schedules and details, electrical floor plans, lighting, ventilating, and air conditioning. Course Typically Offered: Fall

**BUILDING AUTOMATION SYSTEM (BAS) NETWORKING**...presents the fundamentals concepts of data transmission in various media types. Topics include network fundamentals, standards, OSI model, IP protocol, network signal transmission, media, protocols, physical topologies, logical topologies, hardware, typical BAS networks, and typical BAS subnetworks.

**BUILDING ENERGY SIMULATION**...course covers the variety of computer programs available for analyzing the energy performance of commercial buildings including BIN methodology, hourly simulations and an overview of current programs on the market such as RETScreen and eQuest. (PREREQUISITES: 10481109, Commercial HVACR Systems Analysis; 10481111, Energy Control Strategies; 10481115, Lighting Fundamentals) - See more at: <https://classcart.nwtc.edu/Classes/Details?courseId=636#sthash.TVCiLnXc.dpuf>

**COLLEGE TECHNICAL MATHEMATICS 1A**...prepares the student to solve linear, quadratic, and relational equations; graph; formula rearrangement; solve systems of equations; percent; proportions; and operations on polynomials. Emphasis will be on the application of skills to technical problems. PREREQUISITES: 10834110 Elementary Algebra w Apps or 10804107 College Mathematics or 31457318 Ind MtnC Trades Math or 31420320 Machine Tool Math or math placement assessment equivalent

**COMMERCIAL ENERGY ANALYSIS**...emphasis is on the analysis of energy use in commercial buildings including utility bill analysis, audit data, identifying energy efficiency measures, energy savings and investment calculations, audit report writing. (PREREQUISITES: 10481109, Commercial HVACR Systems Analysis; 10481111, Energy Control Strategies, 10481115, Lighting Fundamentals) - See more at: <https://classcart.nwtc.edu/Classes/Details?courseId=637#sthash.CM5Ah93.dpuf>

**COMMERCIAL HVACR ANALYSIS**...identify commercial HVAC system types and the general energy use impact of each type. Calculations of system equipment efficiencies will be used to determine EER, SEER, AFUE, COP, combination and seasonal efficiency in boilers, balance point partial efficiency, BIN analysis. (PREREQUISITES: 10481114, Intro to Energy Management)

**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.

**ELECTROMECHANICAL SYSTEMS**...prepares the student to communicate with, tune, run, and troubleshoot Allen-Bradley servos; utilize electrical control of hydraulic systems, explore PID control of motor speed; and investigate open and closed loop control systems. PREREQUISITES: 10620104 Fluid Power 2 and 10660110 AC Fundamentals

**ENERGY ACCOUNTING**...review of energy units, data gathering for energy accounting utility rates and schedules, energy data organization, adjusted baselines, cost avoidance, load factor, data analysis, data presentation, use of utility energy accounting software. (PREREQUISITES: 10481109, Commercial HVACR Systems Analysis; 10481111, Energy Control Strategies, 10481115, Lighting Fundamentals) - See more at: <https://classcart.nwtc.edu/Classes/Details?courseId=638#sthash.yHO1uCif.dpuf>

**ENERGY CONTROL STRATEGIES**...topics include building system control concepts and devices; including electric, pneumatic and digital controls, emphasis is placed on identifying and understanding control strategies related to energy using systems and methods to estimate energy savings. (PREREQUISITES: 10481114, Intro to Energy Management) Course Typically Offered: Fall

**ENERGY-INTRO RENEW & SUSTAIN**...an overview of various renewable energy technologies and sustainable design practices and their current applications. Emphasis will be placed on policies, renewable energy production, green products and jobs. Course Typically Offered: Fall/Spring

**ENERGY INVESTMENT ANALYSIS**...emphasis on simple payback and life-cycle cost analysis, time value of money, cash flow equivalence, cost-benefit analysis, tax credits, depreciation, inflation and/or escalating fuel costs on energy investments and cost estimating. (PREREQUISITES: 10481109, Commercial HVACR Systems Analysis; 10481111, Energy Control Strategies, 10481115, Lighting Fundamentals) - See more at: <https://classcart.nwtc.edu/Classes/Details?courseId=737#sthash.2KONFtq0.dpuf>

**EXCEL - LEVEL 1**...introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**GENERAL PHYSICS 1**...presents the applications and theory of basic physics principles. This course emphasizes problem-solving, laboratory investigation, and applications. Topics include unit conversions and analysis, vectors, translational and rotational kinematics, translational and rotational dynamics, heat and temperature, and harmonic motion and waves. PREREQUISITE: 10804113 College Tech Math 1A, 10804115 College Tech Math 1, or 10804118 Intermediate Algebra, or Math placement assessment equivalent.

**INTRO TO ENERGY MANAGEMENT**...introduces the basic concepts of energy, utility systems and utility rate structures; defines the need for energy management as an integral part of society at all levels. The course will present the various opportunities available to energy management students. Course Typically Offered: Fall

**INTRODUCTION TO DIVERSITY STUDIES**...introduces learners to the study of diversity from a local to a global environment using a holistic, interdisciplinary approach. Encourages self-exploration and prepares the learner to work in a diverse environment. In addition to an analysis of majority/minority relations in a multicultural context, the primary topics of race, ethnicity, age, gender, class, sexual orientation, disability, religion are explored. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**LIGHTING FUNDAMENTALS**...light sources, luminaries, lighting controls, manufacturer lamp and ballast specifications, lighting power density, lighting-HVAC interactions, retrofit opportunities, cost savings analysis and lighting codes/regulations. Students will critically evaluate lighting systems, luminaries and associated components. Understand and perform various types of lighting calculations. (PREREQUISITES: 10481114, Intro to Energy Management) Course Typically Offered: Fall

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**POWER ELECTRONICS 1: DEVICES**...the device characteristics and applications of thyristors, power transistors, and switching devices.

**PROJECT MANAGEMENT**...the role of project management, developing a project proposal, use of relevant software, working with project teams, sequencing tasks, charting progress, dealing with variations, budgets and resources, implementation, and assessment.

**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.

**PUMPS: INTRO TO FLUID MOVING DEVICES**...this course provides the opportunity for the learner to develop the knowledge, skills, and understanding of pumps, the different classifications of pumps, the inner workings, general maintenance and pumping theory.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

### ABOUT THE PROGRAM

This associate degree program is designed to meet the need for environmental engineering technicians in Northeast Wisconsin. As a program grad, you're equipped with skills to analyze and test water, wastewater, air, and solid waste to ensure environmental protection and compliance while maintaining community health and safety. Typical careers include environmental engineering technician, water and waste water treatment plant and system operator, water resource specialist, environmental lab technician, environment compliance officer, water quality sampler, quality control inspector, and recycling coordinator. Program students have the option to be certified in 40 hour HAZWOPER WDNR Wastewater, Water, and/or Landfill Operator with completion of coursework and independent testing. With additional education, you may become an environmental engineer.

### PROGRAM OUTCOMES

- Identify, monitor, and evaluate environmental hazards.
- Examine the effects of pollution.
- Determine strategies to minimize or prevent waste in order to reduce impact on the environment.
- Create and maintain environmental reports in accordance with applicable standards.
- Utilize applied science and mathematical skills to modify, test, and operate equipment used in the prevention, control, and remediation of environmental issues, including waste and water treatment.
- Perform periodic inspections in compliance with applicable standards.
- Use effective oral and written communication skills.
- Utilize problem solving skills.
- Perform safe work practices.

### ADMISSION TO DO'S

- Work with NWTC Admissions Specialist to:
  - Submit application and \$30 fee to NWTC.
  - Complete an assessment for placement (Accuplacer or ACT).
- Meet with NWTC program advisor to discuss program details.
- Meet with LTC program advisor to discuss program details.

### APPROXIMATE COSTS

- \$146 per credit (resident)
- Other fees vary by program (books, supplies, materials, tools, uniforms, health-related exams, etc.) Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### SPECIAL NOTE

This program is shared with Northeast Wisconsin Technical College (NWTC) in Green Bay. LTC students follow NWTC's admission process; however, they are able to attend 25 credits at the LTC Cleveland campus and the remainder of the credits (45) at NWTC Green Bay.

### CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### CONTACT

NWTC:  
Stephanie Wilson-Wellhouse, Academic Advisor  
920.498.6386 • [stephanie.wilsonwellhouse@nwtc.edu](mailto:stephanie.wilsonwellhouse@nwtc.edu)  
LTC:  
Don Geiger, Academic Advisor  
920.693.1378 • [donald.geiger@gotoltc.edu](mailto:donald.geiger@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10506146	Intro to Environmental Science <i>(Held at NWTC)</i>	3
10506147	Environmental Biology <i>(Held at NWTC)</i>	4
10506168	Intro to GIS <i>(Held at NWTC)</i>	2
10804113	College Technical Math 1A	3
10806134	General Chemistry	4
		<b>16</b>
<b>Term 2</b>		
10506148	Environmental Chemical Analysis <i>(Held at NWTC)</i>	4
10506149	Intro to Environmental Compliance <i>(Held at NWTC)</i>	3
10607237	Intro to Civil Engineering Technology <i>(Held at NWTC)</i>	3
10620155	Industrial Mntc Hydraulics/Pneumatics	3
10804114	College Tech Math 1B <i>(Held at NWTC)</i>	2
10801195	Written Communication	3
		<b>18</b>
<b>Term 3</b>		
10506150	Environmental Microbiology <i>(Held at NWTC)</i>	3
10506151	Wastewater Treatment & Analysis <i>(Held at NWTC)</i>	4
10506152	Industrial Safety & Emergency Response <i>(Held at NWTC)</i>	3
10620220	Pumps: Fluid Moving Devices <i>(Held at NWTC)</i>	1
10607236	AutoCAD & Civil 3D <i>(Held at NWTC)</i>	3
10620138	Programmable Contrlrs-Allen Bradley	3
10801196	Oral/Interpersonal Communication	3
		<b>20</b>
<b>Term 4</b>		
10506163	Solid & Hazardous Waste <i>(Held at NWTC)</i>	2
10506164	Air Pollution Control Systems <i>(Held at NWTC)</i>	2
10506166	Ground Water & Distribution <i>(Held at NWTC)</i>	3
10506167	Surface Water & Distribution <i>(Held at NWTC)</i>	3
10809172	Introduction to Diversity Studies	3
10809198	Introduction to Psychology	3
		<b>16</b>
		<b>TOTAL 70</b>

Term 1 & 2: NWTC classes are held on Tuesdays & Thursdays  
Exception: Intro to Civil and Intro to GIS are on Wednesdays  
Term 3 & 4: NWTC classes are held on Mondays & Wednesdays

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**AIR POLLUTION CONTROL SYSTEMS...**air quality problems, federal and state regulatory mechanisms, and the types of emission control technology currently available. Monitoring emissions and ambient air quality are addressed. Course Typically Offered: Spring

**AUTOCAD AND CIVIL 3D...**covers AutoCAD working with templates, creating and manipulating layers; basic drawing, editing, and inquiry commands; blocks and attributes and plotting; learners will also develop the ability to use AutoCAD Civil 3D in working with survey data, points and surfaces; site design features including parcels, alignments, profiles, grading, quantities and managing data. (PREREQUISITE: acceptance to the Civil Engineering Technology program or Environmental Engineering-Waste & Water Technology program)

**COLLEGE TECHNICAL MATHEMATICS 1A...**prepares the student to solve linear, quadratic, and relational equations; graph; formula rearrangement; solve systems of equations; percent; proportions; and operations on polynomials. Emphasis will be on the application of skills to technical problems. PREREQUISITES: 10834110 Elementary Algebra w Apps or 10804107 College Mathematics or 31457318 Ind MtnC Trades Math or 31420320 Machine Tool Math or math placement assessment equivalent

**ENVIRONMENTAL BIOLOGY...**environmental problems are examined from scientific, ethical, economic and sociological perspectives. Emphasis is placed on protection of the human environment with discussion of environmental issues and environmentally related public health concerns. (PREREQUISITE: Accepted into Environmental Engineering program or preprogram) Course Typically Offered: Fall

**ENVIRONMENTAL CHEM ANALYSIS...**laboratory techniques are performed to determine the suitability of supply sources and purification processes in the water and wastewater industries. (PREREQUISITES: 10806134, General Chemistry with a "C" or better; 10804118, Interm Algebra w/Apps with a "C" or better) Course Typically Offered: Spring

**ENVIRONMENTAL MICROBIOLOGY...**a study of the background and role of bacterial analysis. Sampling and analytic methods including quality control procedures and environmental parameters are studied and related to applicable standards. (PREREQUISITE: 10506147, Environmental Biology) Course Typically Offered: Fall

**GENERAL CHEMISTRY...**covers the fundamentals of chemistry. Topics include the metric system, problem-solving, periodic relationships, chemical reactions, chemical equilibrium, properties of water; acids, bases, and salts; and gas laws. PREREQ: 10804113 Col Tech Math 1A, 10804109 Alg-Gen Chem, 10804195 or 10804115 Col Tech Math 1, 10804107 Col Math, 10804118 Intrm Alg w/Apps, or 10834110 Elem Alg or Math placement assessment equivalent & COREQ: 10838105 Intro Rdg&Stdy Sk or Reading placement assessment equivalent

**GROUND WATER & DISTRIBUTION...**physical, chemical, and biological principles of operation of groundwater and distribution systems. The basic unit processes, control parameters, and mathematical problem-solving related to groundwater facilities and distribution systems are introduced. Laboratory procedures and practices involved with operation of water analysis and treatment. (PREREQUISITES: 10506148, Environmental Chem Analysis; 10804118, Interm Algebra w/Apps) Course Typically Offered: Spring

**INDUSTRIAL MAINTENANCE HYDRAULICS AND PNEUMATICS...**prepares the learner to identify hydraulic and pneumatic component symbols and terms, adjust a pressure relief valve, analyze the operation of a pilot operated relief valve; analyze Pascal's law; evaluate flow, velocity, work and power in industrial hydraulic and pneumatic circuits; analyze meter-in, meter-out, and bypass flow control circuits; identify basic hydraulic and pneumatic control valves; and assemble hydraulic circuits. PREREQUISITE: 31462309 or 31462300 IM Introduction and 31462317 Trades Math IM 1 and 31462318 Trades Math IM 2 or COREQUISITE: 10804115 College Tech Math

**INDUSTRIAL SAFETY & EMERGENCY RESPONSE...**state and federal regulations related to worker safety, industrial hygiene, and response to emergency situations. Emphasis is placed on response to releases of hazardous materials. Course Typically Offered: Fall

**INTRO TO CIVIL ENGINEERING TECHNOLOGY...**portfolio preparation, lettering and printing, chart plotting, resume creation, library research methods, measurement and scaling, drawing techniques, sheet format and layout, dimensioning, line work, orthographic projection, isometric drawings, and construction print reading. Course Typically Offered: Fall/Spring

**INTRO TO ENVIRONMENTAL COMPLIANCE...**an introduction to regulatory concepts and requirements for compliance with environmental regulations by governmental and non-governmental entities. Course Typically Offered: Spring

**INTRO TO ENVIRONMENTAL SCIENCE...**an introduction to the basic principles of environmental science including ecology, energy, resources, waste management, air, water, and soil pollution. Course Typically Offered: Fall

**INTRO TO GIS...**terminology, software operation and interface, creation and analysis of digital maps, and exploring the data behind the maps in Geographic Information Systems. GIS is used to visualize real-world features, obtain information, and communicate the information to others. Course Typically Offered: Fall

**INTRODUCTION TO DIVERSITY STUDIES...**introduces learners to the study of diversity from a local to a global environment using a holistic, interdisciplinary approach. Encourages self-exploration and prepares the learner to work in a diverse environment. In addition to an analysis of majority/minority relations in a multicultural context, the primary topics of race, ethnicity, age, gender, class, sexual orientation, disability, religion are explored. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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.

**PUMPS: INTRO TO FLUID MOVING DEVICES...**this course provides the opportunity for the learner to develop the knowledge, skills, and understanding of pumps, the different classifications of pumps, the inner workings, general maintenance and pumping theory. Course Typically Offered: Fall

**SOLID AND HAZARDOUS WASTE...**identify the hierarchy of and regulations related to solid and hazardous waste, the waste stream, pollution prevention and disposal strategies. Learn detection techniques and proper transporting and handling methods. Course Typically Offered: Spring

**SURFACE WATER & DISTRIBUTION...**physical, chemical, and biological principles of operation of surface water treatment and distribution systems. The basic unit processes, control parameters, and mathematical problem-solving related to surface water treatment facilities and distribution systems are introduced. Laboratory procedures and practices involved with operation of water analysis and treatment. (PREREQUISITES: 10506148, Environmental Chem Analysis; 10804118, Interm Algebra w/Apps) Course Typically Offered: Spring

**WASTEWATER TREATMENT & ANALYSIS...**physical, chemical, and biological principles of operation of wastewater treatment systems. The basic unit processes, control parameters, and mathematical problem-solving related to collection systems and treatment facilities are introduced. Laboratory procedures and practices involved with operation of wastewater analysis and treatment including industrial waste treatment technologies. (PREREQUISITE: 10-506-148, Environmental Chem Analysis) Course Typically Offered: Fall

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

**Program Number 10-531-2**  
**Associate Degree in Applied Science • Four Terms**

**ABOUT THE PROGRAM**

A Firefighter Paramedic (Fire Medic) protects life and property through fire suppression, rescue, prevention, and emergency medical treatment capabilities. Graduates are highly trained in the modern firefighting techniques and Paramedic skills necessary to make them successful in the dynamic emergency services environment.

**PROGRAM OUTCOMES**

- Perform essential firefighting and paramedic skills for life safety, incident stabilization, and property conservation.
- Create and execute the objectives of an incident action plan for the diverse emergency incident to be encountered.
- Use effective interpersonal communication skills in emergency and nonemergency environments.
- Apply the critical skills of fire prevention, fire investigation, fire inspection, and public education to minimize the loss of life and property.
- Operate fire service equipment and apparatus effectively and efficiently.

**CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES**

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

**ADMISSION TO DO'S**

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

**PROGRAM TO DO'S**

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete health requirements.
  - Discuss EMT license requirements.
  - Complete Functional Abilities Statement of Understanding form.
  - Complete DMI (District Mutual Insurance) form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

**APPROXIMATE COSTS**

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

**FINANCIAL AID**

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

**SPECIAL NOTE**

- The Lakeshore Technical College Paramedic Program is accredited by the Commission on Accreditation of Allied Health Education Programs ([www.caahep.org](http://www.caahep.org)) upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP). 25400 US Highway 19 N., Suite 158, Clearwater, FL 33756. Phone: 727-210-2350. Web: [www.caahep.org](http://www.caahep.org).
- Students will be required to acquire a Wisconsin Commercial Driver's Instructional Permit during the Fire Apparatus Engineer course.

**CONTACT**

LTC Career Coach  
 920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1 (Spring Start)</b>		
10503145	Firefighting Principles 1	2
10503146	Firefighting Principles 2	2
10503911	Company Level Inspections	2
10801195	Written Communication	3
10809198	Introduction to Psychology	3
		<b>12</b>
<b>Term 2</b>		
10503107	Fire Apparatus Engineer	3
10503144	Advanced Firefighting Concepts	2
10801196	Oral/Interpersonal Communication	3
10806189	Basic Anatomy	3
10809166	Introduction to Ethics	3
		<b>14</b>
<b>Term 3</b>		
10531911	EMS Fundamentals	2
10531912	Paramedic Medical Principles	4
10531913	Advanced Patient Assessment Principles	3
10531914	Advanced Prehospital Pharmacology	3
10531915	Paramedic Respiratory Management	2
10531916	Paramedic Cardiology 1	1
10531926	Paramedic HPS Lab 1	1
10531930	Paramedic Clinical 1	1
		<b>17</b>
<b>Summer</b>		
10531918	Advanced Emergency Resuscitation	1
10531922	EMS Operations	1
10531920	Paramedic Trauma	3
10531928	Paramedic Clinical 2	2
10531927	Paramedic HPS Lab 2	1
10531932	Paramedic Cardiology 2	3
		<b>11</b>
<b>Term 4</b>		
10531919	Medical Emergencies	4
10531921	Special Patient Populations	3
10531923	Paramedic Capstone	1
10531929	Paramedic Field Clinical	2
10531931	Paramedic Internship	1
10531933	Paramedic HPS Lab 3	1
		<b>12</b>
		<b>TOTAL 66</b>

To contact CoAEMSP:  
 8301 Lakeview Parkway, Suite 111-312  
 Rowlett, TX 75088  
 214-703-8445 Fax 214-703-8992  
[www.coaemsp.org](http://www.coaemsp.org)

***Curriculum Modifications  
 Pending State Approval***

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ADVANCED EMERGENCY RESUSCITATION**...provides ACLS and PALS knowledge and skills preparing the student in the integration of comprehensive knowledge of causes and pathophysiology into the management of shock, respiratory failure, respiratory arrest, cardiac arrest, and peri-arrest with intervention to prevent respiratory and/or cardiac arrest if possible. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531916 Paramedic Cardiology

**ADVANCED FIREFIGHTING CONCEPTS**...advances previously learned concepts to build a stronger foundation while exposing the learner to new concepts such as vehicle extrication, technical rescue, flammable liquids fire suppression, and team leadership/management. This course meets the requirements of NFPA 1001 for the Firefighter II level. PREREQUISITE: 10503142 Firefighting Principles

**ADVANCED PATIENT ASSESSMENT PRINCIPLES**...provides knowledge of scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531912 Paramedic Medical Principles

**ADVANCED PREHOSPITAL PHARMACOLOGY**...provides student with comprehensive knowledge of pharmacology required to formulate and administer a pharmacological treatment plan intended to mitigate emergencies and improve the health of the patient. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531913 Advanced Patient Assessment Principles

**BASIC ANATOMY**...examines concepts of anatomy and physiology as they relate to health careers. Learners correlate anatomical and physiological terminology to all body systems. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**COMPANY LEVEL INSPECTIONS**...familiarizes the students with state and local regulations and national codes relating to fire prevention. The course requires the completion of actual inspections and fire safety presentations. Presents the necessary information for performing company level fire inspections.

**EMS FUNDAMENTALS**...provides comprehensive knowledge of EMS systems, safety, well-being, legal issues and ethical issues with intended outcome of improving EMS personnel, patients and the community. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITES: 10531102 EMT Basic or 30531301 EMT Part 1

**EMS OPERATIONS**...provides the knowledge of operational roles and responsibilities to ensure patient, public and EMS personnel safety. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531918 Advanced Emergency Resuscitation

**FIRE APPARATUS ENGINEER**...prepares firefighters to drive and operate fire department emergency apparatus. The course presents theories of hydraulics applied to the fire service, with emphasis on mathematics, and formulas used in operating fire apparatus pumps. Students receive lecture and practical training on maintenance, driving, operating on-board pumps and equipment, and apparatus testing. The course content meets the NFPA 1002 requirement for fire department pumper driver/operator. THIS COURSE REQUIRES STUDENTS TO HAVE A CDL INSTRUCTIONAL PERMIT BY THE 3RD WEEK OF CLASS. PREREQUISITE: 10503142 Firefighting Principles

**FIREFIGHTER PRINCIPLES PART 1**...builds the foundation for a successful firefighting career. Topics presented will include personal protective equipment, firefighter safety, search and rescue, forcible entry, hoselines, awareness of hazardous materials, nozzles, salvage and overhaul, ground ladders, and entry level interior and exterior firefighting. Students successfully completing this course will meet the Wisconsin requirements for an entry level firefighter

**FIREFIGHTER PRINCIPLES PART 2**...advances on the foundations presented in Part 1. Students will acquire the remaining job performance requirements to meet National Firefighter level I qualifications. Topics will include: history of the fire service, ropes and knots, advanced forcible entry, size up and response priorities, fireground communications, hazardous materials operations, and preparation for the Firefighter Level I examination process.

**INTRODUCTION TO ETHICS: THEORY AND APPLICATION**...provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and/or professional standards of behavior, and apply a systematic decision-making process to these situations. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**MEDICAL EMERGENCIES**...provides the student the skills to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a treatment plan for an acutely injured patient. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531918 Advanced Emergency Resuscitation

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PARAMEDIC CAPSTONE**...provides the final opportunity to incorporate knowledge and skills through labs and scenario-based practice and evaluations prior to taking the NREMT written and practical exams. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531922 EMS Operations

**PARAMEDIC CARDIOLOGY 1**...provides the principles of cardiovascular anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and a plan for a patient with a cardiovascular complaint. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531915 Paramedic Respiratory Management

**PARAMEDIC CARDIOLOGY 2**...continues the paramedic's knowledge of cardiology. Incorporates basic and advanced electrocardiogram rhythm interpretation as well as introduces students to Advanced Cardiovascular Life Support (ACLS).

**PARAMEDIC CLINICAL 1**...allows paramedics their first experiences providing advanced level skills and assessments on patients in a healthcare setting. Students will be assigned to an area hospital to begin their clinical training and meeting their assigned clinical competencies. Activities may include rotations within hospital emergency departments, operating rooms, intensive care units, and/or rotations with lab or respiratory staff. COREQUISITE: 10531911 EMS Fundamentals and CONDITION: 15311 Paramedic Technician or 105312 Fire Medic or 315311 EMT Paramedic program admission requirements met

**PARAMEDIC CLINICAL 2**...provides student with the opportunity to enhance their learning through the skills practice in a health care environment experience with actual patients under the supervision of approved preceptors or high-fidelity human patient simulator. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic Program Requirements Met and COREQUISITE: 10531930 Paramedic Clinical 1

**PARAMEDIC FIELD CLINICAL**...provides student with the opportunity to enhance their learning through the practice in the prehospital environment with actual patients under the supervision of approved preceptors. Students will be assigned to an area Paramedic ambulance service provider to incorporate their previously acquired capabilities into prehospital patient care. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic Program Requirements Met and COREQUISITE: 10531918 Advanced Emergency Resuscitation

**PARAMEDIC HPS LAB 3**...provides instruction for continued growth for paramedic students towards mastery in patient assessment, treatment, team management, and ambulance operations during this capstone Human Patient Simulation experience.

**PARAMEDIC HUMAN PATIENT SIMULATION LAB 1**...reinforces student learning through the practice of paramedicine in a controlled environment utilizing high-fidelity human patient simulators and realistic emergency response scenarios with support and guidance of instructors. The student will apply assessment knowledge and demonstrate paramedic level skills in a variety of emergency response scenarios and environments.

**PARAMEDIC HUMAN PATIENT SIMULATION LAB 2**...reinforces student learning through the practice of paramedicine in a controlled environment utilizing high-fidelity human patient simulators and realistic emergency response scenarios with support and guidance of instructors. The student will evaluate patient presentations, formulate treatment plans, reassess interventions, and implement corrective actions by integrating pathophysiological principles and assessment findings. CONDITION: 105311 Paramedic Technician or 105312 Fire Medic or 315311 EMT Paramedic program admission requirements met

**PARAMEDIC INTERNSHIP**...demonstrates to paramedic students their team leadership capabilities while assessing, formulating treatments plans, and delegating tasks to their EMS team members. Students will be assigned to an area paramedic ambulance service to complete requirements during this capstone field internship.

**PARAMEDIC MEDICAL PRINCIPLES**...provides the knowledge of anatomy, physiology and pathophysiology of major human systems while also introducing the students to shock, immunology and bleeding. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531911 EMS Fundamentals

**PARAMEDIC RESPIRATORY MANAGEMENT**...provides specific knowledge pertaining to the respiratory system and to ensure the student is prepared to formulate a field impression and implement a comprehensive treatment plan for a respiratory complaint. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531914 Advanced Prehospital Pharmacology

**PARAMEDIC TRAUMA**...provides the student the skills to integrate assessment findings with principles of anatomy, physiology, epidemiology and pathophysiology to formulate a field impression and implement a treatment plan for an acutely injured patient. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531919 Paramedic Medical Emergencies

**SPECIAL PATIENT POPULATIONS**...provides the student the skills to integrate assessment findings with principles of anatomy, physiology, epidemiology and pathophysiology to formulate a field impression and implement a treatment plan for patient with special needs. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531920 Paramedic Trauma

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## ABOUT THE PROGRAM

Have you been told you have creative and visualization skills? Do you enjoy analyzing design decisions and often think it could have been done better? If you are attracted to the design elements of color, type, shape, illustration, and layout, then creating web sites and print-ready design solutions can be a very satisfying career choice. Graphic and web designers often thrive on competition and creative license; however, they must constantly adapt to the best solutions for the client. This field can draw out your creative talents and expand your business and marketing expertise. A minimum keyboarding skill of 25 wpm is recommended.

## PROGRAM OUTCOMES

- Apply the principles of design to develop strategic marketing and communication products and services.
- Demonstrate proficiency in the use of design software, tools, and technology.
- Implement creative solutions from concept through completion using a formal process.
- Apply effective legal and ethical business practices and project management skills.
- Communicate artwork rationale in formal and informal settings.
- Demonstrate creative abilities and software knowledge when developing websites and press-ready electronic files.

## CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

## ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

## PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

## APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

## FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

## SPECIAL NOTES

Students are required to purchase specific Adobe Creative Cloud software online at: <https://emergent.onthehub.com> (approximate cost \$125 annually).

## CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10106162	Computer Platform Essentials	1
10201101	Design Fundamentals	3
10201108	Photoshop	3
10201109	Illustration	3
10801195	Written Communication	3
10809198	Introduction to Psychology	3
		<b>16</b>
<b>Term 2</b>		
10103191	Word - Level 1	1
10103121	Excel - Level 1	1
10201114	Typography	2
10201115	Digital Photography	2
10201110	InDesign	3
10152196	Web Development 1	3
10804123	Math with Business Applications OR 10806112 Principles of Sustainability	3
		<b>15</b>
<b>Term 3</b>		
10201117	Career Essentials	2
10201119	Website Development Advanced	2
10152106	Integrated Web Concepts	4
10201118	Advancements in Web Design and Development	2
10809196	Introduction to Sociology	3
10801196	Oral/Interpersonal Communication	3
		<b>16</b>
<b>Term 4</b>		
10201103	Advanced Computer Graphics	3
10152122	Multimedia Concepts	3
10201113	Publication Design	3
10201105	Internship for Graphics and Web Design	1
10809195	Economics	3
		<b>13</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ADVANCED COMPUTER GRAPHICS**...provides the learner with enhanced knowledge and skill in the use of design, illustration, and page layout software through the creation of a variety of design projects. Emphasis is on original, strong images and type integration, as well as preparing files for press. Students must participate in the spring portfolio show. PREREQUISITE: 10201101 Design Fundamentals, 10152106 Integrated Web Concepts, 10201110 InDesign and 10152118 Website Dev Advanced and COREQUISITE: 10201113 Publication Design and CONDITION: 102012 Graphic and Web Design Admission Requirements Met

**ADVANCEMENTS IN WEB AND DEVELOPMENT**...will explore the latest trends in Web design and development. Students will apply advanced techniques to create progressive and contemporary websites. PREREQUISITE: 10152196 Web Development 1

**CAREER ESSENTIALS**...will teach students how to create effective career documents for a job search such as Graphic and Web Designer including resume, business card, and cover letter. Students will also learn how to set up a freelance business, how to find jobs as a freelancer, and the basics of owning their own business. Students will analyze their design strengths and gather portfolio artifacts that showcase their skills in the Graphic and Web Design field. COREQUISITE: 10152106 Integrated Web Concepts

**COMPUTER PLATFORM ESSENTIALS**...teaches skills essential to the Graphic & Web Design program. Wacom tablets, scanning, printing options, offsite storage, and Adobe Creative Cloud will be covered using different platforms.

**DESIGN FUNDAMENTALS**...introduces the learner to the elements of art (line, texture, color, shape and value.) Students will investigate how these elements can be manipulated using various principles of design to achieve different effects. Basic color theory, historic eras, and emerging trends will be covered.

**DIGITAL PHOTOGRAPHY**...will help the individual understand photographic principles and file manipulation. Through in-class discussions, audio visuals, camera demonstrations, and in-the-field shooting sessions, the individual will learn shooting and lighting techniques designed to capture a better image. Printing, cropping, retouching and file management will also be covered.

**ECONOMICS**...provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**EXCEL - LEVEL 1**...introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**ILLUSTRATION**...prepares the learner to use Adobe's standard vector graphics software to create digital art. The course will cover the basics of computer illustration and its use in print and web media. Students will work with objects, the pen, brushes, text, color, special effects, symbols, and gradients as they create portfolio-quality art.

**INDESIGN**...prepares the learner to use a professional page layout program. Learners will develop brochures, mailers, business documents and newsletters by implementing text layout techniques, using multiple master pages, managing styles, using text adjustment tools, working with libraries, and managing long documents for print production. Projects developed will be used to build the students' portfolio. PREREQUISITE: 10201101 Design Fundamentals and 10201108 Photoshop

**INTEGRATED WEB CONCEPTS**...introduces the student to the three major components of the Web -- design, development, and marketing. A common course among Graphic and Web Design, Web and Software Developer, and Marketing, students from each program will be responsible for working in teams and to coordinate projects and present their industry to students from the other programs. PREREQ 10104102 Prin of Mktg and 101043 Mktg req met or 10152187 Web Dev 3 and 101527 IT Web and Soft Dev req met or 10201110 InDesign and 102012 Graphic and Web Design req met

**INTERNSHIP FOR GRAPHIC AND WEB DESIGN**...requires students to complete 72 hours of performing work in a business/industrial service setting related to their program objectives. Students are responsible for seeking and obtaining the internship workstation position. Course requirements include maintaining a log of work activities, identifying and receiving approval from the job supervisor and instructor, and completing a work-related project. The field study may be substituted based on instruction decision. Students meet periodically at LTC. COREQUISITE: 10201113 or 10201104 Publication Design and CONDITION: verification of eligibility by the Internship Coordinator

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**MULTIMEDIA CONCEPTS**...will teach students how to create various multimedia elements including video, audio, and basic animation and learn how to incorporate these elements into web pages. PREREQUISITE: 10152196 Web Development 1

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PHOTOSHOP**...introduces the learner to using Adobe Photoshop to edit, enhance, and combine digital images which are prepared for print and web media. Topics will include photo correction, masks, channels, page backgrounds, brushes and optimizes images for web use.

**PUBLICATION DESIGN**...will focus on creating and designing print material using desktop publishing software. A variety of documents, including brochures, annual reports, flyers, magazine articles, and multipage documents are created. Integrating Microsoft Office products with Adobe products are explored. The emphasis is on design and preparing files for print. PREREQUISITE: 10201110 InDesign, 10201108 Photoshop, 10201108 Illustration

**TYPOGRAPHY**...introduces the learner to the fundamentals of Typography. Emphasis is on the structure and form of type and how it is used in contemporary graphic design. Projects explore the history of type, and the creation of design using type elements.

**WEB DEVELOPMENT 1**...introduces the students to web page design principles and proceeds to teach students how to create their own visually appealing designs for the web. Students will have hands-on experience using current versions of Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS) to code and format accessible, valid, and optimized web sites. Websites will be published live on the web using FTP.

**WEBSITE DEVELOPMENT ADVANCED**...builds on student knowledge of XHTML and web design software. Student knowledge is extended beyond basic page design to include web page interaction and dynamic page building. Students will have hands-on experience developing complex web pages. PREREQUISITE: 10152196 Web Development 1

**WORD - LEVEL 1**...introduces the student to word processing features such as creating, saving, editing, navigating, and formatting the content of multi-page documents.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 31-510-3 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

The Health Care Technician program prepares graduates for work in one or multiple roles, making them highly flexible in today's health care workforce. Health care organizations value multi-skilled professionals in combination roles, including nursing assistant, health unit coordinator, EKG/phlebotomy technician, and dietary aide. LTC's Health Care Technician program uses a planned, sequenced course progression leading to an excellent career path. If you are interested in working in different roles in a health care setting, this is an excellent option for you.

### PROGRAM OUTCOMES

- Communicate professionally with clients, families, and coworkers.
- Maintain and protect client rights.
- Report and record observations.
- Perform basic clinical and supportive skills.
- Work under stress of time and job demands.
- Maintain emotional control.
- Coordinate health care and personal services.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete health requirements.
  - Admission to Nursing Assistant program or completion of Nursing Assistant course.
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### RELATED PROGRAMS

- Health Unit Coordinator Technical Diploma
- Medical Assistant Technical Diploma
- Medical Coding Specialist Technical Diploma
- Pharmacy Technician Technical Diploma

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10501102	Health Insurance and Reimbursement	3
10501104	Culture of Healthcare	2
10501107	Digital Literacy for Healthcare	2
30501301	Dietary Aide OR 10510109 EKG/Phlebotomy (4 cr)	3
10103191	Word - Level 1	1
30543300	Nursing Assistant	3
		<b>14</b>
<b>Term 2</b>		
30510301	Health Unit Coordinator Procedures 1	3
30510302	Health Unit Coordinator Procedures 2	3
30510303	Health Unit Coordinator Clinical	3
10501101	Medical Terminology	3
		<b>12</b>
		<b>TOTAL 26</b>





**CULTURE OF HEALTHCARE**...is an introduction to the culture of healthcare for students interested in working in various healthcare settings. Learners examine professionalism, interpersonal and written communication skills, problem-solving skills and patient privacy and confidentiality issues as they relate to healthcare.

**DIETARY AIDE**...prepares learners for work in dietary services including hospitals, long-term care, assisted living and educational institutions. Introduces learners to principles of sanitation and hygiene, infection control, preparation and service of meals, meeting unique nutritional needs, reporting appropriately and safety practices related to food service. Preparation for the National Restaurant Association certification is included.

**DIGITAL LITERACY FOR HEALTHCARE**...focuses on the use of technology in healthcare. Learners use common business software applications, including word processing, presentation, spreadsheet, and databases. Communication methods using technology are addressed. Learners gain experience with using the electronic health record (EHR). Healthcare EHR security issues, social media use, and digital healthcare resources are examined.

**HEALTH INSURANCE AND REIMBURSEMENT**...provides the learner with an understanding of the various types of insurance and managed care plans, and the cycle of medical claims processing. The learner will review cases, develop critical thinking skills in analyzing information, and selecting processes for reimbursement success.

**HEALTH UNIT COORDINATOR CLINICAL**...provides opportunities for learners to apply the concepts and skills of a Health Unit Coordinator in a clinical setting. COREQUISITE: 30510301 Health Unit Coordinator Procedures 1 and 30510302 Health Unit Coordinator Procedures 2

**HEALTH UNIT COORDINATOR PROCEDURES 1**...is an introductory course to the HUC profession. The course will introduce the student to the environment, communication, and managing client information in healthcare. CONDITION: 305102 Health Unit Coordinator requirements met or 315103 HealthCare Technician requirements met

**HEALTH UNIT COORDINATOR PROCEDURES 2**...is a more advanced course that introduces the student to the order process, transcription of medication and infusion orders, laboratory and diagnostic orders, interdisciplinary treatment orders, and specialty unit orders. COREQUISITE: 30510301 Health Unit Coord Procedure 1

**MEDICAL TERMINOLOGY**...focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

**NURSING ASSISTANT**...is designed to prepare learners for employment in home care agencies, nursing homes, and hospitals. Learners are supervised by qualified RNs in classroom, lab, and clinical areas. Classes are presented by means of online and face-to-face instruction. Lab and clinical activities are scheduled at designated locations in Manitowoc and Sheboygan Counties. Upon successful completion, the graduate will be eligible to sit for the State of Wisconsin Nursing Assistant Competency Examination. CONDITION: 305431 Nursing Assistant Admission Requirements Met

**WORD - LEVEL 1**...introduces the student to word processing features such as creating, saving, editing, navigating, and formatting the content of multi-page documents.

**ABOUT THE PROGRAM**

This field is where healthcare meets the cutting edge of technology! Health Information Technicians are specialists in great demand! The HIM professionals can expect to be in high demand as the health sector expands into the century. In fact, the Bureau of Labor Statistics cites health information technology as one of the fastest growing occupations in the U.S. Health Information Technicians contribute to the quality of care by collecting, analyzing, and reporting health care data. This requires knowledge of disease, treatments, computer systems, and organizational skills.

**PROGRAM OUTCOMES**

- Manage health data.
- Apply coding and reimbursement systems.
- Model professional behaviors and ethics.
- Maintain electronic applications to manage health information.
- Apply organizational management techniques.

**CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES**

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

**ADMISSION TO DO'S**

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

**PROGRAM TO DO'S**

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete health requirements.
  - Complete Functional Ability Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

**APPROXIMATE COSTS**

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

**FINANCIAL AID**

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

**CONTACT**

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Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10501101	Medical Terminology	3
10103191	Word - Level 1	1
10501102	Health Insurance and Reimbursement	3
10501107	Digital Literacy for Healthcare	2
10809172	Introduction to Diversity Studies	3
10806189	Basic Anatomy OR 108061889OL Basic Anatomy (3 cr) OR 10806177 General Anatomy & Physiology (4 cr)	3
		<b>15</b>
<b>Term 2</b>		
10530178	Healthcare Law & Ethics	2
10530182	Human Diseases for Health Professions	3
10530184	CPT Coding	3
10530197	ICD Diagnosis Coding	3
10103121	Excel - Level 1	1
10801195	Written Communication	3
		<b>15</b>
<b>Term 3</b>		
10154121	Database Concepts	2
10154152	Database Application	1
10530187	Clinical Information Management	4
10530195	Applied Coding	2
10530199	ICD Procedure Coding	2
10809198	Introduction to Psychology	3
10530191	HIM/Coding Practicum 1	2
		<b>16</b>
<b>Term 4</b>		
10530177	Healthcare Stats & Research	2
10530193	Healthcare Quality Management	2
10809196	Introduction to Sociology	3
10801196	Oral/Interpersonal Communication	3
10530192	HIM Practicum 2	2
10530194	HIM Organizational Resources	2
		<b>14</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**APPLIED CODING...**prepares students to assign ICD and CPT/HCPCS codes supported by medical documentation with intermediate level of proficiency. Students will prepare appropriate physician queries in accordance with compliance guidelines and will assign codes to optimize compliance with federal regulations and reimbursement. PREREQUISITE: 10501101 Medical Terminology and COREQUISITES: 10530197 ICD Diagnosis Coding and 10530199 ICD Procedure Coding and 10530184 CPT Coding and 10501102 Health Insurance and Reimbursement

**BASIC ANATOMY...**examines concepts of anatomy and physiology as they relate to health careers. Learners correlate anatomical and physiological terminology to all body systems. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**CLINICAL INFORMATION MANAGEMENT...**prepares learners for work with health information in various health care delivery systems and within a health information department. It prepares learners to retrieve data from health credits. Professional ethics, confidentiality and security of information are emphasized. It introduces learners to the use and structure of health care data elements, data sets, data standards, their relationships to primary and secondary record systems and health information processing. COREQUISITE: 10501107 Digital Literacy for Healthcare

**CPT CODING...**prepares learners to assign CPT codes, supported by medical documentation, with entry-level proficiency. Learners apply CPT instructional notations, conventions, rules, and official coding guidelines when assigning CPT codes to case studies and actual medical record documentation. COREQ: 10530182 Human Dis for Hlth Prof and 10501102 Hlth Ins & Reimb and PREREQUISITE: 10501101 Med Term and CONDITION: 315302 Medical Coding Spec or 105304 Health Information Mgmt program requirements met

**DATABASE APPLICATIONS...**is a project-based course in which learners will build and implement a relational database application utilizing the principles of sound database design acquired in the Database Concepts course. Learners will define the functionality's, implement, build and populate the database, document the database project, and demo their project. COREQUISITE: 10154121 Database Concepts

**DATABASE CONCEPTS...**prepares the learner to differentiate among the primary DBMS components; determine the difference in data models; use Query By Example and relational algebra; develop SQL statements; apply principles of database integrity, security and normalization; reconstruct poorly designed table structures; develop a relational database design using data requirement analysis and specification methods; and examine additional DBMS functions.

**DIGITAL LITERACY FOR HEALTHCARE...**focuses on the use of technology in healthcare. Learners use common business software applications, including word processing, presentation, spreadsheet, and databases. Communication methods using technology are addressed. Learners gain experience with using the electronic health record (EHR). Healthcare EHR security issues, social media use, and digital healthcare resources are examined.

**EXCEL - LEVEL 1...**introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**HEALTH INSURANCE AND REIMBURSEMENT...**provides the learner with an understanding of the various types of insurance and managed care plans, and the cycle of medical claims processing. The learner will review cases, develop critical thinking skills in analyzing information, and selecting processes for reimbursement success.

**HEALTHCARE LAW & ETHICS...**examines regulations for the content, use, confidentiality, disclosure, and retention of health information. An overview of the legal system and ethical issues are addressed.

**HEALTHCARE QUALITY MANAGEMENT...**explores the programs and processes used to manage and improve healthcare quality. Addresses regulatory requirements as related to performance measurement, assessment, and improvement, required monitoring activities, risk management and patient safety, utilization management, and medical staff credentialing. Emphasizes the use of critical thinking and data analysis skills in the management and reporting of data.

**HEALTHCARE STATS & RESEARCH...**explores the management of medical data for statistical purposes. Focuses on descriptive statistics, including definitions, collection, calculation, compilation, and display of numerical data. Vital statistics, registries, and research are examined. PREREQUISITE: 10103121 Excel - Level 1

**HIM ORGANIZATIONAL RESOURCES...**examines the principles of management to include planning, organizing, human resource management, directing, and controlling as related to the health information department.

**HIM PRACTICUM 2...**applies previously acquired skills and knowledge and discussion of clinical situations. Prepares for the certification examination and pre-graduation activities. This is the second of a two-semester sequence of supervised technical and managerial/clinical experiences in health care facilities. PREREQUISITE: 10530191 HIM/Coding Practicum 1 and CONDITION: 105304 Health Information Management program requirements met

**HIM/CODING PRACTICUM 1...**applies previously acquired skills and knowledge by means of clinical experiences in the technical procedures of health record systems and discussion of clinical situations. COREQUISITES: 10530195 Applied Coding, 10530197 ICD Diagnosis Coding, 10530199 ICD Procedure Coding, 10530184 CPT Coding, CONDITION: 315302 Medical Coding Specialist or 105304 Health Information Management program requirements met

**HUMAN DISEASE FOR HEALTH PROFESSIONS...**prepares learners to interpret clinical documentation that they will encounter in a variety of healthcare settings. Emphasis is placed on understanding the common disorders and diseases of each body system to include the etiology (cause), signs and symptoms, diagnostic tests and results, and medical treatments and surgical procedures. COREQUISITES: 10501101 Med Term or CONDITION: 101064 Med Trans Spec program requirements met and 10806103 Body Struc & Func or CONDITION: 311067 Medical Transcription program requirements met and 10806103 Body Structure and Function

**ICD DIAGNOSIS CODING...**prepares students to assign ICD diagnosis codes supported by medical documentation with entry level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD diagnosis codes to case studies and actual medical record documentation. PREREQUISITE: 10501101 Medical Terminology and COREQUISITES: 10530182 Human Diseases for the Health Professions and 10501102 Health Insurance and Reimbursement

**ICD PROCEDURE CODING...**prepares students to assign ICD procedure codes supported by medical documentation with entry level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD procedure codes to case studies and actual medical record documentation. PREREQUISITE: 10501101 Medical Terminology and COREQUISITES: 10530182 Human Diseases for the Health Professions and 10501102 Health Insurance and Reimbursement

**INTRODUCTION TO DIVERSITY STUDIES...**introduces learners to the study of diversity from a local to a global environment using a holistic, interdisciplinary approach. Encourages self-exploration and prepares the learner to work in a diverse environment. In addition to an analysis of majority/minority relations in a multicultural context, the primary topics of race, ethnicity, age, gender, class, sexual orientation, disability, religion are explored. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**MEDICAL TERMINOLOGY...**focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**WORD - LEVEL 1...**introduces the student to word processing features such as creating, saving, editing, navigating, and formatting the content of multi-page documents.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

### ABOUT THE PROGRAM

Today's healthcare environment is overflowing with opportunity for those interested in helping others. Health Unit Coordinators are valued members of the healthcare team who professionally coordinate health unit operations, transcribe medical orders, communicate effectively within the healthcare setting, and manage client information. If you want to help people in a healthcare career that is fast-paced, requiring excellent communication, organizational, technological and customer service skills, check into becoming a Health Unit Coordinator.

### PROGRAM OUTCOMES

- Communicate professionally in the health care environment.
- Coordinate health unit operations.
- Integrate the role of the health unit coordinator in the health care system.
- Manage client information.
- Transcribe medical orders.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

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### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
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  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete health requirements.
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### CONTACT

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 920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
30510301	Health Unit Coordinator Procedures 1	3
30510302	Health Unit Coordinator Procedures 2	3
30510303	Health Unit Coordinator Clinical	3
10501101	Medical Terminology	3
10501104	Culture of Healthcare	2
10501107	Digital Literacy for Healthcare	2

**TOTAL 16**

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**CULTURE OF HEALTHCARE**...is an introduction to the culture of healthcare for students interested in working in various healthcare settings. Learners examine professionalism, interpersonal and written communication skills, problem-solving skills and patient privacy and confidentiality issues as they relate to healthcare.

**DIGITAL LITERACY FOR HEALTHCARE**...focuses on the use of technology in healthcare. Learners use common business software applications, including word processing, presentation, spreadsheet, and databases. Communication methods using technology are addressed. Learners gain experience with using the electronic health record (EHR). Healthcare EHR security issues, social media use, and digital healthcare resources are examined.

**HEALTH UNIT COORDINATOR CLINICAL**...provides opportunities for learners to apply the concepts and skills of a Health Unit Coordinator in a clinical setting. COREQUISITE: 30510301 Health Unit Coordinator Procedures 1 and 30510302 Health Unit Coordinator Procedures 2

**HEALTH UNIT COORDINATOR PROCEDURES 1**...is an introductory course to the HUC profession. The course will introduce the student to the environment, communication, and managing client information in healthcare. CONDITION: 305102 Health Unit Coordinator requirements met or 315103 HealthCare Technician requirements met

**HEALTH UNIT COORDINATOR PROCEDURES 2**...is a more advanced course that introduces the student to the order process, transcription of medication and infusion orders, laboratory and diagnostic orders, interdisciplinary treatment orders, and specialty unit orders. COREQUISITE: 30510301 Health Unit Coord Procedure 1

**MEDICAL TERMINOLOGY**...focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

## Program Number 31-001-1 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

Horticulture technicians can make a living in a wide variety of ways. You may work in the disciplines of plant propagation and production for a greenhouse or tree nursery - nurturing plants to be used in landscaping, food production, or sold in retail garden centers. You may also work on landscape maintenance or landscape construction crews for landscape contractors, lawn care service companies, botanical gardens, municipal park departments, golf courses, and natural resource management agencies. Work duties are typically out of doors and very hands-on. The work of a horticulture technician is truly a “green” career.

### PROGRAM OUTCOMES

- Analyze growing media.
- Diagnose plant health.
- Communicate as a horticulture professional.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10001110	Horticulture Introduction	3
10001153	Botany and Soil Science	3
10001112	Plants 1	3
10001113	Landscape Installation 1	3
10801196	Oral/Interpersonal Communications	3
		<b>15</b>
<b>Term 2</b>		
10001120	Greenhouse & Nursery Production	3
10001121	Landscape Design Studio	3
10001132	Plants 2	3
10001172	Landscape Maintenance	3
10806112	Principles of Sustainability	3
		<b>15</b>
		<b>TOTAL 30</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**BOTANY AND SOIL SCIENCE**...introduces the language and nature of botany and biology and makes them relevant to horticulture and landscaping. It also addresses the interactions of healthy plants and soils and examines the physical, chemical, biological, and management characteristics of soils. COREQUISITE: 10001110 Horticulture-Intro

**GREENHOUSE AND NURSERY PRODUCTION**...provides the student with the knowledge and skills for horticultural production. Students implement efficient, cost-effective, and sustainable methods of horticultural production in the greenhouse, in a variety of other horticulture-related structures, as well as in field scenarios. PREREQUISITES: 10001153 Botany & Soil Science and 10001110 Horticulture Intro

**HORTICULTURE INTRODUCTION**...engages the learner through instructor-led interactive research and presentation while exploring plant growth, development, and ecology; plant classification; plant health care; horticultural crops and production; the horticulture industry and related careers; and principles of design and design implementation.

**LANDSCAPE DESIGN STUDIO**...provides the learner with strategies to develop and apply a structured approach to designing landscape space. Fundamentals of the design process are applied including basic site analysis, plan development and detailing, proper plant selection, landscape graphic conventions, and client interactions. Both manual drafting and CAD software are used for design communications. Property lines, topography, site planning, hardscapes, planting plans, and section view graphics are covered.

**LANDSCAPE INSTALLATION 1**...investigates and implements landscape construction techniques including the proper and safe use of landscape tools, plan reading and interpretation, site management, proper planting, and the installation of landscape features.

**LANDSCAPE MAINTENANCE**...assists the learner in identification and implementation of appropriate cultural practices while dealing with challenges in the landscape, including pruning techniques, insect/disease/abiotic problems; pesticides; turf issues; and resolving situations in the field. Course includes production, installation, maintenance, and harvest of edible and ornamental plants. PREREQUISITES: 10001110 Horticulture Introduction and 10001153 Botany and Soil Science

**ORAL/INTERPERSONAL COMMUNICATIONS**...provides students with the skills to develop speaking, verbal and nonverbal communication, and listening skills through individual speeches, group activities, and other projects. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PLANTS 1**...introduces ornamental and weedy, woody, and herbaceous plant identification and culture/management through outdoor and indoor applied activities. The course activities focus on plants encountered in landscaping and production in eastern Wisconsin and the Midwest. This is the first course of a two-course series that continues as Plants 2.

**PLANTS 2**...provides the learner with the opportunity to conduct and present research through outdoor- and greenhouse-applied activities on ornamental, woody, and herbaceous plants as well as on edible fruits, vegetables, and herbs. Utilizing the environmental campus as well as other field-type experiences, emphasis on plant identification and culture/management, as undertaken in Plants 1, is continued. PREREQUISITE: 10001112 Plants 1

**PRINCIPLES OF SUSTAINABILITY**...prepares students to develop sustainable literacy, analyze interconnections among physical and biological sciences and environmental systems, summarize effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal/recycling in the U.S., and analyze approaches used by your community. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

### ABOUT THE PROGRAM

The associate degree in Hospitality Management prepares individuals for a management career in the hospitality industry. Coursework emphasizes theory and application of skills needed for mid-management and supervisory level of employment in food and lodging facilities. Hospitality management skills are also applicable to a variety of other hospitality operations which include conference centers, sports and entertainment facilities, front office managers, food and beverage operations, and other careers.

### PROGRAM OUTCOMES

- Plan the operations within a hospitality organization.
- Organize hospitality resources to achieve the goals of the organization.
- Direct individuals and/or processes to meet organizational goals.
- Control hospitality processes/procedures.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10104109	Customer Service Techniques	2
10103191	Word - Level 1	1
10103121	Excel - Level 1	1
10109112	Sanitation for Food Service	1
10109121	Introduction to Hotel/Hospitality Management	3
10801195	Written Communication OR 10801136 English Composition 1	3
10804123	Math with Business Applications	3
		<b>14</b>
<b>Term 2</b>		
10196191	Supervision	3
10109110	Front Office Procedures and Management	2
10109108	Dining Room and Beverage Service	2
10316105	Culinary Practicum 1	2
10104128	Leadership and Professionalism	3
10801198	Speech OR 10801196 Oral/Interpersonal Communication	3
		<b>15</b>
<b>(Summer)</b>		
10109144	*Hospitality Internship	3
		<b>3</b>
<b>Term 3</b>		
10109111	Housekeeping Management	2
10109113	Food and Beverage Operations	2
10109158	Hospitality Cost Control	3
10104170	Marketing Tourism and Hospitality	3
10109151	Hospitality Event Planning	2
10809172	Introduction to Diversity Studies OR 10809196 Introduction to Sociology	3
		<b>15</b>
<b>Term 4</b>		
10101102	Hospitality Accounting	3
10109115	Hospitality Law	3
10109150	Housekeeping Practicum	1
10809195	Economics	3
10809198	Introduction to Psychology	3
		<b>13</b>
		<b>TOTAL 60</b>

\* Verification of current First Aide/CPR card or proof of having taken 42531416CA class

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**CULINARY PRACTICUM 1**...incorporates fundamental theories and techniques learned during the first semester in a restaurant setting. Safety, sanitation and cost control concepts are applied. Activities may include day, evening, and weekend requirements. **CONDITION:** 103161Culinary Arts or 313161 or Culinary Technical Diploma or 101092 Hospitality Management program requirements met.

**CUSTOMER SERVICE TECHNIQUES**...assesses skills in customer relations, judgment & business development and provides training in connecting with customers, healing customer relationships, and dealing with customer needs. Course includes opportunity to earn nationally recognized AHLEI certification through additional final exam.

**DINING ROOM AND BEVERAGE SERVICE**...introduces learners to dining room and beverage service including wine, spirits, beer, mixology, and non-alcoholic drinks. Helps learners refine their customer service and meal delivery skills through the study and application of proper, customer-oriented dining room service environments including etiquette, dining room safety, set-up, American and French table service, and menu knowledge skills. Concepts include histories of table service, psychology of the customer, and service sequence.

**ECONOMICS**...provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. **COREQUISITE:** 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or **CONDITION:** 610062 Agribusiness/Financial Basic program admissions met

**EXCEL - LEVEL 1**...introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**FOOD AND BEVERAGE OPERATIONS**...introduces and applies principles of menu planning, food preparation, laws and sale of alcoholic beverages. Emphasis is on operation of a professional food and beverage facility. Course includes opportunity to earn nationally recognized AHLEI certification through additional final exam.

**FRONT OFFICE PROCEDURES AND MANAGEMENT**...emphasizes front office techniques and management principles for the organization and operation of the lodging facility. The human and public relations responsibilities of the front office as well as routine procedures are an integral part of the course. Course includes opportunity to earn nationally recognized AHLEI certification through additional final exam.

**HOSPITALITY ACCOUNTING**...provides students with an understanding of the basic structure of accounting in the hospitality area and how to interpret and understand financial statements to learn some internal controls. Students will learn some bottom-up cost control and some budgeting. The student will recognize the differences in hotel/hospitality accounting and emphasis is placed on analysis and interpretation as well as recording, classifying, and summarizing processes. **PREREQUISITE:** 10109158 Hospitality Cost Controls

**HOSPITALITY COST CONTROLS**...applies concepts of controlling costs with emphasis on cost-to-sales relationship. Students calculate the costs of goods, selling price and relative percentages, forecast sales, conduct yield analysis and calculate break-even periods. **PREREQUISITE:** Microsoft Excel or equivalent

**HOSPITALITY EVENT PLANNING**...prepares the learner to manage preplanning activities and execution of events in the hospitality industry, coordinate equipment and facility setup, communicate with outside vendors/suppliers, and conduct follow-up activities. Each student will be required to participate in planning a real-life event and/or assisting an organization through a service learning experience.

**HOSPITALITY INTERNSHIP**...affords students on-the-job experience while providing instructor and workplace supervision. Students are responsible for seeking and obtaining the internship position with instructor approval. Course requirements include maintaining a log of work activities, identifying and receiving approval from the job supervisor and instructor, and completing a work-related project. Students meet periodically at LTC. **CONDITION:** Verification of eligibility by the Instructor

**HOSPITALITY LAW**...will apply legal practices in hospitality environments including analysis of the impact of U.S. employment laws, the global economy, vendor/supplier contract negotiations, reacting to legal charges, documenting the hiring/firing process, dealing with harassment issues, privacy issues, and summarizing legal issues facing hospitality/culinary employees. Students will demonstrate TSA through submission of student portfolio. **COREQUISITE:** 10109121 Introduction to Hotel/Hospitality Mng

**HOUSEKEEPING MANAGEMENT**...this course investigates the functions of the housekeeping department and the role of managers in operating the department. Students are introduced to requirements for guest satisfaction including room and facility appeal, order, and cleanliness. Course includes opportunity to earn nationally recognized AHLEI certification through additional final exam.

**HOUSEKEEPING PRACTICUM**...prepares the learner for relevant experience working in the housekeeping department, and incorporating classroom theory. Students work in the housekeeping department of the participating organization through which they can acquire a log of real-life experiences related to techniques in housekeeping. Activities may include day and evening requirements. **COREQUISITE:** 10109111 Housekeeping Management

**INTRODUCTION TO DIVERSITY STUDIES**...introduces learners to the study of diversity from a local to a global environment using a holistic, interdisciplinary approach. Encourages self-exploration and prepares the learner to work in a diverse environment. In addition to an analysis of majority/minority relations in a multicultural context, the primary topics of race, ethnicity, age, gender, class, sexual orientation, disability, religion are explored. **COREQUISITE:** 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**INTRODUCTION TO HOTEL/HOSPITALITY MANAGEMENT**...will trace the development of the hotel/motel industry from early inns to modern high-rise and commercial hotels and highway motels. The organization of the hotel, including food and beverage operations, is discussed.

**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. **PREREQUISITE:** Reading placement assessment equivalent or **COREQUISITE:** 10838105 Intro to Reading and Study Skills

**LEADERSHIP AND PROFESSIONALISM**...prepares the student to accept a leadership role in their chosen occupation and provides opportunities to demonstrate business etiquette and professionalism in a variety of settings.

**MARKETING TOURISM AND HOSPITALITY**...introduces the student to various aspects of tourism, the development and classification of hotel businesses, the hotel and rooms division operation, the duties and responsibilities of the key food and beverage executives, the history and development of the restaurant business, noncommercial food service segments, beverage management and liquor liability, recreation and leisure, the history of gaming entertainment, and the different types of meetings, conventions, and expositions.

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. **PREREQUISITE:** 10834109 Pre-Algebra or Math placement assessment equivalent and **COREQUISITE:** 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or **CONDITION:** 610061 Agribusiness/Agronomy Basic program admissions requirements met

**SANITATION FOR FOOD SERVICE**...provides face to face food safety training, testing and materials to food service managers. The Serv Safe Manager certification test is included and a passing score earns the Serv Safe Food Protection Manager Certification.

**SPEECH**...explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and other essential elements of speaking successfully, including the listening process, form the basis of the course. **COREQUISITE:** 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**SUPERVISION**...allows the learner to apply the skills and tools necessary to perform the functions of a frontline leader. Students learn the application of strategies and transition to a contemporary supervisory role including day-to-day operations, controlling, staffing, leadership, problem-solving, team skills, motivation, and training.

**WORD - LEVEL 1**...introduces the student to word processing features such as creating, saving, editing, navigating, and formatting the content of multi-page documents.

**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. **PREREQUISITE:** 10831103 Intro to College Wrtg or Writing placement assessment equivalent and **COREQUISITE:** 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

**Program Number 10-116-1**  
**Associate Degree in Applied Science • Varies**

**ABOUT THE PROGRAM**

If you enjoy structuring and administering programs and policies designed to help employees be productive and safe in the workplace, then human resource administration is a good career for you. Knowing the laws, regulations, and internal policies of an organization and administering them humanely and fairly is the human resource administrator's responsibility. This growing and dynamic field has excellent future career growth potential.

**PROGRAM OUTCOMES**

- Create an organizational workforce plan.
- Develop training programs.
- Examine organizational total rewards programs.
- Incorporate employment law into business practices.
- Facilitate effective employee relations.

**CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES**

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

**ADMISSION TO DO'S**

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

**PROGRAM TO DO'S**

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

**APPROXIMATE COSTS**

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

**FINANCIAL AID**

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

**SPECIAL NOTE**

This program is also offered in an online delivery format. Contact an advisor for details.

**CONTACT**

LTC Career Coach  
 920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10103191	Word - Level 1	1
10103121	Excel - Level 1	1
10196193	Human Resource Management	3
10116105	Recruitment and Retention of Employees	3
10116127	HR Technology	2
10449114	Safety in the Workplace	3
10801195	Written Communication	3
		<b>16</b>
<b>Term 2</b>		
10101106	Payroll Applications	2
10196191	Supervision	3
10116125	Human Resource Employment Law	3
10116103	Training for Organizations	3
10809198	Introduction to Psychology	3
10103161	PowerPoint - Level 1	1
		<b>15</b>
<b>Term 3</b>		
10804123	Math with Business Applications	3
10116129	Professional Career Search Techniques	1
10116102	Compensation & Benefits Administration	3
10116107	Labor Relations and Negotiations	2
10809195	Economics	3
10801196	Oral/Interpersonal Communication OR 10801198 Speech (3 cr)	3
		<b>15</b>
<b>Term 4</b>		
10116124	Strategic Performance Management	3
10101155	Accounting for Professionals	3
10809172	Introduction to Diversity Studies	3
10116168	Organizational Development	2
10116106	Internship--Human Resources OR 10138101 Intro to Global Business OR 10116128 HR Studies	3
		<b>14</b>
		<b>TOTAL 60</b>

***Curriculum  
 Modifications Pending  
 State Approval***

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ACCOUNTING FOR PROFESSIONALS**...is the study of the information that can be interpreted from financial statements. Students analyze financial statements and apply managerial accounting concepts in an accelerated format. PREREQUISITE: 10804123 Math w Business Applications or CONDITION: 101101 Paralegal program req met

**COMPENSATION AND BENEFITS ADMINISTRATION**...applies the skills and tools necessary to design, implement and manage a compensation and benefits program as a tool for recruitment, retention & performance management of employees.

**ECONOMICS**...provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**EXCEL - LEVEL 1**...introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**HR TECHNOLOGY**...introduces the learner to the ever-increasing use of technology in the human resource function with special attention paid to mobile computing, social media, human resource information and management systems, cloud computing, and surveying mechanisms.

**HUMAN RESOURCE MANAGEMENT**...applies the skills/tools necessary to effectively value and apply employees' abilities and needs to organization goals. Learners will demonstrate the application of the supervisor's role in contemporary human resources management, impacts of EEOC, writing job descriptions, recruitment, selection, conducting job interviews, orientation, developing policies/procedures, training, performance management, employee counseling/development, and effective use of compensation and benefit strategies.

**HUMAN RESOURCES EMPLOYMENT LAW**...applies the skills/tools necessary to effectively value and apply employees' abilities and needs to organization goals. Learners will demonstrate the legal application of the HR role as it impacts EEOC, writing job descriptions, recruitment, selection, conducting job interviews, orientation, developing policies/procedures, training, performance management, employee counseling/development, and effective use of compensation and benefit strategies.

**INTERNSHIP-HUMAN RESOURCES**...requires students to complete 72 to 216 hours (1 to 3 credits) of performing work in a business/industrial service setting related to their Human Resource program objectives. Students are responsible for seeking and obtaining the internship workstation position. Course requirements include maintaining a log of work activities, identifying and receiving approval from the job supervisor and instructor, and completing a work-related project. Students meet periodically at LTC. CONDITION: Verification of eligibility by instructor coord of Hum Res prog (student must have at least 45 credits of Hum Res prog courses)

**INTRODUCTION TO DIVERSITY STUDIES**...introduces learners to the study of diversity from a local to a global environment using a holistic, interdisciplinary approach. Encourages self-exploration and prepares the learner to work in a diverse environment. In addition to an analysis of majority/minority relations in a multicultural context, the primary topics of race, ethnicity, age, gender, class, sexual orientation, disability, religion are explored. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**LABOR RELATIONS AND NEGOTIATIONS**...introduces the participant to the history of the labor movement and includes the legal collective bargaining processes while applying the learned skills with case studies, a mock negotiation of a realistic collective bargaining contract, and the simulation of a grievance arbitration.

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**ORGANIZATIONAL DEVELOPMENT**...describes what organizations do and how managers contribute to the success of organizational activities and structures. Organizations and their managers make up a significant portion of our contemporary society and culture. From the technical college down the street to the large multinational companies make and sell the products and services we use every day; organizations touch almost every aspect of our daily lives.

**PAYROLL APPLICATIONS**...introduces students to federal and state payroll laws; calculations for gross and net income; prepare payroll deductions; and maintain payroll records.

**POWERPOINT - LEVEL 1**...introduces the student to the program by planning and creating a presentation, adding media and special effects, and applying advanced formatting to objects. This course is offered in a self-paced format.

**PROFESSIONAL CAREER SEARCH TECHNIQUES**...focuses on the process of researching and pursuing professional Human Resource Management career opportunities. Students will develop resume and cover letter documentation to accurately reflect personal, academic, and professional accomplishments and the connection that these elements have to various positions with employers. Interviewing skills will be a significant aspect of this experience with a focus on interviews for potential internship opportunities.

**RECRUITMENT & RETENTION OF EMPLOYEES**...applies and skills and tools necessary to hire and retain qualified employees. Legal issues, testing, screening, interviewing, selecting and negotiating techniques will be demonstrated and assessed for each learner.

**SAFETY IN THE WORKPLACE**...applies the skills and tools necessary to provide a safe and secure work environment. Each learner will demonstrate the application of safety awareness, federal/state/local compliance, incident investigation and documentation, human relations techniques, safety orientation, inspections, and risk analysis, issues of workplace violence, substance abuse, and health hazards, first aid and CPR, fire and electrical safety, emergency preparedness, and liaison with external agencies.

**STRATEGIC PERFORMANCE MANAGEMENT**...prepares the student to consolidate, analyze, and display data at varying levels of detail in order to make human capital decisions in the workplace. Provides students information they need to enhance employee competencies, establish development plans, evaluate performance, and identify succession scenarios. PREREQUISITE: 10196193 Human Resource Management

**SUPERVISION**...allows the learner to apply the skills and tools necessary to perform the functions of a frontline leader. Students learn the application of strategies and transition to a contemporary supervisory role including day-to-day operations, controlling, staffing, leadership, problem-solving, team skills, motivation, and training.

**TRAINING FOR ORGANIZATIONS**...applies the skills and tools necessary to implement the training cycle of assessment, design, implementation and evaluation. Each learner will develop and present a complete training project based upon adult learning theory and instructional design techniques.

**WORD - LEVEL 1**...introduces the student to word processing features such as creating, saving, editing, navigating, and formatting the content of multi-page documents.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 31-116-1 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

This technical diploma, Human Resources Assistant, provides you with a range of entry level and intermediate skills that are needed to perform basic human resources job functions. The credential 'ladders' up to the full two-year Associate Degree, Human Resource Administration. If you enjoy assisting in structuring and administering programs and policies designed to help employees be productive and safe in the workplace, then human resources assistant is a good career for you. The technical degree holder will assist in recruitment, apply basic workplace safety and legal principles to a variety of employment situations, conduct basic payroll functions, assist in and facilitate employee training and development programs, and serve as a customer service representative for a human resources department. This growing and dynamic field has excellent future career growth potential.

### PROGRAM OUTCOMES

- Create an organizational workforce plan.
- Develop training programs.
- Examine organizational total rewards programs.
- Incorporate employment law into business practices.
- Facilitate effective employee relations.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

This program is also offered in an online delivery format. Contact your program advisor for details.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10103191	Word - Level 1	1
10103121	Excel - Level 1	1
10196193	Human Resource Management	3
10116105	Recruitment and Retention of Employees	3
10116127	HR Technology	2
10449114	Safety in the Workplace	3
10801195	Written Communication	3
		<b>16</b>
<b>Term 2</b>		
10101106	Payroll Applications	2
10196191	Supervision	3
10116125	Human Resource Employment Law	3
10116103	Training for Organizations	3
10809198	Introduction to Psychology	3
		<b>14</b>
		<b>TOTAL 30</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**EXCEL - LEVEL 1**...introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**HR TECHNOLOGY**...introduces the learner to the ever-increasing use of technology in the human resource function with special attention paid to mobile computing, social media, human resource information and management systems, cloud computing, and surveying mechanisms.

**HUMAN RESOURCE MANAGEMENT**...applies the skills/tools necessary to effectively value and apply employees' abilities and needs to organization goals. Learners will demonstrate the application of the supervisor's role in contemporary human resources management, impacts of EEOC, writing job descriptions, recruitment, selection, conducting job interviews, orientation, developing policies/procedures, training, performance management, employee counseling/development, and effective use of compensation and benefit strategies.

**HUMAN RESOURCES EMPLOYMENT LAW**...applies the skills/tools necessary to effectively value and apply employees' abilities and needs to organization goals. Learners will demonstrate the legal application of the HR role as it impacts EEOC, writing job descriptions, recruitment, selection, conducting job interviews, orientation, developing policies/procedures, training, performance management, employee counseling/development, and effective use of compensation and benefit strategies.

**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. **PREREQUISITE:** Reading placement assessment equivalent or **COREQUISITE:** 10838105 Intro to Reading and Study Skills

**PAYROLL APPLICATIONS**...introduces students to federal and state payroll laws; calculations for gross and net income; prepare payroll deductions; and maintain payroll records.

**RECRUITMENT & RETENTION OF EMPLOYEES**...applies and skills and tools necessary to hire and retain qualified employees. Legal issues, testing, screening, interviewing, selecting and negotiating techniques will be demonstrated and assessed for each learner.

**SAFETY IN THE WORKPLACE**...applies the skills and tools necessary to provide a safe and secure work environment. Each learner will demonstrate the application of safety awareness, federal/state/local compliance, incident investigation and documentation, human relations techniques, safety orientation, inspections, and risk analysis, issues of workplace violence, substance abuse, and health hazards, first aid and CPR, fire and electrical safety, emergency preparedness, and liaison with external agencies.

**SUPERVISION**...allows the learner to apply the skills and tools necessary to perform the functions of a frontline leader. Students learn the application of strategies and transition to a contemporary supervisory role including day-to-day operations, controlling, staffing, leadership, problem-solving, team skills, motivation, and training. **Training for Organizations**...applies the skills and tools necessary to implement the training cycle of assessment, design, implementation and evaluation. Each learner will develop and present a complete training project based upon adult learning theory and instructional design techniques.

**WORD - LEVEL 1**...introduces the student to word processing features such as creating, saving, editing, navigating, and formatting the content of multi-page documents.

**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. **PREREQUISITE:** 10831103 Intro to College Wrtg or Writing placement assessment equivalent and **COREQUISITE:** 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 10-825-1 Associate Degree in Applied Science • Varies

### ABOUT ITS

LTC's Individualized Technical Studies (ITS) associate degree is designed for working adults with unique backgrounds and educational needs that can't be met by the college's existing associate degree programs. ITS provides the option of creating your own degree. As an ITS student, you'll work with an occupational mentor of your choosing, an academic advisor, and college faculty to design an academically sound, student- and industry-specific program.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to discuss your plan of study, placement assessment results and complete any additional enrollment requirements.
  - Program specific requirements as applicable (i.e. background check, health form, etc.)

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

Curriculum varies depending upon the learner's individualized educational plan. Per the Wisconsin Technical College System (WTCS), 25 percent of coursework/credits must be completed from LTC and must be in the area of technical credits.

### UNIQUE REQUIREMENTS

- Development of an individualized portfolio to be approved by the ITS Committee.
  - Create an educational degree plan.
  - Selection of occupational mentor(s).

### CONTACT

Don Geiger, Advisor  
920.693.1378 • [donald.geiger@gotoltc.edu](mailto:donald.geiger@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>General Education 15-21 credits</b>		
	Communication - 6 credits	
	Math or Science - 3 credits	
	Intro to Psych - 3 credits	
	Social Science - 3 credits	
	Diversity Recommended	
<b>ITS Occupational/Technical 45 credits</b>		
	One program specific area - 20 credits	
	Other program areas - 25 credits	

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



Program Number 50-413-1  
4-Year Contract

Work Hours (including related instruction): 8320  
Related Instruction Hours: 720 • Night School Hours: 8

### ABOUT THE APPRENTICESHIP

Apprenticeships are employer-sponsored training programs. You must have a contract before being invited to school. A special application process is used for these programs. Please contact the Apprenticeship Office for the proper forms. Apprenticeship means you earn while you learn. If you want a career in a skilled trade, apprenticeship is the best way to get there. You'll combine on-the-job training with on campus learning—you'll have the best of both worlds when it comes to learning the skills you need to get ahead. And even better, you'll earn a paycheck while you learn those skills.

### ABOUT THE CAREER

Industrial electricians maintain and repair many different types of electrical equipment. In addition, they modify and install electrical equipment such as motors, transformers, generators, controls, instruments, lighting systems, and power distribution. Typical duties of this trade include performing preventative maintenance; replacing units or parts such as wiring, fuses, circuit breakers, coils or switches; measuring, cutting, bending, threading and installing conduits; using such devices as test lamps, volt-ohm meters and oscilloscopes; working from blueprints, drawings, and diagrams; making mathematical computations to determine the current carrying capacities of electrical wire and equipment; and troubleshooting AC and DC drives and programmable logic controllers.

### CAREERS

Graduates of LTC's Industrial Electrician Apprenticeship program work as journey-level industrial electricians in commercial, industrial, and public establishments.

### INDUSTRIAL APPRENTICE APPLICATION REQUIREMENTS

- Determined by employer
- Wisconsin Apprentice Contract

### PROGRAM OUTCOMES

- Apply AC and DC theory to an industrial setting.
- Apply the National Electric Code requirements to industrial equipment and facilities.
- Apply operational and troubleshooting principles to a transformer installation.
- Maintain electric motors and motor controls.
- Test solid-state electronic system components.
- Apply operational and troubleshooting principles to power systems and variable speed drives.
- Apply operational and troubleshooting principles to programmable logic controllers and automation equipment.
- Apply operational and troubleshooting principles to fluid power systems.
- Interpret industrial equipment drawings and electrical prints.
- Communicate trade and occupational-related information effectively.

### APPROXIMATE COSTS

Contact the LTC Apprenticeship Office or visit [www.gotoltc.edu/apprenticeship](http://www.gotoltc.edu/apprenticeship) for detailed information.

### SPECIAL NOTE

You must have a sponsoring employer and contract before attending school.

### CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
50413501	Electrical Apprentice 1	3 <b>3</b>
<b>Term 2</b>		
50413502	Electrical Apprentice 2	3 <b>3</b>
<b>Term 3</b>		
50413503	Electrical Apprentice 3	3 <b>3</b>
<b>Term 4</b>		
50413504	Electrical Apprentice 4	3 <b>3</b>
<b>Term 5</b>		
50413505	Electrical Apprentice 5	3 <b>3</b>
<b>Term 6</b>		
50413506	Electrical Apprentice 6	3 <b>3</b>
<b>Term 7</b>		
50413507	Electrical Apprentice 7	3 <b>3</b>
<b>Term 8</b>		
50413508	Electrical Apprentice 8	3 <b>3</b>
		<b>TOTAL 24</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**ELECTRICAL APPRENTICE 1**...introduces the apprentice to the basic electrical concepts of structure of matter, electron theory, Ohm's law for series, parallel and series-parallel circuits; volt and current measurements; conductors and resistors; electrical power and energy; and the national electrical code. Also prepares the learner to select control devices by function and operation; illustrate electrical circuits using symbols, diagrams, and abbreviations; explain the operation of magnetic devices. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 2**...introduces the apprentice to magnetism, electricity generation, electromagnetism, application of electromagnetic devices, with continued study of the National Electrical Code. Also expands the learner's experience selecting electromagnetic control devices by function and operation; illustrate electrical circuits using symbols, diagrams, and abbreviations; explain the operation of magnetic devices. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 3**...introduces the apprentice to AC circuits, including mathematics for the circuits, vectors and vector analysis, sine wave characteristics, resistive AC current, inductance and inductive reactance, and RL circuits with continued study of the National Electrical Code. Also continues expanding the learner's experience selecting electromagnetic control devices by function and operation; illustrate electrical circuits using symbols, diagrams, and abbreviations; explain the operation of magnetic devices. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 4**...expands the apprentice's ability to work with complex AC circuits including capacitor types, capacitance, capacitive reactance, series RC circuits, impedance, parallel RL and RC circuits, series and parallel LCR circuit resonance, power in relative circuits, and basic power correction. Continued study of the national electric code is included. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 5**...introduces the apprentice to transformers, DC and AC motor operation; split-phase motors, capacitor motors, shaped pole motors, wound rotor motors, universal motors, three-phase transformer systems and connections and three-phase motor operation. Continued study of the national electric code is included. Also 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 and Micrologix programmable logic controllers. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 6**...enhances the apprentice's ability to work with electrical symbols, line diagrams, manual AC contactors and motor starters, solenoid characteristics, magnetic starters and contactors, time delay and complex control circuits, reversing starters, solid state relays, and ladder logic. Also expands the learner's ability with programmable logic controllers. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 7**...introduces the apprentice to solid state fundamentals and the requirements for ground electrical systems in accordance with the national electrical code. Also expands the learner's ability upon programmable logic controllers with CompactLogix, RSLOGIX Studio 5000 software. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 8**...expands the apprentice's ability to work with programmable logic controllers with Compact Logix, RSLogix Studio 5000 software for programming these devices as well as hands-on training into their operation. Also prepares the learner to explain the function, construction and troubleshoot frequency drives as well as select and change parameters to meet operational characteristics for the drive application. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**Program Number 50-420-9  
18 Month Contract**

**Work Hours (including related instruction): 3000  
Related Instruction Hours: 256 • Night School Hours: 8**

### ABOUT THE APPRENTICESHIP

Apprenticeships are employer-sponsored training programs. You must have a contract before being invited to school. A special application process is used for these programs. Please contact the Apprenticeship Office for the proper forms. Apprenticeship means you earn while you learn. If you want a career in a skilled trade, apprenticeship is the best way to get there. You'll combine on-the-job training with on campus learning—you'll have the best of both worlds when it comes to learning the skills you need to get ahead. And even better, you'll earn a paycheck while you learn those skills.

### ABOUT THE CAREER

Entry-level industrial manufacturing technicians operate industrial production-related equipment, work with manufacturing-related tools, and perform work processes related to a wide variety of manufacturing settings. Industrial manufacturing technician apprentices will learn to set up, operate, monitor, and control production equipment. They will also help improve manufacturing processes and schedules to meet customer requirements. This apprenticeship training program combines on-the-job learning with related instruction in a classroom to prepare apprentices for journey-level work after they complete the program.

### CAREERS

Graduates of LTC's Industrial Manufacturing Technician Apprenticeship program work as journey-level industrial manufacturing technicians in commercial, industrial, and public settings.

### INDUSTRIAL APPRENTICE APPLICATION REQUIREMENTS

- Determined by employer
- Wisconsin Apprentice Contract

### PROGRAM OUTCOMES

- Protect self and other workers from accidents and injuries.
- Interpret technical information.
- Measure work.
- Inspect work.
- Use mechanical tools and testing equipment.
- Set up production equipment.
- Operate production equipment.
- Produce quality work.
- Be aware of inventory and material processes.
- Be aware of trends and the current state of the business.
- Apply soft skills to production and manufacturing work processes.
- Demonstrate continuous improvement.

### APPROXIMATE COSTS

Contact the LTC Apprenticeship Office or visit [www.gotoltc.edu/apprenticeship](http://www.gotoltc.edu/apprenticeship) for detailed information.

### SPECIAL NOTE

You must have a sponsoring employer and contract before attending school.

### CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
50420510	Industrial Manufacturing Technician Apprentice 1	3
50420711	Mathematics for Machine Trades	1
<b>Term 2</b>		
50420512	Industrial Manufacturing Technician Apprentice 2	3
50420712	Communications for Apprentices	1
		<b>4</b>
		<b>TOTAL 8</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**COMMUNICATIONS FOR APPRENTICES**...introduces the apprentice to basic communication concepts relating to the workplace. It is designed specifically for the apprentice to acquire the necessary skills of giving instructions, writing a technical memo, and explaining a technical process. Throughout the course the apprentice will brainstorm, write, edit, revise, and use one-on-one communication delivery in a small group. The course combines lecture and hands-on activities. **CONDITION:** Industrial Manufacturing Technician Apprentice program requirements met

**INDUSTRIAL MANUFACTURING TECH APPRENTICE 1**...includes an orientation to the trade and manufacturing, followed by the MSSC safety module, MSSC quality module, OSHA 10 certification, blueprint reading, visual inspection, measurement, and first aid & CPR training. Manufacturing concepts will be introduced and applied in a variety of manufacturing settings. MSSC modules 1 and 2 are aligned with the learning plans for this course along with Machine Trades Math. **CONDITION:** Industrial Manufacturing Technician Apprentice program requirements met

**INDUSTRIAL MANUFACTURING TECH APPRENTICE 2**...includes the MSSC manufacturing processes and production and maintenance awareness modules, along with communication, lean manufacturing, problem solving, and frontline leadership. Manufacturing-related concepts will be applied to a variety of industrial settings. The course wraps up with an examination of emerging trends and technologies and future directions for manufacturing. MSSC learning objectives in modules 3 and 4 are aligned with curriculum. **CONDITION:** Industrial Manufacturing Technician Apprentice program requirements met

**MATHEMATICS FOR MACHINE TRADES**...provides applied mathematics instruction from a review of basic arithmetic; basic algebra; applications based on geometry; right triangle trigonometry and oblique angle trigonometry; and compound angles. **CONDITION:** 504209 Industrial Manufacturing Technician Apprentice program requirements met

**Program Number 10-154-3**  
**Associate Degree in Applied Science • Four Terms**

### ABOUT THE PROGRAM

Computers—can you imagine life without them? So much of what we do, whether at work, at home, or somewhere in between, depends on the use of computer information systems. If you enjoy using various operating systems, learning all kinds of software applications, doing some programming, troubleshooting hardware and software, and helping others learn to use technology and information systems, a career as a computer support specialist may be the perfect fit for your high-tech talents.

### PROGRAM OUTCOMES

- Manage information technology hardware.
- Manage software.
- Support computer networks.
- Provide end user support.
- Solve information technology problems.
- Demonstrate customer service skills as an IT professional.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

Students are required to have one USB 80 gig hard drive or greater.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10154104	Intro to IT	3
10150114	Networking I	3
10154122	PC Support	3
10801195	Written Communication	3
10804107	College Mathematics	3
		<b>15</b>
<b>Term 2</b>		
10150173	Server Administration 1	3
10150176	Networking 2	3
10154124	Information Security Principles	3
10801196	Oral/Interpersonal Communication OR 10801198 Speech	3
10809196	Introduction to Sociology OR 10809122 Introduction to American Government OR 10809166 Introduction to Ethics	3
		<b>15</b>
<b>Term 3</b>		
10154128	Service Desk 1	3
10154130	MS Windows 1	3
10154102	Business Apps Fundamentals	3
10154103	Training and Documentation	2
10154131	Apple Support	3
		<b>14</b>
<b>Term 4</b>		
10154129	Service Desk 2	3
10154132	MS Windows 2	3
10154106	IT-Career and Professional Development	1
10154160	IT Computer Capstone	3
10809195	Economics	3
10809198	Introduction to Psychology	3
		<b>16</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**APPLE SUPPORT**...prepares the student to support the Apple OS X operating system. The course covers installation and configuration, user account management, file and data management, application support, network configuration and services as well as other system management functions.

**BUSINESS APPS FUNDAMENTALS**...prepares the learner to evaluate, use, and support common information system applications that an end-user would use in a typical business environment. Both individual productivity tools as well as enterprise tools are examined. The competencies in the course will articulate to other courses in the information technology programs.

**COLLEGE MATHEMATICS**...is designed to review and develop fundamental concepts of mathematics pertinent to the areas of: 1) arithmetic and algebra; 2) geometry and trigonometry; and 3) probability and statistics. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent

**ECONOMICS**...provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**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. PREREQUISITE: 10154104 Intro to IT

**INTRO TO IT**...introduces student to IT field to basic concepts and terminology of a computer system hardware and software, Operating Systems (including Mac OS), and Networks; applied skills include: managing computer data files; protecting against computer viruses; creating simple web pages; producing electronic word documents, spreadsheets and presentations; examining techniques of systems analysis and design, programming languages and database systems.

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**IT COMPUTER CAPSTONE**...will allow the student to demonstrate the skills learned while in the Computer Support Specialist program. The student will demonstrate the ability to manage information technology hardware and software, support computer networks, provide end user support, solve information technology problems and demonstrate customer service skills as an IT professional, through the completion of a comprehensive project. PREREQUISITES: 10154129 Service Desk 2 and 10154132 MS Windows 2

**IT-CAREER AND PROFESSIONAL DEVELOPMENT**...introduces students to job seeking skills and work environment communications skills. Written and oral communication skills needed in the work place will be emphasized. Students will build a resume, create a cover letter and follow up letters. Participate in job-seeking skills, which include research of a particular job and company and participating in a mock interview. Course should be taken in last semester of course work.

**MS WINDOWS 1**...covers how to configure hardware and manage applications, configure network connectivity, perform upgrades, manage remote access and security for mobile devices. Course will also cover how to monitor and maintain Windows clients, create virtualized Windows clients, and configure system and data recovery options.

**MS WINDOWS 2**...is a course designed to give the student the skills to support, and troubleshoot problems with, the Microsoft Windows operating system in an enterprise environment. Issues with remote access, networking, security, group policy, Internet Explorer, and mobile devices are covered. PREREQUISITE: 10154130 MS Windows 1

**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

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment 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.

**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: 10154104 Intro to IT

**SERVICE DESK 1**...provides the learner with the knowledge required to become a Help Desk Support technician. Students will learn fundamental Help Desk concepts such as: Help Desk operations, roles and responsibilities, processes and procedures, tools and technologies, individual and team performance measures, and how to provide support as a Help Desk professional.

**SERVICE DESK 2**...expands the learners' ability to troubleshoot all information technology issues utilizing Service Desk and Asset Management applications. Learners will expand their knowledge of ITIL practices and procedures used to manage an IT operation and its associated infrastructure. Communication, documentation, and teamwork skills are enforced. PREREQUISITE: 10154128 Service Desk 1

**TRAINING AND DOCUMENTATION**...provides the learner with the skills to develop various types of user documentation in hard copy and on-line formats. In addition, the learner will develop oral and written training skills necessary to provide individual and group end-user training.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 10-150-2 Associate Degree in Applied Science • Four Terms

### ABOUT THE PROGRAM

Computers networked together sharing data and resources are powerfully amazing! Today, businesses of all sizes are networking their computers to maximize efficiency and productivity. If creating an overall computer network strategy, having the ability to analyze ideas/processes, installing hardware/software, and troubleshooting problems are skills you would like to put to use in a career, becoming a network specialist is your ticket to success.

### PROGRAM OUTCOMES

- Implement computer networks.
- Implement client systems.
- Implement server operating systems.
- Implement network security components.
- Develop technical documentation.
- Troubleshoot network systems.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

Students are required to have one USB 80 gig hard drive or greater.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10154104	Intro to IT	3
10150114	Networking I	3
10154122	PC Support	3
10801195	Written Communication	3
10804107	College Mathematics	3
		<b>15</b>
<b>Term 2</b>		
10150173	Server Administration 1	3
10150176	Networking 2	3
10154124	Information Security Principles	3
10801196	Oral/Interpersonal Communication OR 10801198 Speech	3
10809196	Introduction to Sociology OR 10809122 Introduction to American Government OR 10809166 Introduction to Ethics	3
		<b>15</b>
<b>Term 3</b>		
10150169	Network Design & Documentation	2
10150163	Networking 3	3
10150174	Server Administration 2	3
10150129	Virtualization	2
10809198	Introduction to Psychology	3
10809195	Economics	3
		<b>16</b>
<b>Term 4</b>		
10150165	Networking 4	3
10150125	Linux	2
10150175	Server Administration 3	3
10150179	Network Security	3
10150181	IT Networking Capstone	3
		<b>14</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**COLLEGE MATHEMATICS**...is designed to review and develop fundamental concepts of mathematics pertinent to the areas of: 1) arithmetic and algebra; 2) geometry and trigonometry; and 3) probability and statistics. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent

**ECONOMICS**...provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**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. PREREQUISITE: 10154104 Intro to IT

**INTRO TO IT**...introduces student to IT field to basic concepts and terminology of a computer system hardware and software, Operating Systems (including Mac OS), and Networks; applied skills include: managing computer data files; protecting against computer viruses; creating simple web pages; producing electronic word documents, spreadsheets and presentations; examining techniques of systems analysis and design, programming languages and database systems.

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**IT NETWORKING CAPSTONE**...will integrate many of the technologies and concepts that the students have learned throughout the Network Specialist program. The integration projects will include such areas as network client and server administration, general networking concepts, IP addressing, network security, and switch and router configuration. PREREQUISITES: 10150165 Networking 4 and 10150175 Server Administration 3

**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.

**NETWORK DESIGN AND 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

**NETWORK SECURITY**...introduces the student to the various methodologies for defending a network. Learners will develop an in-depth theoretical understanding of network security principles as well as the tools and configurations available. The learner will emphasize on the practical application of skills needed to design, implement, and support a secure Cisco network. PREREQUISITE: 10150163 Networking 3

**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

**NETWORKING 4**...is a hands-on course designed to introduce IT students to the terms and definitions of Analog phone systems and Voice over IP (VoIP) networks. The student will be configuring and maintaining an IP Telephony system, provisioning phones, configuring call features, and establishing voicemail. Cisco Call Manager, Call Manager Express, and Cisco VoIP phones are used to configure and build a converged IP telephony infrastructure. PREREQUISITE: 10150136 Networking 3

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment 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.

**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: 10154104 Intro to IT

**SERVER ADMINISTRATION 2**...is a hands-on course designed to introduce the learner to administration of Windows Server servers. The student will learn how to deploy, manage, and maintain servers; configure file and print services; configure network services and access; configure a network policy server infrastructure; configure and manage Active Directory; and configure and manage Group Policy. PREREQUISITE: 10150173 Server Administration 1

**SERVER ADMINISTRATION 3**...will introduce you to PowerShell and help you be effective with it in a production environment. PowerShell is both a scripting language and an administrative shell that lets you control and automate nearly every aspect of Windows. PREREQUISITE: 10150173 Server Administration 1

**VIRTUALIZATION**...is a hands-on course designed to introduce the learner to the skills needed to install, configure, and manage a highly available and scalable virtual infrastructure. Objectives include: create, configure, migrate, manage, and monitor virtual machines and virtual appliances; manage user access to the virtual infrastructure; and configure and manage virtual network and storage systems. PREREQUISITE: 10154104 Introduction to IT

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

### ABOUT THE PROGRAM

The program curriculum focuses on programming principles, including web application development, mobile device development, database administration, and integration of web marketing and website design.

### PROGRAM OUTCOMES

- Design software systems.
- Integrate database technologies.
- Develop software applications.
- Develop technical documentation.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

It is recommended that students have a home laptop. Students are strongly encouraged to take Written Communications during the summer before program start, General Education courses during summer break allowing concentrated time during semesters for core program courses, and Math with Business Applications in the first semester.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10152196	Web Development 1	3
10152120	Programming 1	1
10152121	Programming 2	3
10152124	Intro to Database Design & Development	2
10804123	Math with Business Applications	3
		<b>12</b>
<b>Term 2</b>		
10152199	Web Development 2	4
10152187	Web Development 3	4
10201118	Advancements in Web Design and Development	2
10801195	Written Communication	3
		<b>13</b>
<b>Term 3 (Summer)</b>		
10809195	Economics OR 10809166 Introduction to Ethics	3
10801196	Oral/Interpersonal Communication OR 10801198 Speech	3
		<b>6</b>
<b>Term 4</b>		
10152123	Mobile Device Development 1	3
10152106	Integrated Web Concepts	4
10152109	Object-Oriented Programming 1	4
10809196	Introduction to Sociology OR 10809172 Introduction to Diversity Studies	3
		<b>14</b>
<b>Term 5</b>		
10152112	Object-Oriented Programming 2	4
10152114	Mobile Device Development 2	3
10152192	Web and Software Developer-Capstone Project	3
10152115	Internship - Web & Software Developer	1
10152119	Portfolio Assessment-Web & Software Dev	1
10809198	Introduction to Psychology OR 10809188 Developmental Psychology	3
		<b>15</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**ADVANCEMENTS IN WEB AND DEVELOPMENT...**will explore the latest trends in Web design and development. Students will apply advanced techniques to create progressive and contemporary websites. PREREQUISITE: 10152196 Web Development 1

**ECONOMICS...**provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**INTEGRATED WEB CONCEPTS...**introduces the student to the three major components of the Web -- design, development, and marketing. A common course among Graphic and Web Design, Web and Software Developer, and Marketing, students from each program will be responsible for working in teams and to coordinate projects and present their industry to students from the other programs. PREREQ 10104102 Prin of Mktg and 101043 Mktg req met or 10152187 Web Dev 3 and 101527 IT Web and Soft Dev req met or 10201110 InDesign and 102012 Graphic and Web Design req met

**INTERNSHIP-WEB AND SOFTWARE DEVELOPER...**requires students to complete 72 hours of performing work in a business/industrial service setting related to their program objectives. Students are responsible for seeking and obtaining the internship workstation position. Course requirements including maintaining a log of work activities, identifying and receiving approval from the job supervisor and instructor, completing a work-related project, and an assessment of the student's portfolio. Students meet periodically at LTC. PREREQUISITE: 10152123 Mobile Device Development 1 and 10152106 Integrated Web Concepts and CONDITION: 101527 Web and Software Developer program requirements met

**INTRO TO DATABASE DESIGN AND DEVELOPMENT...**introduces the student to DBMS components, the design and development of databases, table relationships, SQL, database best practices and database integration with web applications.

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**MATH WITH BUSINESS APPLICATIONS...**covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**MOBILE DEVICE DEVELOPMENT 1...**introduces students to building hybrid mobile applications using HTML, CSS, and JavaScript, specifically JQuery mobile frameworks. Students will create applications for Google Play using the PhoneGap framework. PREREQUISITES: 10152199 Web Development 2 and 10201118 Advancements in Web Design & Development and 10152187 Web Development 3

**MOBILE DEVICE DEVELOPMENT 2...**will build upon the skills learned in Mobile Device Development 1 by building advanced hybrid mobile applications. PREREQUISITE: 10152123 Mobile Device Development 1

**OBJECT-ORIENTED PROGRAMMING 1...**introduces students to the Java programming language and object-oriented programming (OOP) concepts. Students will use the Java programming language and OOP to create desktop applications and server-side applications and services. PREREQUISITE: 10152187 Web Dev 3

**OBJECT-ORIENTED PROGRAMMING 2...**introduces the learner to Microsoft's .NET platform, .NET frameworks, content-managed Web sites, and Web server architecture. Students will develop interactive and dynamic web applications using the Microsoft ASP.NET, MVC architecture, and ADO.NET components to access data and data services through the creation of data-driven ASP.NET web pages, configuration of an ASP.NET application, the deployment of an ASP.NET application and the creation of XML web services. Microsoft SQL Server is used. PREREQUISITE: 10152109 Object-Oriented Programming 1 or 10152107 Game Development

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PORTFOLIO ASSESSMENT - WEB AND SOFTWARE DEVELOPER...**assesses what the student has learned through the Web and Software Developer degree. The course will focus on the continued development of their electronic career portfolio, the freelance/contract software development market, the analysis of the achievement of their core abilities and program outcomes, and job search topics such as resumes, cover letters, and interview skills. PREREQUISITES: 10152123 Mobile Device Dev 1 and 10152106 Integrated Web Concepts and 10152109 Object-Oriented Programming 1 or 10152107 Game Development and CONDITION: 101527 Web and Software Developer admissions requirements met

**PROGRAMMING 1...**introduces students to the concepts of programming with no coding. Using flowcharts, students will learn about the concepts of variables, data types, decision, loops, and arrays.

**PROGRAMMING 2...**builds on the concepts mastered in Programming 1 by introducing coding techniques using the JavaScript scripting language. Students will learn how to write code using variables, data types, decisions, loops, arrays, and functions. COREQUISITE: 10152120 Programming 1

**WEB AND SOFTWARE DEVELOPER-CAPSTONE PROJECT...**reinforces all program content by requiring students to plan, design, analyze, and develop a piece of software of their choice. Students will learn about concepts related to systems analysis and design and investigate and apply emerging development trends. PREREQUISITE: 10152199 Web Dev 2, 10152187 Web Dev 3, 10152123 Mobile Device Dev 1, and 10152106 Integrated Web Concepts and 10152109 Object Oriented Programming 1 or 10152107 Game Development

**WEB DEVELOPMENT 1...**introduces the students to web page design principles and proceeds to teach students how to create their own visually appealing designs for the web. Students will have hands-on experience using current versions of Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS) to code and format accessible, valid, and optimized web sites. Websites will be published live on the web using FTP.

**WEB DEVELOPMENT 2...**introduces the student to the JQuery JavaScript framework for developing dynamic client-side Web pages. PREREQUISITE: 10152196 Web Development 1 and 10152121 Programming 2

**WEB DEVELOPMENT 3...**introduces the learner to PHP, MySQL, PHP frameworks, content-managed Web sites, and Web server architecture. Topics covered include an introduction to the Apache Web server, server-side scripting, PHP control logic and functions, controlling state using sessions and cookies, querying database content and population to an HTML Web page, MySQL relational database administration, and processing form information and populating it to a MySQL database. PREREQUISITES: 10152121 Programming 2 and 10152196 Web Development 1 and 10152124 Intro to Database Design and Development

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 30-152-4 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

The program curriculum focuses on programming principles, including web application development, database administration, and website design.

### PROGRAM OUTCOMES

- Integrate database technologies.
- Develop software applications.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

Students are required to have access to a computer with internet connectivity. Computers are available at LTC's campuses for those students who do not have a computer and/or internet access at home.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10152120	Programming 1	1
10152121	Programming 2	3
10152124	Intro to Database Design & Development	2
10152196	Web Development 1	3
10804123	Math with Business Applications	3
		<b>12</b>
<b>Term 2</b>		
10152199	Web Development 2	4
10152187	Web Development 3	4
10201118	Advancements in Web Design and Development	2
		<b>10</b>
		<b>TOTAL 22</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ADVANCEMENTS IN WEB AND DEVELOPMENT...**will explore the latest trends in Web design and development. Students will apply advanced techniques to create progressive and contemporary websites. PREREQUISITE: 10152196 Web Development 1

**INTRO TO DATABASE DESIGN AND DEVELOPMENT...**introduces the student to DBMS components, the design and development of databases, table relationships, SQL, database best practices and database integration with web applications.

**MATH WITH BUSINESS APPLICATIONS...**covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**PROGRAMMING 1...**introduces students to the concepts of programming with no coding. Using flowcharts, students will learn about the concepts of variables, data types, decision, loops, and arrays.

**PROGRAMMING 2...**builds on the concepts mastered in Programming 1 by introducing coding techniques using the JavaScript scripting language. Students will learn how to write code using variables, data types, decisions, loops, arrays, and functions. COREQUISITE:10152120 Programming 1

**WEB DEVELOPMENT 1...**introduces the students to web page design principles and proceeds to teach students how to create their own visually appealing designs for the web. Students will have hands-on experience using current versions of Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS) to code and format accessible, valid, and optimized web sites. Websites will be published live on the web using FTP.

**WEB DEVELOPMENT 2...**introduces the student to the JQuery JavaScript framework for developing dynamic client-side Web pages. PREREQUISITE: 10152196 Web Development 1 and 10152121 Programming 2

**WEB DEVELOPMENT 3...**introduces the learner to PHP, MySQL, PHP frameworks, content-managed Web sites, and Web server architecture. Topics covered include an introduction to the Apache Web server, server-side scripting, PHP control logic and functions, controlling state using sessions and cookies, querying database content and population to an HTML Web page, MySQL relational database administration, and processing form information and populating it to a MySQL database. PREREQUISITES: 10152121 Programming 2 and 10152196 Web Development 1 and 10152124 Intro to Database Design and Development

## Program Number 31-420-1 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

Just about every product that you use in your daily activities is the result of a machine tool manufacturing process. If you like hands-on work, are detail-oriented, have good math skills, and are able to develop and follow through on work instructions, a career in machine tool operation offers you lifelong opportunities.

### PROGRAM OUTCOMES

- Apply basic safety practices in the machine shop.
- Interpret industrial/engineering drawings.
- Apply precision measuring methods to part inspection.
- Perform basic machine tool equipment setup and operation
- Perform programming, setup, and operation of CNC machine tools.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### RELATED PROGRAMS

- CNC Technician Technical Diploma
- Machinist Apprenticeship
- Tool & Die Apprenticeship

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
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 1A	1
31420341	Machine Tool Lathes 1B	1
31420350	Machine Tool Mills 1A	1
31420351	Machine Tool Mills 1B	1
31420311	Machine Tool Programming Basic	1
31420325	Machine Tool Math Basic	1
31420326	Machine Tool Math Intermediate	1
31420385	Machine Tool Print Reading 1	1
31420386	Machine Tool Print Reading 2	1
		<b>13</b>
<b>Term 2</b>		
31420313	Machine Tool Programming	1
31420315	CAM for Milling Machines	1
31420342	Machine Tool Lathes 2	1
31420352	Machine Tool Mills 2	2
31420308	Intro to CNC Turning Center	1
31420307	Intro to CNC Machining Center	1
31420380	Machine Tool CNC Turning Center	2
31420382	Machine Tool CNC Machining Center	2
31420398	Machine Tool Technical Skills Portfolio	1
31809362	Psychology for Life	1
31801359	Communication Skills for the Workplace	2
		<b>15</b>
		<b>TOTAL 28</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**CAM FOR MILLING MACHINES**...provides the learner 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. COREQUISITE: 31420352 Machine Tool Mills 2

**COMMUNICATION SKILLS FOR THE WORKPLACE**...prepares the student to develop paper job-search tools and job-related writing skills to increase 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.

**INTRO TO CNC MACHINING CENTER**...prepares the learner to follow Computer Numerical Control (CNC) machining center machine tool safety rules, identify components, apply coordinate systems, load programs into the machining center, load cutting tools, enter offsets for tools and workpiece, and operate a CNC machining center. PREREQUISITE: 31420340 Machine Tool Lathes 1A or 10420103 Machine Tool Lathes 1A or 31420395 Ind Mtnc Machine Tool Lathes and Mills

**INTRO TO CNC TURNING CENTER**...prepares the learner to follow Computer Numerical Control (CNC) turning center safety rules, apply coordinate systems, identify CNC turning center components and tooling; load programs into the CNC turning center, load cutting tools, enter offsets for tools and workpiece, and operate a CNC turning center. PREREQUISITES: 31420340 Machine Tool Lathes 1A or 10420103 Machine Tool Lathes 1A or 31420395 Ind Mtnc Machine Tool Lathes and Mills

**MACHINE TOOL CNC MACHINING CENTER**...prepares the learner to follow Computer Numerical Control (CNC) machining center safety rules, apply coordinate systems, identify components and tooling, and set up and operate a CNC machining center with Haas controls. COREQUISITE: 31420307 Intro to CNC Machining Center

**MACHINE TOOL CNC TURNING CENTER**...prepares the learner to follow Computer Numerical Control (CNC) turning center safety rules, apply coordinate systems, identify CNC turning center components and tooling, and set up and operate a CNC turning center with Haas controls. COREQUISITE: 31420308 Intro to CNC Turning Center

**MACHINE TOOL DRILLS**...prepares the learner to interpret the attributes of hole-producing tools, follow drilling machine tool safety rules, identify drilling machine tool components, and operate sensitive drilling machine tools. COREQUISITE: 31420310 Machine Tool Hand Tools or 31420394 Ind Mtnc Machine Tool Intro or 10420194 Machine Tool Introduction

**MACHINE TOOL HAND TOOLS**...prepares the learner to identify and use tools required during the machining and assembly process including precision, semi-precision measuring tools, layout, surface finish, and mechanical hand tools, power hand tools, and a variety of fastener types. COREQUISITE: 31420330 Machine Tool Measuring

**MACHINE TOOL LATHES 1A**...introduces the student to the characteristics and attributes of turning tools: follow engine lathe safety rules, identify engine lathe components, perform facing and center drilling operations, perform turning operations. COREQUISITE: 31420310 Machine Tool Hand Tools or 31420394 Ind Mtnc Machine Tool Introduction or 10420194 Machine Tool Introduction

**MACHINE TOOL LATHES 1B**...prepares the learner to perform turning operations using various workholding devices, includes universal jaw chuck and spring collet chuck. Perform turning operations using radius cutting tools, chamfering tools, and grooving tools. COREQUISITE: 31420340 Machine Tool Lathes 1A or 10420103 Machine Tool Lathes 1A or 31420349 Machine Tool Lathes 1 for Fabricators or 31420395 IM MT Lathes and Mills

**MACHINE TOOL LATHES 2**...prepares the learner to perform hole producing, cutoff, and threading operations on a manual lathe. COREQUISITE: 31420341 Machine Tool Lathes 1B

**MACHINE TOOL MATH-BASIC**...prepares the learner to use scientific calculators for the applications of common fraction and mixed number problems, decimal problems, inch and metric conversion problems, basic percentage problems, powers and roots, and pre-algebra problems. This course is self-paced when delivered in the evening.

**MACHINE TOOL MATH-INTERMEDIATE**...prepares the learner with the necessary skills to use scientific calculators for the application of algebra, geometry, and trigonometry. This advanced course when delivered in the evening is self-paced, open-entry/exit, and designed for individualized student needs. COREQUISITE: 31420325 or 31420320MB Machine Tool Math-Basic

**MACHINE TOOL MEASURING**...prepares the learner to use semi-precision measuring instruments and measurement techniques, use precision measuring instruments and measurement techniques, and use a surface plate as a basis for precision measurements.

**MACHINE TOOL MILLS 1A**...prepares the learner to identify vertical milling machine components, select cutting tools and workholding device(s), apply safety rules, set up the vertical milling machine, and mill square surfaces. COREQUISITE: 31420310 Machine Tool Hand Tools or 31420394 Ind Mtnc Machine Tool Intro or 10420194 Machine Tool Intro

**MACHINE TOOL MILLS 1B**...prepares the learner to mill precision steps and slots, mill keyseats on a shaft, and machine holes in rectangular workpieces. COREQUISITE: 31420350 Machine Tool Mills 1A or 10420105 Machine Tool Mills 1A or 31420395 IM MT Lathes and Mills or 31420348 Machine Tool Mills 1 for Fabricators

**MACHINE TOOL MILLS 2**...prepares the learner to select cutting tools, set up, program and operate Proto-Trak vertical mills. Operations to include: face mill, mill slots, pockets, angles and position drill and program. COREQUISITE: 31420351 Machine Tool Mills 1B

**MACHINE TOOL PRINT READING 1**...prepares the learner to read prints; make isometric sketches; interpret orthographic projection drawings, to include sections, surface finishes, and tolerancing. The course when delivered in the evening is self-paced, open-entry/exit, and designed for individualized student needs.

**MACHINE TOOL PRINT READING 2**...prepares the learner to read prints; make isometric sketches; interpret orthographic projection drawings to include sections, auxiliary views, threads, fasteners, surface finishes, geometric dimensions, tolerancing, and assembly prints. The course when delivered in the evening is self-paced, open-entry/exit, and designed for individualized student needs. COREQUISITE: 31420385 or 31457385P1 Machine Tool Print Reading 1

**MACHINE TOOL PROGRAMMING**...prepares the learner to interpret positions in coordinate systems, prepare a sequence of machining operations, use G&M programming codes, and prepare G&M part programs for machining centers and turning centers. A basic understanding of the tools used on Lathes is necessary to be successful in this class. COREQUISITE: 31420311 Machine Tool Programming Basic

**MACHINE TOOL PROGRAMMING BASIC**...will have the learner demonstrate an understanding of Computer Numerical Control (CNC) systems used on machine tools, prepares the learner to interpret positions in the coordinate system, prepare a cutting tool list; prepare a machining process list, identify and use common G&M codes, and prepare G&M part programs for machining centers. A basic understanding of cutters used on the Mills is necessary to be successful in this class.

**MACHINE TOOL SAWS AND MATERIAL SELECTION**...prepares the learner to identify metal composition and classification, follow cutoff machine tool safety rules, operate horizontal cutoff machine tools, and operate vertical cut off machine tools. COREQUISITE: 31420310 Machine Tool Hand Tools or 31420394 Ind Mtnc Machine Tool Introduction or 10420194 Machine Tool Introduction

**MACHINE TOOL TECHNICAL SKILLS PORTFOLIO**...prepares the learner to create a capstone project using multiple machines and setups, create a portfolio showing skills attained throughout Machine Tool courses, resume, and grade sheet for all Machine Tool courses. COREQUISITES: 31420342 Machine Tool Lathes 2 and 31420352 Machine Tool Mills 2

**PSYCHOLOGY FOR LIFE**...prepares the learner to select behavior modification techniques, demonstrate techniques for enhancing memory, analyze expressions of emotion, use conflict for common good, employ techniques to reduce conflict/frustration, use several methods to reduce stress, interpret personality types, ascertain contributors to perception, and apply methods of problem-solving.

**Program Number 50-420-2  
4-Year Contract**

**Work Hours (including related instruction): 8000  
Related Instruction Hours: 432 • Night School Hours: 8**

### ABOUT APPRENTICESHIP

Apprenticeships are employer-sponsored training programs. You must have a contract before being invited to school. A special application process is used for these programs. Please contact the Apprenticeship Office for the proper forms. Apprenticeship means you earn while you learn. If you want a career in a skilled trade, apprenticeship is the best way to get there. You'll combine on-the-job training with on-campus learning—you'll have the best of both worlds when it comes to learning the skills you need to get ahead. And even better, you'll earn a paycheck while you learn those skills.

### ABOUT THE CAREER

Machines allow industry to produce large quantities of materials quickly, precisely, and cost-effectively. But without high-skilled operators, the machines are useless. That's where you come in. The Machinist Apprenticeship program is an employer-sponsored, hands-on training program in which you'll learn all phases of the machinist occupation. If you're interested in working with mechanical equipment and following precise plans to produce materials of the highest quality, becoming a journey-level machinist may be the perfect career for you.

### CAREERS

Graduates of LTC's Machinist Apprenticeship program work as journey-level machinists in a variety of industrial settings.

### INDUSTRIAL APPRENTICE APPLICATION REQUIREMENTS

- Determined by employer
- Wisconsin Apprentice Contract

### PROGRAM OUTCOMES

- Apply basic safety practices in the machine shop.
- Interpret industrial/engineering drawings.
- Apply precision measuring methods to part inspection.
- Perform basic machine tool equipment setup and operation.
- Perform programming, setup, and operation of CNC machine tools.

### APPROXIMATE COSTS

Contact the LTC Apprenticeship Office or visit [www.gotoltc.edu/apprenticeship](http://www.gotoltc.edu/apprenticeship) for detailed information.

### SPECIAL NOTE

You must have a sponsoring employer and contract before attending school.

### CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
50420714	Engineering Drawings for Machine Trades Apprentice 1	1
50420713	Precision Measurement for Machine Tool Trades	1
<b>2</b>		
<b>Term 2</b>		
50420734	Mathematics for Machinist Apprentice 1	1
50420715	Mechanical Hardware and Hand Tools for Machine Trades Apprentice	0.5
50420720	Materials and Cut-Off Machines for Machine Trades	0.5
<b>2</b>		
<b>Term 3</b>		
50420721	Math for Machine Trades 2	0.5
50420722	Engineering Drawings for Machine Trades 2	0.5
50420718	Drilling Machines for Machine Trades Apprentice	0.5
50420717	Milling Machines for Machine Trades Apprentice	0.5
<b>2</b>		
<b>Term 4</b>		
50420724	CNC Programming and Planning for Machine Trades	1
50420716	Turning Machines for Machine Trades Apprentice	0.5
50420723	Intro to CAM for Machine Tools Trades Apprentice	0.5
<b>2</b>		
<b>Term 5</b>		
50420725	Basic CAD/CAM for Machine Trades Apprentice	1
50420726	Jig and Fixture Design for Machine Trade Apprentice	0.5
50420719	Grinding Machines for Machine Trades Apprentice	0.5
<b>2</b>		
<b>Term 6</b>		
50420733	CNC Operations for Machine Tool Trades Apprentice	1
50420727	Geometric Design and Tolerancing for Machine Trades	0.5
50420731	Metallurgy for Machine Trades Apprentices	0.5
<b>2</b>		
		<b>TOTAL 12</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**BASIC CAD/CAM FOR MACHINE TRADES APPRENTICE**...is designed to provide concepts and techniques used in computer-aided design (CAD) and computer-aided manufacturing (CAM) as part of their related instruction. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**CNC OPERATIONS FOR MACHINE TOOL TRADES APPRENTICE**...will examine CNC related operations and safety. Course competencies include classifying types of equipment, comparing CNC tooling, setup, and work holding operations. Additional CNC programming skill development is included in the course. CNC controls and communications are explored as well. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**CNC PROGRAMMING AND PLANNING FOR MACHINE TRADES**...is a classroom introduction to CNC programming for apprentices, with a focus on CNC turning and milling centers. Apprentices will create set up sheets, develop tool lists, calculate speeds and feeds, assign tool offsets and write CNC program. CONDITION: 504393 Tool & Die Apprentice or 504202 Machinist Apprentice Prog Requirements Met

**DRILLING MACHINES FOR MACHINE TRADES APPRENTICE**...focuses on the safety, terminology, construction and operations of drilling machines in the metal-working industry. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**ENGINEERING DRAWINGS FOR MACH TRADES APPRENTICE 1**...will acquaint the apprentice with the interpretation of engineering prints and other technical and manufacturing documentation. The primary focus of the course will be on that part of manufacturing most closely related to machining and tooling. Background information is provided relative to the process used to create and finish the product or piece part on the prints being studied. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**ENGINEERING DRAWINGS FOR MACHINE TRADES 2**...prepares the learner to interpret manufacturing prints to extract detailed information about threads, sections, auxiliary views, fasteners, surface finishes, welding symbols, assembly, geometric location, and tolerances. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**GEOMETRIC DESIGN AND TOLERANCING FOR MACHINE TRADES**... will acquaint the apprentice with the skills to interpret the geometric dimensions and tolerances found on engineering drawings and in other industrial documents. Instruction concentrates on interpreting the symbols, identifying tolerance zones and determining ways to check parts for conformity to the specified geometric controls. Reference is made to ASME Y14.5M - 1994. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**GRINDING MACHINES FOR MACHINE TRADES APPRENTICE**...focuses on the safety, terminology, construction, and operation of grinding machines in the metal working industry. It instructs apprentices in the use of traditional grinding machines and the attachments and accessories frequently encountered in manufacturing operations that use the common grinding processes. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**INTRO TO CAM FOR MACHINE TOOLS TRADES APPRENTICE**...is widely used in industry for creating G&M code programs for CNC machines. In this course the learner will explore the Mastercam interface. You will be determining the proper post processors for the work being done. Create and edit basic geometry. Create and edit tool paths for basic operations. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**JIG AND FIXTURE DESIGN FOR MACHINE TRADE APPRENTICE**...introduces the apprentice to the concepts of jig and fixture design as part of their apprentice related instruction. Topics include the basic elements of tool design, jig and fixture application, and the actual design of tooling. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**MATERIALS AND CUTOFF MACHINES FOR MACHINE TRADES**...prepares the learner to identify metal composition and classification, follow cutoff machine tool safety rules, operate horizontal cutoff machine tools, and operate vertical machine tools. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**MATH FOR MACHINE TRADES 2**...prepares the learner to interpret symbols used in algebraic expressions, solve equations by the rearrangement of formulas, use formulas, solve unknown angles using angular principles, and solve for the angles and length of sides in right triangles. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**MATHEMATICS FOR MACHINIST APPRENTICE 1**...provides applied mathematics instruction from a review of basic arithmetic; basic algebra; applications based on geometry; right triangle trigonometry and oblique angle trigonometry; and compound angles. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice program requirements met

**MECHANICAL HARDWARE & HAND TOOLS FOR MACHINE TRADES APPRENTICE**... provides instruction for the apprentice in the recognition, selection, and operation of mechanical hardware and hand tools. Apprentices are taught to use outside sources to select correct component or tool sizes, characteristics, and operating parameters. Apprentices will sharpen drills and single point cutting tools. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**METALLURGY FOR MACHINE TRADES APPRENTICES**...prepares the learner to interpret the properties of ferrous and non-ferrous materials as well as how to heat treat and test the hardness of ferrous materials. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**MILLING MACHINES FOR MACHINE TRADES APPRENTICE**...will instruct apprentices on the basic principles of vertical and horizontal milling machines for the machine tool trade. Instruction includes safety, basic parts and functions of the machines, work holding devices, tooling requirements, and feeds and speeds. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**PRECISION MEASUREMENT FOR MACHINE TOOL TRADES**...is designed to acquaint the apprentice with the measurement systems and tools most frequently used in layout and machining processes. Learning outcomes relate to semi-precision through super-precision measuring tools and equipment combined with opportunities to investigate new technologies. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**TURNING MACHINES FOR MACHINE TRADES APPRENTICE**...will acquaint the apprentice with the terminology, methods, and operations for turning machines used in the metal-working industry. Apprentices will learn to perform calculations needed to operate turning machines including speed and feed calculations. Apprentices will make calculations necessary to setup a turning machine for screw threads and taper operations. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

### ABOUT THE PROGRAM

Machines are important in our lives—directly or indirectly. Broken or inefficient machines slow the pace of manufacturing and, ultimately, profits. To remain competitive in today’s fast-paced industrial/manufacturing environment, equipment needs to be maintained to run at peak performance. If you like to troubleshoot problems, put theory to work hands-on, and have interests in math and mechanical processes, a career in industrial maintenance may be your key to success.

### PROGRAM OUTCOMES

- Demonstrate safe work procedures.
- Install industrial equipment and systems.
- Maintain industrial equipment and systems.
- Troubleshoot industrial equipment and systems.
- Repair industrial equipment and systems.
- Communicate technical information.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

Students need to supply their own safety glasses and welding gloves.

### RELATED PROGRAMS

- Millwright Apprenticeship
- Electro-Mechanical Maintenance Technology
- Electro-Mechanical Automation Technology

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10804113	College Technical Math 1A	3
10462109	Maintenance Introduction	1
10462111	Maintenance Print Reading	2
10462107	Tools and Measurement	1
10620122	Industrial Wiring	2
10420194	Machine Tool Introduction	2
10442100	Welding Introduction	1
10457103	Fabrication Introduction	1
10462115	Layout and Rigging	1
		<b>14</b>
<b>Term 2</b>		
10462123	Pumps, Fluid/Air Handling	2
10620155	Hydraulics and Pneumatics	3
10420103	Lathes 1	1
10420105	Mills 1	1
10462125	Bearings and Lubrication	3
10462119	Power Transmission	2
10462121	Troubleshooting and Machine Repair	3
10801196	Oral/Interpersonal Communication	3
		<b>18</b>
		<b>TOTAL 32</b>

*Curriculum  
Modifications Pending  
State Approval*

Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.





**BEARINGS AND LUBRICATION**...prepares the learner to properly identify, remove, install, and maintain both plain and rolling element bearings used with either a radial or axial load, including ball, cylindrical roller, tapered roller, linear, and thrust bearings; use manufacturers' resources for proper usage and life of bearings; and look at proper types, properties, and application methods of lubrication. PREREQUISITES: 10804113 College Tech Math 1A and 10462109 Maintenance Introduction or 31462309 Industrial Maintenance Introduction

**COLLEGE TECHNICAL MATHEMATICS 1A**...prepares the student to solve linear, quadratic, and relational equations; graph; formula rearrangement; solve systems of equations; percent; proportions; and operations on polynomials. Emphasis will be on the application of skills to technical problems. PREREQUISITES: 10834110 Elementary Algebra w Apps or 10804107 College Mathematics or 31457318 Ind Mtnc Trades Math or 31420320 Machine Tool Math or math placement assessment equivalent

**FABRICATION INTRODUCTION**...introduces the learner to various types of structural steel, sheet metal, and pipe, and prepares the learner to perform fabrication from assembly prints, including cutting, welding, bending, straightening, and repair. COREQUISITE: 10442100 Welding Introduction or PREREQUISITES: 31442346 IM Intro to Welding or 31442300 Welding Intro and COREQUISITE: 10462109 Maintenance Intro or PREREQUISITE: Industrial Maintenance Intro

**HYDRAULICS AND PNEUMATICS**...prepares the learner to identify hydraulic and pneumatic component symbols and terms, adjust a pressure relief valve, analyze the operation of a pilot operated relief valve; analyze Pascal's law; evaluate flow, velocity, work and power in industrial hydraulic and pneumatic circuits; analyze meter-in, meter-out, and bypass flow control circuits; identify basic hydraulic and pneumatic control valves; and assemble hydraulic circuits. PREREQUISITES: 10462109 Maintenance Intro or 31462309 Industrial Maintenance Intro and 10804113 College Tech Math 1A

**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.

**LATHES 1**...introduces the student to the characteristics and attributes of turning tools: follow engine lathe safety rules, identify engine lathe components, perform facing and center drilling operations, perform turning operations. COREQUISITE: 10462107 Tools and Measurement or PREREQUISITE: 31462325 Maintenance Tools and Measurement and PREREQUISITE: 10420194 Machine Tool Intro or 31420394 IM Machine Tool Intro

**LAYOUT AND RIGGING**...prepares the learner to perform layout skills for industrial maintenance to include machine layout, proper rigging, installation, and leveling with emphasis on baseline layout, machine rigging and installation, machine leveling, and alignment procedures. Participants will obtain lift truck operation certification upon completion. COREQUISITE: 10462109 Maintenance Intro or PREREQUISITE: 31462309 Ind Mtnc Intro and COREQUISITE: 10804113 College Tech Math 1A and COREQUISITE: 10462111 Maintenance Print Reading or PREREQUISITE: 31462388 IM Print Reading

**MACHINE TOOL INTRODUCTION**...prepares the learner with the skills to identify basic types of machining processes, follow standard shop safety rules, use semi-precision and precision measuring tools, perform workpiece layout procedures, identify metal composition and classification, follow cutoff machine safety rules, operate vertical and horizontal cutoff machines, follow sensitive drill press safety rules, identify drill press components, interpret attributes of hole-producing tools, and operate a sensitive drill press.

**MAINTENANCE INTRODUCTION**...prepares the learner to apply basic safety, mechanics, force, friction, work, and energy; learn terminology related to maintenance; introduction to threaded and non-threaded fasteners and concrete anchoring; learn to use precision measuring tools; introduction to single-phase and three-phase motor wiring. PREREQUISITE: 31462325 Maintenance Tools and Measurement or COREQUISITE: 10462107 Tools and Measurement

**MAINTENANCE PRINT READING**...prepares the learner to read prints; make isometric sketches; interpret orthographic projection drawings, to include sections, surface finishes, and tolerancing. The course when delivered in the evening is self-paced, open-entry/exit, and designed for individualized student needs.

**MILLS 1**...prepares the learner to identify vertical milling machine components, select cutting tools and workholding device(s), apply safety rules, set up the vertical milling machine, and mill square surfaces. COREQUISITE: 10420103 Lathes 1 or PREREQUISITE: 31420395 IM Machine Tool Lathes and Mills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**POWER TRANSMISSION**...introduces the learner to belt, chain, and gear drives used in industrial maintenance applications, including v-belts, flat belts, timing belts, conveyor chains, roller chains, bevel gears, worm gears, helical gears, spur gears, couplings, and alignment with emphasis on identification, installation, repair, and maintenance. COREQUISITE: 10462119 Bearings and Lubrication

**PUMPS, FLUID/AIR HANDLING**...prepares the learner to identify, install, repair, and maintain common pumps and plumbing applications, including centrifugal pumps, diaphragm pumps, packing and seals, tubing, and installing hose and piping used with fluid and air handling. PREREQUISITES: 10462115 Layout and Rigging or 31462302 IM Layout and Rigging and COREQUISITE: 10620155 Hydraulics and Pneumatics

**TOOLS AND MEASUREMENT**...prepares the learner to use hand tools, precision measuring instruments, and torque tools.

**TROUBLESHOOTING AND MACHINE REPAIR**...prepares the learner to perform essential troubleshooting, repair, and preventive maintenance of various machine tools and installations used in industrial maintenance and to integrate the skills learned in the other maintenance courses to perform complete repair of machine tools. COREQUISITES: 10462119 Power Transmission and 10462123 Pumps, Fluid/Air Handling and PREREQUISITE: 10620122 Industrial Wiring

**WELDING INTRODUCTION**...introduces the learner to the world of welding, weld shop safety practices, welding terminology, and welding machine setup to industry standards. Learners will be introduced to the three major welding processes: SMAW, GMAW, and GTAW and will build skills welding with each process in the flat, and horizontal positions while using the common welding joints found in industry. The learner will process material using the two major hand held cutting processes - the Oxyfuel and PAC cutting processes

**Program Number 50-423-1  
4-Year Contract**

**Work Hours (including related instruction): 8320  
Related Instruction Hours: 576 • Night School Hours: 8**

### ABOUT APPRENTICESHIP

Apprenticeships are employer-sponsored training programs. You must have a contract before being invited to school. A special application process is used for these programs. Please contact the Apprenticeship Office for the proper forms. Apprenticeship means you earn while you learn. If you want a career in a skilled trade, apprenticeship is the best way to get there. You'll combine on-the-job training with on-campus learning—you'll have the best of both worlds when it comes to learning the skills you need to get ahead. And even better, you'll earn a paycheck while you learn those skills.

### ABOUT THE CAREER

Maintenance mechanics and millwrights install, dismantle, or move machinery and heavy equipment according to layout plans, blueprints, or other drawings. They keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment; and repairing buildings, floors, or stairs. This program provides the related instruction portion for this trade's apprenticeship.

### CAREERS

Graduates of LTC's Maintenance Mechanic/Millwright Apprenticeship program work as journey-level maintenance mechanics/millwrights in a variety of industrial and organizational settings.

### INDUSTRIAL APPRENTICE APPLICATION REQUIREMENTS

- Determined by employer
- Wisconsin Apprentice Contract

### PROGRAM OUTCOMES

- Demonstrate proper rigging techniques.
- Select an appropriate power transmission system for a given application.
- Identify suitable pumps for given applications.
- Recommend bearings for given applications.
- Plan for fabricating parts and assemblies according to specifications.
- Apply operational and troubleshooting principles to fluid power systems.
- Lay out an equipment installation plan.
- Plan maintenance schedules for a given system.

### APPROXIMATE COSTS

Contact the LTC Apprenticeship Office or visit [www.gotoltc.edu/apprenticeship](http://www.gotoltc.edu/apprenticeship) for detailed information.

### SPECIAL NOTE

You must have a sponsoring employer and contract before attending school.

### CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
50423710	Math for the MMMP Trades	1
50423713	Precision Measurements for the MMMP Trades	0.5
50423717	Electricity for the MMMP Trades	0.5
<b>2</b>		
<b>Term 2</b>		
50423711	Print Reading for the MMMP Trades	1
50423726	Safety/Tools/Torque for the MMMP Trades	0.25
50423712	Fasteners for the MMMP Trades	0.5
50423723	Adhesives and Sealants for the MMMP Trades	0.25
<b>2</b>		
<b>Term 3</b>		
50423737	Equipment Installation for the MMP Trades	0.75
50423727	Concrete for the MMP Trades	0.25
50423714	Rigging for the MMP Trades	1
<b>2</b>		
<b>Term 4</b>		
50423738	Sheet Metal and Structural Steel for the MMMP Trades	0.75
50423716	Metallurgy for the MMMP Trades	0.5
50423715	Welding for the MMMP Trades	0.75
<b>2</b>		
<b>Term 5</b>		
50423735	Mechanical Power Transmission for the MMMP Trades	0.75
50423733	Belts, Sheaves, Pulleys, and Drives for the MMMP Trades	0.5
50423736	Conveyors for the MMMP Trades	0.25
50423734	Gears, Gearboxes, and Gear Assemblies for the MMMP Trades	0.5
<b>2</b>		
<b>Term 6</b>		
50423731	Couplings and Alignment for the MMMP Trades	0.5
50423730	Bearings for the MMMP Trades	0.75
50423725	Machine Lubrication for the MMMP Trades	0.25
50423724	Preventative and Predictive Maintenance for the MMMP Trades	0.5
<b>2</b>		
<b>Term 7</b>		
50423720	Pipefitting & Valves for the MMMP Trades	0.75
50423722	Packings, Seals, and Gaskets for the MMMP Trades	0.5
50423732	Pumps for the MMMP Trades	0.75
<b>2</b>		
<b>Term 8</b>		
50423721	Hydraulics for the MMMP Trades	1
50423718	Pneumatics and Compressed Air for the MMMP Trades	0.75
50423719	Vacuum Systems for the MMMP Trades	0.25
<b>2</b>		
		<b>TOTAL 16</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**ADHESIVES AND SEALANTS FOR MMMP TRADES...**compares adhesives and sealant types and applications. The apprentice skills will be developed related to applying adhesives and sealants to repair applications, interpreting SDS information, and handling hazardous materials. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**BEARINGS FOR THE MMMP TRADES...**will examine bearing types and applications, and compare equipment bearings. Then learners will develop skills related to bearing inspection, selection, removal, mounting, lubrication and diagnosing bearing failures. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**BELTS, SHEAVES, PULLEYS AND DRIVES FOR MMMP...**compares different belt types and drive components. Apprentices will develop skills related to inspecting, troubleshooting, removing, selecting, and installing belt drive systems. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**CONCRETE FOR THE MMMP TRADES...**examines the principles of concrete as well as anchoring. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**CONVEYORS FOR THE MMMP TRADES...**examines chain, belt, and other types of conveyors and related components. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**COUPLINGS AND ALIGNMENT FOR MMMP TRADES...**compares different coupling types and examines common misalignment problems. Apprentices will develop skills related to inspecting, troubleshooting, lubricating, and preparing couplings for removal and installation by using dial indicators and laser aligners. This course will also discuss types and principles of clutches and brakes. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICITY FOR THE MMMP TRADES...**examines basic electrical terms and theory. Apprentices will learn motor wiring, multimeter use as well as lockout tagout as it applies to electricity. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**EQUIPMENT INSTALLATION FOR THE MMMP TRADES...**will layout equipment installations, plan for moving equipment, and set and level equipment. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**FASTENERS FOR MMMP TRADES...**provides apprentices with a chance to compare fasteners and their uses, analyze fastener failures, and install mechanical fasteners. This course also covers drilling and tapping application. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**GEARS, GEARBOXES, GEAR ASSEMBLIES FOR MMMP...**compares gear types and applications. Apprentices will develop skills inspecting gear assemblies, troubleshooting gear problems, removing gears and components, and reassembling gear drive systems. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**HYDRAULICS FOR MMMP TRADES...**provides instruction to apprentices concerning many aspects of inspecting, servicing, and troubleshooting hydraulic systems and components. Apprentices will learn safety related issues and be taught proper safety procedures for working with hydraulic systems and components. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**MACHINE LUBRICATION FOR THE MMMP TRADES...**examines the types, principles and applications of machine lubricants and lubricating systems. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**MATH FOR MMMP TRADES...**examines math concepts as they relate to millwrights and machine maintenance. Apprentices will develop skills related to converting fractions to decimals; using both standard and metric systems; applying basic algebra to solving problems; computing area, volume, mass, and torque; using trigonometry; and using math charts, tables and references in support of common work processes. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**MECHANICAL POWER TRANSMISSION FOR MMMP TRADES...**examines drive transmission systems and their applications, including roller chains. Apprentices will develop skills inspecting power transmission systems and troubleshooting mechanical drive systems. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**METALLURGY FOR MMMP TRADES...**develops apprentice skills regarding metallurgical concepts. Apprentices will compare various metals and their applications, apply metallurgical techniques to work processes, test metals for hardness, and examine heat treating applications. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PACKING, SEALS, GASKETS FOR MMMP TRADES...**will examine packing, seals, and gaskets and compare materials and applications. The skills in layout, cutting, inspecting, removing, and installing these components will be developed. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PIPEFITTING AND VALVES FOR MMMP TRADES...**introduces apprentices to principles, application and types of pipe, materials, fittings, tubing, and valves, and develops skills related to layout, installation, and maintenance. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PNEUMATICS AND COMPRESSED AIR FOR MMMP TRADES...**provides instruction to apprentices concerning many aspects of inspecting, servicing, and troubleshooting pneumatic systems and components. Apprentices will learn safety related issues and be taught proper safety procedures for working with pneumatic systems and components. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PRECISION MEASUREMENTS FOR MMMP TRADES...**develops apprentice skills in precision measurement. Types of measuring instruments will be compared and then measuring skills using tapes, steel rules, micrometers, calipers, indicators, and gauges will be developed. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PREVENTIVE AND PREDICTIVE MAINTENANCE FOR MMMP TRADES...**examines both preventive and predictive maintenance concepts as they apply to millwright work processes and machine maintenance including vibration and lubrication analysis. Apprentices will develop skills related to assessing machine conditions and faults based on both preventative and predictive maintenance. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PRINT READING FOR MMMP TRADES...**explores reading prints commonly used by millwrights and machine maintenance workers. Course competencies include comparing types of prints, interpreting structural drawings, identifying parts from prints, and developing apprentice sketching drawing skills. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PUMPS FOR THE MMMP TRADES...**compares different pump types including centrifugal, diaphragm, gear, vane and their applications. Apprentices will complete a field inspection of pumps and learn how to troubleshoot, remove, overhaul, and install and perform preventative maintenance on pumps. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**RIGGING FOR MMMP TRADES...**will compare types of rigging equipment and their uses; determine safe loads, rig and crib loads, and move a load with cranes and hoists, including signaling. Course will also cover usage and the safety of ladders and scaffolding. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**SAFETY, TOOLS AND TORQUE FOR MMMP TRADES...**examines safety as it relates to hand and power tools as well as theory and application of torque in the Maintenance/Millwright trade. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**SHEET METAL AND STRUCTURAL STEEL FOR MMMP TRADES...**compares types of sheet metal and tools used by the trade. Apprentices will develop skills related to fabricating sheet metal and structural steel, including layout, bending and forming, as well as erecting structural steel. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**VACUUM SYSTEMS FOR MMMP TRADES...**introduces principles of vacuum systems and interpreting vacuum system schematics. Apprentices will then develop skills related to installing, repairing, replacing and applying troubleshooting principles to vacuum systems and components. Course examines preventive maintenance techniques commonly used on the job. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**WELDING FOR MMMP TRADES...**compares common welding processes and develops apprentice skills related to welding, cutting, heating and using oxy-gas. Welding with arc, MIG and TIG is included, along with common cutting and joining techniques. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

## Program Number 32-462-1 Technical Diploma • Four Terms

### ABOUT THE PROGRAM

Times are changing in the field of maintenance. Facilities are running with both manual and automated equipment and both need to be maintained and repaired. If you like to troubleshoot, work with your hands, and have an interest in math and electrical and mechanical processes, a career in maintenance is for you. Your expertise and knowledge is needed in today's modern, automated facilities.

### PROGRAM OUTCOMES

- Demonstrate safe work procedures.
- Install industrial equipment and systems.
- Maintain industrial equipment and systems.
- Troubleshoot industrial equipment and systems.
- Repair industrial equipment and systems.
- Communicate technical information.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

Students need to supply their own safety glasses and welding gloves.

### RELATED PROGRAMS

- Electro-Mechanical Technology
- Millwright Apprenticeship
- Industrial Electrician Apprenticeship
- Maintenance Technician Apprenticeship

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
31462317	Trades Math Industrial Maintenance 1	1
31462318	Trades Math Industrial Maintenance 2	1
31462309	Industrial Maintenance Introduction	1
31462388	Industrial Maintenance Print Reading	1
31462325	Maintenance Tools and Measurement	1
10620122	Industrial Wiring	2
31420394	Industrial Maintenance Machine Tool Introduction	2
31801359	Communication Skills for the Workplace	2
31809362	Psychology for Life	1
		<b>12</b>
<b>Term 2</b>		
31462308	Industrial Maintenance Pumps, Fluid/Air Handling	2
31442346	Industrial Maintenance Introduction to Welding	1
31442347	Industrial Maintenance Introduction to Fabrication	1
10620155	Industrial Maintenance Hydraulics and Pneumatics	3
31420395	Industrial Maintenance Machine Tool Lathes and Mills	2
31462310	Industrial Maintenance Bearings and Lubrication	2
31462305	Industrial Maintenance Power Transmission	3
31462314	Troubleshooting/Mach Repair	3
		<b>17</b>
<b>Term 3</b>		
31462302	Industrial Maintenance Layout and Rigging	1
31462319	Preventive and Predictive Maintenance	1
10620168	Robotics Introduction	2
10620169	Robotic Maintenance	1
10660105	DC Fundamentals	2
10804115	College Technical Mathematics 1	5
		<b>12</b>
<b>Term 4</b>		
10620135	Electrical Robotic Maintenance	1
31420308	Intro to CNC Turning Center	1
31449301	OSHA 30	1
10620104	Fluid Power 2	3
10620138	Programmable Controllers - Allen Bradley	3
10620141	Industrial Controls and Motors	3
10660110	AC Fundamentals	2
		<b>14</b>
		<b>TOTAL 55</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 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, apply the elements and properties of basic measuring circuits, and describe transformer characteristics. PREREQUISITES: 10660105 DC Fundamentals

**COLLEGE TECHNICAL MATHEMATICS 1...**prepares the student to solve linear, quadratic, and rational equations; graphing; formula rearrangement; solve systems of equations; percent; proportions; measurement systems; computational geometry; right and oblique triangle trigonometry; trigonometric functions on the unit circle; and operations on polynomials. Emphasis will be on the application of skills to technical problems. This course is the equivalent of successful completion of College Tech Math 1a and 1b. PREREQUISITES: 10834110 Elementary Algebra w Apps or 31457318 Ind MtnC Trades Math or 31420320 Machine Tool Math or equivalent.

**COMMUNICATION SKILLS FOR THE WORKPLACE...**prepares the student to develop paper job-search tools and job-related writing skills to increase 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.

**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. COREQUISITES: 10804115 College Technical Math 1 or 10804113 College Tech Math 1A and 10804114 College Tech Math 1B or 10804118 Intermediate Algebra w Applications and 10624105 or 10624105HS Health Physics Calculations and Statistics

**ELECTRICAL ROBOTIC MAINTENANCE...**investigates error codes using the Fanuc A size cabinet with a R30iB controller. Students will identify the cause of the various codes and be trained in the repair. Students will also be trained in motor / gear replacement and robot mastering.

**FLUID POWER 2...**enhances the learner's ability to read schematics containing fluid power component symbols; assemble systems using schematics; analyze system's operation using a schematic; evaluate the general characteristics and terms of fluids under pressure, fluid conditioning, conductors, reservoirs, accumulators, pressure control; and troubleshoot malfunctioning pressurized systems. PREREQUISITE: 10620103 Fluid Power 1 or 10620155 Industrial Maintenance Hydraulics and Pneumatics

**INDUSTRIAL CONTROLS AND MOTORS...**prepares the learner to select control devices by function and operation; illustrate electrical circuits using symbols, diagrams, and abbreviations; explain the operation of magnetic solenoids and apply motor control techniques and introduces the student to three-phase power motor circuits for industrial applications. COREQUISITES: 10660110 AC Fundamentals

**INDUSTRIAL MAINTENANCE BEARINGS AND LUBRICATION...**prepares the learner to properly identify, remove, install, and maintain both plain and rolling element bearings used with either a radial or axial load, including ball, cylindrical roller, tapered roller, linear, and thrust bearings; use manufacturers' resources for proper usage and life of bearings; and look at proper types, properties, and application methods of lubrication. PREREQUISITE: 31462309 or 31462300 Ind MtnC Intro and 31462325 MtnC Tools and Measurement; and COREQUISITES: 31420320 Machine Tool Math or 31462317 Trades Math Indus Mntc 1 and 31462318 Trades Math Indus Mntc 2

**INDUSTRIAL MAINTENANCE HYDRAULICS AND PNEUMATICS...**prepares the learner to identify hydraulic and pneumatic component symbols and terms, adjust a pressure relief valve, analyze the operation of a pilot operated relief valve; analyze Pascal's law; evaluate flow, velocity, work and power in industrial hydraulic and pneumatic circuits; analyze meter-in, meter-out, and bypass flow control circuits; identify basic hydraulic and pneumatic control valves; and assemble hydraulic circuits. PREREQUISITE: 31462309 or 31462300 IM Introduction and 31462317 Trades Math IM 1 and 31462318 Trades Math IM 2 or COREQUISITE: 10804115 College Tech Math

**INDUSTRIAL MAINTENANCE INTRODUCTION...**prepares the learner to apply basic safety, mechanics, force, friction, work, and energy; learn terminology related to maintenance; introduction to threaded and non-threaded fasteners and concrete anchoring; learn to use precision measuring tools; introduction to single-phase and three-phase motor wiring. COREQUISITE: 31462325 Maintenance Tools and Measurement

**INDUSTRIAL MAINTENANCE INTRO TO FABRICATION...**introduces the learner to various types of structural steel, sheet metal, and pipe, and prepares the learner to perform fabrication from assembly prints, including cutting, welding, bending, straightening, and repair. PREREQUISITES: 31462309 or 31462300 Ind MtnC Intro, 31462325 MtnC Tools and Measurement, 31462388 Ind MtnC Print Rdg and 31442346 Ind MtnC Wldg or 31442300 or Welding Intro

**INDUSTRIAL MAINTENANCE INTRODUCTION TO WELDING...**introduces the learner to the welding field, including practicing safety and care of equipment and supplies used in common arc welding processes, practice in setup and technique for basic SMAW, GTAW, and GMAW equipment in common positions and on common joints; introduces oxy-fuel and plasma arc cutting.

**INDUSTRIAL MAINTENANCE LAYOUT AND RIGGING...**prepares the learner to perform layout skills for industrial maintenance to include machine layout, proper rigging, installation, and leveling with emphasis on baseline layout, machine rigging and installation, machine leveling, and alignment procedures. Participants will obtain lift truck operation certification upon completion. PREREQUISITES: 31462309 or 31462300 Industrial Maintenance Introduction and COREQUISITES: 31420320 Machine Tool Math or 31462317 Trades Math IM 1 and 31462318 Trades Math IM 2.

**INDUSTRIAL MAINTENANCE MACHINE TOOL INTRODUCTION...**prepares the learner with the skills to identify basic types of machining processes, follow standard shop safety rules, use semi-precision and precision measuring tools, perform workpiece layout procedures, identify metal composition and classification, follow cutoff machine safety rules, operate vertical and horizontal cutoff machines, follow sensitive drill press safety rules, identify drill press components, interpret attributes of hole-producing tools, and operate a sensitive drill press.

**INDUSTRIAL MAINTENANCE MACHINE TOOL LATHES AND MILLS...**prepares the learner to identify the characteristics and attributes of turning tools, apply engine lathe and milling machine safety rules, identify engine lathe and milling machine components, perform facing, turning, and cutoff operations, select and use various workholding devices and cutting tools, perform hole-producing operations, set up a vertical milling machine, mill square surfaces, precision steps and slots, and mill keyseats on a shaft. PREREQUISITE: 31420394 Ind Maint Machine Tool Introduction

**INDUSTRIAL MAINTENANCE POWER TRANSMISSION...**introduces the learner to belt, chain, and gear drives used in industrial maintenance applications, including v-belts, flat belts, timing belts, conveyor chains, roller chains, bevel gears, worm gears, helical gears, spur gears, couplings, and alignment with emphasis on identification, installation, repair, and maintenance. PREREQUISITES: 31462309 Industrial Maintenance Introduction or 31462300 Industrial Maintenance Introduction and 31462325 MtnC Tools and Measurement and COREQUISITE: 31462310 Industrial Maintenance Bearings and Lube

**INDUSTRIAL MAINTENANCE PRINT READING...**prepares the learner to read prints; make isometric sketches; interpret orthographic projection drawings, to include sections, surface finishes, and tolerancing. The course when delivered in the evening is self-paced, open-entry/exit, and designed for individualized student needs.

**INDUSTRIAL MAINTENANCE PUMPS, FLUID/AIR HANDLING...**prepares the learner to identify, install, repair, and maintain common pumps and plumbing applications, including centrifugal pumps, diaphragm pumps, packing and seals, tubing, and installing hose and piping used with fluid and air handling. PREREQUISITE: 31462309 or 31462300 IM Intro, 31462325 MtnC Tools/Measure, 31462388 IM Print Rdg, 31462317 Trades Math IM 1 and 31462318 Trades Math IM 2, or 31420320 MT Math and COREQUISITE: 10620155 IM Hyd/Pneum

**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.

**INTRO TO CNC TURNING CENTER...**prepares the learner to follow Computer Numerical Control (CNC) turning center safety rules, apply coordinate systems, identify CNC turning center components and tooling; load programs into the CNC turning center, load cutting tools, enter offsets for tools and workpiece, and operate a CNC turning center. COREQUISITE: 31420341 Machine Tool Lathes 1B or PREREQUISITE: 31420395 Ind MtnC Machine Tool Lathes and Mills

**MAINTENANCE TOOLS AND MEASUREMENT...**prepares the learner to use hand tools, precision measuring instruments, and torque tools.

**OSHA 30...**gives basic overview of OSHA's role in prevention and elimination of work-related illnesses and injuries. Includes information about employer & employee rights and responsibilities, and a brief look at safety on the job site in relation to cranes, electrical, excavation, fall protection, materials handling, personal protection equipment, stairs-ladders-scaffolds, and power tools.

**PREVENTIVE AND PREDICTIVE MAINTENANCE...**provides students the opportunity to research the items to be inspected in a preventive maintenance program. Students develop preventive maintenance schedules and perform actual inspections of mechanical, fluid power, and electrical systems. Techniques for troubleshooting periodic maintenance are explored. PREREQUISITE: 31462314 Troubleshooting/Machine Repair

**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. Course is highly computer based.

**PSYCHOLOGY FOR LIFE...**prepares learner to select behavior modification techniques, demonstrate techniques for enhancing memory, analyze expressions of emotion, use conflict for common good, employ techniques to reduce conflict/frustration, use several methods to reduce stress, interpret personality types, ascertain contributors to perception, and apply methods of problem-solving.

**ROBOTIC MAINTENANCE...**introduces the students to the robot teach pendant and robot jogging. Students will be taught to replace servo motors, recalibrate the robot and back up robot software and programs.

**ROBOTICS INTRODUCTION...**introduces the student to robotic axes, movement control, navigating the teach pendant, robotic frames, basic programming commands such as conditional branching, wait and call instructions.

**TRADES MATH INDUSTRIAL MAINTENANCE 1...**prepares the learner to use scientific calculators for the applications of common fraction and mixed number problems, decimal problems, inch and metric conversion problems, basic percentage problems, powers and roots, and pre-algebra problems. This course is self-paced when delivered in the evening.

**TRADES MATH INDUSTRIAL MAINTENANCE 2...**provides the learner with the necessary skills to use scientific calculators for the application of pre-algebra, algebra, geometry, and trigonometry. The course is self-paced, open entry/exit, and designed for individualized student needs. PREREQUISITE: 31462317 Trades Math Industrial Maintenance 1

**TROUBLESHOOTING/MACHINE REPAIR...**prepares the learner to perform essential troubleshooting, repair, and preventive maintenance of various machine tools and installations used in industrial maintenance and to integrate the skills learned in the other maintenance courses to perform complete repair of machine tools. PREREQUISITE: 31462309 or 31462300 IM Intro, 31462325 MtnC Tools/Meas, 31462305 IM Pwr Trans, 10620122 Ind Ctrl Intro, 31462308 IM Pmps, Fid/Air Hndlg and 31462310 IM Bearings/Lube

**Program Number 50-464-1**  
**5-Year Contract**

**Work Hours (including related instruction): 10,000**  
**Related Instruction: 1,296 hours • Night School: 8 hours**

## ABOUT APPRENTICESHIP

Apprenticeships are employer-sponsored training programs. You must have a contract before being invited to school. A special application process is used for these programs. Please contact the Apprenticeship Office for the proper forms. Apprenticeship means you earn while you learn. If you want a career in a skilled trade, apprenticeship is the best way to get there. You'll combine on-the-job training with on-campus learning—you'll have the best of both worlds when it comes to learning the skills you need to get ahead. And even better, you'll earn a paycheck while you learn those skills.

## ABOUT THE CAREER

Maintenance Technicians work in industrial manufacturing and safely perform mechanical and electrical duties to keep machines, equipment, or the structure of a facility in repair. The Maintenance Technician Apprenticeship program is employer sponsored. This program combines the on-the-job hands-on training with related training at the technical college. Some hands-on training is used to reinforce the related training. Thus, skills are developed to help the technician keep machines and equipment operating and productive. If you like to maintain, repair, and troubleshoot problems and put theory to work, a career as a maintenance technician may be your ticket to success.

## CAREERS

Graduates of LTC's Maintenance Technician Apprenticeship program work as journey-level maintenance technicians in a variety of industrial and organizational settings.

## INDUSTRIAL APPRENTICE APPLICATION REQUIREMENTS

- Determined by employer
- Wisconsin Apprentice Contract

## PROGRAM OUTCOMES

- Demonstrate proper rigging techniques.
- Select an appropriate power transmission system for a given application.
- Identify suitable pumps for given applications.
- Recommend bearings for given applications.
- Plan for fabricating parts and assemblies according to specifications.
- Apply operational and troubleshooting principles to fluid power systems.
- Lay out an equipment installation plan.
- Plan maintenance schedules for a given system.
- Apply AC and DC theory to an industrial setting.
- Apply the National Electric Code requirements to industrial equipment and facilities.
- Apply operational and troubleshooting principles to a transformer installation.
- Maintain electric motors and motor controls.
- Test solid-state electronic system components.
- Apply operational and troubleshooting principles to power systems & variable speed drives.
- Apply operational and troubleshooting principles to programmable logic controllers and automation equipment.
- Apply operational and troubleshooting principles to fluid power systems.
- Interpret industrial equipment drawings and electrical prints.
- Communicate trade and occupational-related information effectively.

## APPROXIMATE COSTS

Contact the LTC Apprenticeship Office or visit [www.gotoltc.edu/apprenticeship](http://www.gotoltc.edu/apprenticeship) for detailed information.

## SPECIAL NOTE

You must have a sponsoring employer and contract before attending school.

## CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
50423710	Math for the MMMP Trades	1
50423713	Precision Measurements for the MMMP Trades	0.5
50423717	Electricity for the MMMP Trades	0.5
50413501	Electrical Apprentice 1	3
		<b>5</b>
<b>Term 2</b>		
50423711	Print Reading for the MMMP Trades	1
50423726	Safety/Tools/Torque for the MMMP Trades	0.25
50423712	Fasteners for the MMMP Trades	0.5
50423723	Adhesives and Sealants for the MMMP Trades	0.25
50413502	Electrical Apprentice 2	3
		<b>5</b>
<b>Term 3</b>		
50423737	Equipment Installation for the MMP Trades	0.75
50423727	Concrete for the MMP Trades	0.25
50423714	Rigging for the MMP Trades	1
50413503	Electrical Apprentice 3	3
		<b>5</b>
<b>Term 4</b>		
50423738	Sheet Metal and Structural Steel for the MMMP Trades	0.75
50423716	Metallurgy for the MMMP Trades	0.5
50423715	Welding for the MMMP Trades	0.75
50413504	Electrical Apprentice 4	3
		<b>5</b>
<b>Term 5</b>		
50423735	Mechanical Power Transmission for the MMMP Trades	0.75
50423733	Belts, Sheaves, Pulleys, and Drives for the MMMP Trades	0.5
50423736	Conveyors for the MMMP Trades	0.25
50423734	Gears, Gearboxes, and Gear Assemblies for the MMMP Trades	0.5
50413505	Electrical Apprentice 5	3
		<b>5</b>
<b>Term 6</b>		
50423731	Couplings & Alignment for the MMMP Trades	0.5
50423730	Bearings for the MMMP Trades	0.75
50423725	Machine Lubrication for the MMMP Trades	0.25
50423724	Preventative and Predictive Maintenance for the MMMP Trades	0.5
50413506	Electrical Apprentice 6	3
		<b>5</b>
<b>Term 7</b>		
50423720	Pipefitting & Valves for the MMMP Trades	0.75
50423722	Packings, Seals, and Gaskets for the MMP Trades	0.5
50423732	Pumps for the MMMP Trades	0.75
50413507	Electrical Apprentice 7	3
		<b>5</b>
<b>Term 8</b>		
50423721	Hydraulics for the MMMP trades	1
50423718	Pneumatics and Compressed Air for the MMMP Trades	0.75
50423719	Vacuum Systems for the MMMP Trades	0.25
50413508	Electrical Apprentice 8	3
		<b>5</b>
		<b>TOTAL 40</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**ADHESIVES AND SEALANTS FOR MMMP TRADES...**compares adhesives and sealant types and applications. The apprentice skills will be developed related to applying adhesives and sealants to repair applications, interpreting SDS information, and handling hazardous materials. CONDITION: 504231 Millwright App or 504641 Maintenance Tech Apprentice requirements met

**BEARINGS FOR THE MMMP TRADES...**will examine bearing types and applications, and compare equipment bearings. Then learners will develop skills related to bearing inspection, selection, removal, mounting, lubrication and diagnosing bearing failures. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**BELTS, SHEAVES, PULLEYS AND DRIVES FOR MMMP...**compares different belt types and drive components. Apprentices will develop skills related to inspecting, troubleshooting, removing, selecting, and installing belt drive systems. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**CONCRETE FOR THE MMMP TRADES...**examines the principles of concrete as well as anchoring. CONDITION: 504231 Millwright Appr or 504641 Maint Tech Apprentice requirement met

**CONVEYORS FOR THE MMMP TRADES...**examines chain, belt, and other types of conveyors and related components. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**COUPLINGS AND ALIGNMENT FOR MMMP TRADES...**compares different coupling types and examines common misalignment problems. Apprentices will develop skills related to inspecting, troubleshooting, lubricating, and preparing couplings for removal and installation by using dial indicators and laser aligners. This course will also discuss types and principles of clutches and brakes. CONDITION: 504231 Millwright Appr or 504641 Maint Tech Apprentice requirements met

**ELECTRICAL APPRENTICE 1...**introduces the apprentice to the basic electrical concepts of structure of matter, electron theory, Ohm's law for series, parallel and series-parallel circuits; volt and current measurements; conductors and resistors; electrical power and energy; and the national electrical code. Also prepares the learner to select control devices by function and operation; illustrate electrical circuits using symbols, diagrams, and abbreviations; explain the operation of magnetic devices. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 2...**introduces the apprentice to magnetism, electricity generation, electromagnetism, application of electromagnetic devices, with continued study of the National Electrical Code. Also expands the learner's experience selecting electromagnetic control devices by function and operation; illustrate electrical circuits using symbols, diagrams, and abbreviations; explain the operation of magnetic devices. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 3...**introduces the apprentice to AC circuits, including mathematics for the circuits, vectors and vector analysis, sine wave characteristics, resistive AC current, inductance and inductive reactance, and RL circuits with continued study of the National Electrical Code. Also continues expanding the learner's experience selecting electromagnetic control devices by function and operation; illustrate electrical circuits using symbols, diagrams, and abbreviations; explain the operation of magnetic devices. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 4...**expands the apprentice's ability to work with complex AC circuits including capacitor types, capacitance, capacitive LCR reactance, series RC circuits, impedance, parallel RL and RC circuits, series and parallel LCR circuit resonance, power in relative circuits, and basic power correction. Continued study of the national electric code is included. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 5...**introduces the apprentice to transformers, DC and AC motor operation; split-phase motors, capacitor motors, shaped pole motors, wound rotor motors, universal motors, three-phase transformer systems and connections and three-phase motor operation. Continued study of the national electric code is included. Also 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 and Micrologix programmable logic controllers. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 6...**enhances the apprentice's ability to work with electrical symbols, line diagrams, manual AC contactors and motor starters, solenoid characteristics, magnetic starters and contactors, time delay and complex control circuits, reversing starters, solid state relays, and ladder logic. Also expands the learner's ability with programmable logic controllers. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 7...**introduces the apprentice to solid state fundamentals and the requirements for ground electrical systems in accordance with the national electrical code. Also expands the learner's ability upon programmable logic controllers with CompactLogix, RSLOGIX Studio 5000 software. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICAL APPRENTICE 8...**expands the apprentice's ability to work with programmable logic controllers with Compact Logix, RSLogix Studio 5000 software for programming these devices as well as hands-on training into their operation. Also prepares the learner to explain the function, construction and troubleshoot frequency drives as well as select and change parameters to meet operational characteristics for the drive application. CONDITION: 504131 Industrial Electrician Apprentice or 504641 Maintenance Technician Apprentice requirements met

**ELECTRICITY FOR THE MMMP TRADES...**examines basic electrical terms and theory. Apprentices will learn motor wiring, multimeter use as well as lockout tagout as it applies to electricity. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**EQUIPMENT INSTALLATION FOR THE MMMP TRADES...**will layout equipment installations, plan for moving equipment, and set and level equipment. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**FASTENERS FOR MMMP TRADES...**provides apprentices with a chance to compare fasteners and their uses, analyze fastener failures, and install mechanical fasteners. This course also covers drilling and tapping application. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**GEARS, GEARBOXES, GEAR ASSEMBLIES FOR MMMP...**compares gear types and applications. Apprentices will develop skills inspecting gear assemblies, troubleshooting gear problems, removing gears and components, and reassembling gear drive systems. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**HYDRAULICS FOR MMMP TRADES...**provides instruction to apprentices concerning many aspects of inspecting, servicing, and troubleshooting hydraulic systems and components. Apprentices will learn safety related issues and be taught proper safety procedures for working with hydraulic systems and components. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**MACHINE LUBRICATION FOR THE MMMP TRADES...**examines the types, principles and applications of machine lubricants and lubricating systems. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**MATH FOR MMMP TRADES...**examines math concepts as they relate to millwrights and machine maintenance. Apprentices will develop skills related to converting fractions to decimals; using both standard and metric systems; applying basic algebra to solving problems; computing area, volume, mass, and torque; using trigonometry; and using math charts, tables and references in support of common work processes. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**MECHANICAL POWER TRANSMISSION FOR MMMP TRADES...**examines drive transmission systems and their applications, including roller chains. Apprentices will develop skills inspecting power transmission systems and troubleshooting mechanical drive systems. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**METALLURGY FOR MMMP TRADES...**develops apprentice skills regarding metallurgical concepts. Apprentices will compare various metals and their applications, apply metallurgical techniques to work processes, test metals for hardness, and examine heat treating applications. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PACKING, SEALS, GASKETS FOR MMMP TRADES...**will examine packing, seals, and gaskets and compare materials and applications. The skills in layout, cutting, inspecting, removing, and installing these components will be developed. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PIPEFITTING AND VALVES FOR MMMP TRADES...**introduces apprentices to principles, application and types of pipe, materials, fittings, tubing, and valves, and develops skills related to layout, installation, and maintenance. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PNEUMATICS AND COMPRESSED AIR FOR MMMP TRADES...**provides instruction to apprentices concerning many aspects of inspecting, servicing, and troubleshooting pneumatic systems and components. Apprentices will learn safety related issues and be taught proper safety procedures for working with pneumatic systems and components. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PRECISION MEASUREMENTS FOR MMMP TRADES...**develops apprentice skills in precision measurement. Types of measuring instruments will be compared and then measuring skills using tapes, steel rules, micrometers, calipers, indicators, and gauges will be developed. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PREVENTIVE AND PREDICTIVE MAINTENANCE FOR MMMP TRADES...**examines both preventive and predictive maintenance concepts as they apply to millwright work processes and machine maintenance including vibration and lubrication analysis. Apprentices will develop skills related to assessing machine conditions and faults based on both preventative and predictive maintenance. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PRINT READING FOR MMMP TRADES...**explores reading prints commonly used by millwrights and machine maintenance workers. Course competencies include comparing types of prints, interpreting structural drawings, identifying parts from prints, and developing apprentice sketching drawing skills. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**PUMPS FOR THE MMMP TRADES...**compares different pump types including centrifugal, diaphragm, gear, vane and their applications. Apprentices will complete a field inspection of pumps and learn how to troubleshoot, remove, overhaul, and install and perform preventative maintenance on pumps. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**RIGGING FOR MMMP TRADES...**will compare types of rigging equipment and their uses; determine safe loads, rig and crib loads, and move a load with cranes and hoists, including signaling. Course will also cover usage and the safety of ladders and scaffolding. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**SAFETY, TOOLS AND TORQUE FOR MMMP TRADES...**examines safety as it relates to hand and power tools as well as theory and application of torque in the Maintenance/Millwright trade. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**SHEET METAL AND STRUCTURAL STEEL FOR MMMP TRADES...**compares types of sheet metal and tools used by the trade. Apprentices will develop skills related to fabricating sheet metal and structural steel, including layout, bending and forming, as well as erecting structural steel. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**VACUUM SYSTEMS FOR MMMP TRADES...**introduces principles of vacuum systems and interpreting vacuum system schematics. Apprentices will then develop skills related to installing, repairing, replacing and applying troubleshooting principles to vacuum systems and components. Course examines preventive maintenance techniques commonly used on the job. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**WELDING FOR MMMP TRADES...**compares common welding processes and develops apprentice skills related to welding, cutting, heating and using oxy-gas. Welding with arc, MIG and TIG is included, along with common cutting and joining techniques. CONDITION: 504231 Millwright Apprentice or 504641 Maintenance Technician Apprentice requirements met

**Program Number 10-631-4**  
**Associate Degree in Applied Science • Four Terms**

**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**

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**ADMISSION TO DO'S**

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

**PROGRAM TO DO'S**

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

**APPROXIMATE COSTS**

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

**FINANCIAL AID**

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

**CONTACT**

LTC Career Coach  
 920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10154104	Intro to IT	3
10150114	Networking I	3
10154122	PC Support	3
10801195	Written Communication	3
10804113	College Technical Math 1A	3
		<b>15</b>
<b>Term 2</b>		
10150173	Server Administration 1	3
10150176	Networking 2	3
10154124	Information Security Principles	3
10620138	Programmable Controllers - Allen Bradley	3
10809196	Introduction to Sociology OR 10809122	3
	Introduction to American Government OR 10809166 Introduction to Ethics	
		<b>15</b>
<b>Term 3</b>		
10150129	Virtualization	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
10150169	Network Design and Documentation	2
		<b>15</b>
<b>Term 4</b>		
10150164	Industrial Mobile Devices	3
10620110	AC Fundamentals	2
10620122	Industrial Wiring	2
10150167	Intro to Industrial IOT and ERP	2
10801196	Oral/Interpersonal Communication	3
10809198	Introduction to Psychology	3
		<b>15</b>
		<b>TOTAL 60</b>

***Curriculum  
 Modifications Pending  
 State Approval***

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 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, apply the elements and properties of basic measuring circuits, and describe transformer characteristics.

**COLLEGE TECHNICAL MATHEMATICS 1A**...prepares the student to solve linear, quadratic, and relational equations; graph; formula rearrangement; solve systems of equations; percent; proportions; and operations on polynomials. Emphasis will be on the application of skills to technical problems. PREREQUISITES: 10834110 Elementary Algebra w Apps or 10804107 College Mathematics or 31457318 Ind MtnC Trades Math or 31420320 Machine Tool Math or math placement assessment equivalent

**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.

**INDUSTRIAL 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. **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

**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. PREREQUISITE: 10154104 Intro to IT

**INTRO TO IT**...introduces student to IT field to basic concepts and terminology of a computer system hardware and software, Operating Systems (including Mac OS), and Networks; applied skills include: managing computer data files; protecting against computer viruses; creating simple web pages; producing electronic word documents, spreadsheets and presentations; examining techniques of systems analysis and design, programming languages and database systems.

**INTRODUCTION TO INDUSTRIAL IOT AND ERP**...introduces students to Industrial IOT (Internet of things) and ERP (Enterprise Resource Planning) and prepares students to maintain security in the IOT and ERP component in the manufacturing industry. Learners will gain an understanding of the basic ERP within a manufacturing environment.

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**NETWORK DESIGN AND 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: 10838105 Intro Reading and Study Skills or Reading placement assessment 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.

**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, RSLOGIX5000 software. This course is highly computer based. PREREQUISITE: 10620138 Prog Cntrl's/AB

**SERVER ADMINISTRATION 1**...hands-on course designed to introduce the learner to the installation and configuration of Windows Server servers. 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: 10154104 Intro to IT

**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. COREQUISITES: 10620140 Programmable Controls AB Advanced

**VIRTUALIZATION**...is a hands-on course designed to introduce the learner to the skills needed to install, configure, and manage a highly available and scalable virtual infrastructure. Objectives include: create, configure, migrate, manage, and monitor virtual machines and virtual appliances; manage user access to the virtual infrastructure; and configure and manage virtual network and storage systems. PREREQUISITE: 10154104 Introduction to IT

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

### ABOUT THE PROGRAM

Manufacturing Management is a unique associate degree program designed by local industry to meet the needs of the workplace through a combination of supply chain, quality, lean, leadership, and supervisory skills. Graduates of this program are prepared to provide leadership in manufacturing and service industries.

### PROGRAM OUTCOMES

- Display respect for individual differences and work cooperatively to build rapport and to achieve team goals.
- Develop and manage teams to enhance work productivity.
- Manage quality control.
- Implement better decision-making skills and utilize successful problem-solving processes.
- Perform successfully in the supervisory roles of planning, organizing, staffing, leading, and controlling.
- Integrate technology into the supply chain to improve profitability.
- Provide an uninterrupted flow of materials, supplies, and services required to operate the organization.
- Analyze and negotiate contracts with suppliers, manufacturers, and/or distributors.

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### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
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### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

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Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10103121	Excel - Level 1	1
10103191	Word - Level 1	1
10182131	Supply Chain Management	3
10196189	Teambuilding & Problem Solving	3
10809166	Intro to Ethics OR 10806112 Principles of Sustainability	3
10801195	Written Communication OR 10801136 English Composition 1	3
		<b>14</b>
<b>Term 2</b>		
10804123	Math with Business Applications	3
10196107	Principles of Management	3
10801196	Oral/Interpersonal Communications OR 10801198 Speech (3 cr)	3
10196134	Legal Issues for Supervisors	3
10623118	Lean Manufacturing Overview	3
		<b>15</b>
<b>Term 3</b>		
10101155	Accounting for Professionals	3
10105128	Personal Branding	2
10449114	Safety in the Workplace	3
10196188	Project Management	3
10623101	Quality Concepts	3
10623110	Lean Six Sigma - Measure and Analyze	4
		<b>18</b>
<b>Term 4</b>		
10196129	Portfolio Assessment - Manufacturing Management	1
10809198	Introduction to Psychology OR 10809188 Developmental Psychology (3 cr)	3
10623123	Blueprint Reading and Metrology	3
10623193	ISO 9001 Internal Auditor OR 10623195 ISO 9001 Concepts (3 cr)	3
10809195	Economics	3
		<b>13</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**ACCOUNTING FOR PROFESSIONALS...**is the study of the information that can be interpreted from financial statements. Students analyze financial statements and apply managerial accounting concepts in an accelerated format. PREREQUISITE: 10804123 Math w Business Apps or CONDITION: 101101 Paralegal program requirements met

**BLUEPRINT READING AND METROLOGY...**provides knowledge and skill in the understanding of quality measurement, quality measurement devices and their proper application. Quality measurement topics include precision, accuracy, control of variation, gage R/R, calibration techniques and blueprint/specification reading. The quality measurement devices portion of this course provides hands-on use of common measurement and test equipment.

**ECONOMICS...**provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**EXCEL - LEVEL 1...**introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**INTRODUCTION TO ETHICS: THEORY AND APPLICATION...**provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and/or professional standards of behavior, and apply a systematic decision-making process to these situations. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**ISO 9001 INTERNAL AUDITOR...**is designed to introduce participants to the current QS/ISO 9001 and ISO 19011 standards. The course is structured to provide a detailed review of the standards, how to document procedures, and how to perform audits. Students will practice preparation for and conducting audits in a local business. Successful completion of this course qualifies the student to receive the ISO 9001 Internal Auditor certificate (19-623-8)

**LEAN MANUFACTURING OVERVIEW...**expands the learner's ability to develop skills to prioritize and sequence work, execute work plans, implement controls, and create and analyze performance evaluations. It allows the student to explore the execution of quality initiatives and continuous improvement plans in addition to the control and handling of inventories.

**LEAN SIX SIGMA - MEASURE AND ANALYZE...**provides the student with skills and tools to collect and analyze data to solve problems and improve processes within an organization. Various techniques for process mapping are explored including SIPOC, FMEA, VSM, standard work sheets, and spaghetti diagrams. Statistical tools are explored including probability, confidence intervals, measurement systems analysis, hypothesis testing, and TAKT time analysis to create and implement a data collection plan. MiniTab introduction is included.

**LEGAL ISSUES FOR SUPERVISORS...**applies the skills and tools necessary for a supervisor to effectively function in today's legal work environment. Learners will demonstrate the application of legal practices in both union and nonunion environments, analysis of the impact of U.S. employment laws, the impact of the global economy, the appeal process, reacting to legal charges, documenting the hiring/firing process, dealing with harassment issues, privacy issues, and summarizing legal issues facing contemporary supervisors.

**MATH WITH BUSINESS APPLICATIONS...**covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PERSONAL BRANDING...**focuses on the importance of developing a strong brand identity for yourself as a professional. As a prospective employee, you are constantly selling yourself from how you talk, walk, dress, your facial expressions, and your body language; people are always forming impressions of you. In this course, you will develop a professional resume, cover letter, practice interview skills, and learn the role of social media in career development.

**PORTFOLIO ASSESSMENT-MANUFACTURING MANAGEMENT...**prepares the student to identify what they have learned throughout the program, write career goals, re-examine their resume, research and collect project samples of their achievements, and analyze their achievements within the college core abilities. PREREQUISITE: 10105128 Personal Branding

**PRINCIPLES OF MANAGEMENT...**will enable students to develop short and long range plans to effectively accomplish organizational goals. Through the use of terminology, exercises, and case studies, students will be able to give a critical appraisal of real life situations involving organizing, staffing, and motivating others. The student will also learn tools to aid in problem solving, value in diversity, and coping with change.

**PROJECT MANAGEMENT...**introduces the learner to explore the relationship of existing and emerging processes and technologies to manufacturing strategy and supply chain-related functions. This course addresses three main topics: aligning resources with the strategic plan, configuring and integrating operating processes to support the strategic plan, and implementing change.

**QUALITY CONCEPTS...**provides an overview of quality systems, methods and analysis using Minitab software. Basic quality philosophies such as Deming's principles, continuous improvement, quality costs, supplier relations and inspection theory will be presented. The components of a basic quality system compatible with ISO 9000 and Six Sigma will be explored. Minitab software will be taught and utilized to collect and analyze data. Techniques such as pareto, trend analysis, histograms, cause and effect diagrams and corrective/preventive action techniques will be applied to the data in order to address problems and improve processes.

**SAFETY IN THE WORKPLACE...**applies the skills and tools necessary to provide a safe and secure work environment. Each learner will demonstrate the application of safety awareness, federal/state/local compliance, incident investigation and documentation, human relations techniques, safety orientation, inspections, and risk analysis, issues of workplace violence, substance abuse, and health hazards, first aid and CPR, fire and electrical safety, emergency preparedness, and liaison with external agencies.

**SUPPLY CHAIN MANAGEMENT...**has been developed to provide a basic understanding of the planning and control of materials into, through, and out of organizations. In addition, those who want to become certified by APICS need a fundamentals course to learn about the material planning and control system. This course will provide a basis for further study leading to certification.

**TEAMBUILDING AND PROBLEM SOLVING...**applies the skills and tools necessary to facilitate problem solving in a team environment. Each learner will demonstrate the application of the benefits and challenges of group work, necessary roles in a team, stages of team development, different approaches to problem solving, consensus, a systematic process of problem definition, data acquisition, analysis, developing alternative solutions, solution implementation, and evaluation.

**WORD - LEVEL 1...**introduces the student to word processing features such as creating, saving, editing, navigating, and formatting the content of multi-page documents.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 10-104-3 Associate Degree in Applied Science • Four Terms

### ABOUT THE PROGRAM

Whether you are online, at a store, or browsing Facebook, you've experienced marketing. Then imagine yourself as a marketing professional in a digital age. Your personality is geared toward developing relationships with the super-informed consumer and keeping up with the latest trends in marketing. You're curious about what drives consumers to purchase either digitally or traditionally. Marketing is a program for students interested in selling, social media, retailing promotion, and customer services. If you like generating fresh ideas, and enjoy variety and change, a career in marketing may be a perfect fit for you.

### PROGRAM OUTCOMES

- Develop strategies to anticipate and satisfy market needs.
- Prepare an integrated marketing communication plan.
- Evaluate business information through the market research process.
- Demonstrate selling strategies for products, services, and/or ideas to create and maintain relationships.
- Manage Customer Relationship Management (CRM) functions to anticipate market wants and needs.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

This program is also offered in an online delivery format. Contact an advisor for details.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10104102	Marketing, Principles of	3
10103191	Word - Level 1	1
10103121	Excel - Level 1	1
10801198	Speech OR 10801196 Oral/Interpersonal Communication	3
10804123	Math with Business Applications	3
10809198	Introduction to Psychology	3
		<b>14</b>
<b>Term 2</b>		
10104104	Selling Strategies	3
10104122	Marketing Strategies and Planning	3
10104124	Research and Web Analytics	3
10106138	Web Technology	2
10104136	Retail Marketing	3
10801195	Written Communication OR 10801136 English Composition 1	3
		<b>17</b>
<b>Term 3</b>		
10104125	Promotion in the Social Media Campaign	3
10152106	Integrated Web Concepts	4
10105128	Personal Branding	2
10104172	Marketing Analysis	3
10809195	Economics	3
		<b>15</b>
<b>Term 4</b>		
10104105	B2B Sales and CRM	3
10104134	Direct Marketing, PR and Media	3
10104126	Internship-Marketing	1
10809196	Introduction to Sociology OR 10809172 Introduction to Diversity Studies	3
10196107	Principles of Management	3
10104174	Marketing Field Study	1
		<b>14</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**B2B SALES AND CRM**...enhances the student's ability to create business to business selling strategies and understand the factors affecting the sales funnel. Students will develop an understanding of CRM, account management, sales leadership and motivation, and sustaining the brand in the new era of Sales 2.0. COREQUISITE: 10104104 Selling Strategies

**DIRECT MARKETING, PR AND MEDIA**...provides the student with an overview of direct marketing, public relations, and social media as it relates to the consumer. Various channels of direct marketing will be investigated including social media, mobile marketing, email marketing, and traditional direct marketing strategies.

**ECONOMICS**...provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**EXCEL - LEVEL 1**...introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**INTEGRATED WEB CONCEPTS**...introduces student to the three major components of the Web -- design, development, and marketing. A common course among Graphic and Web Design, Web and Software Developer, and Marketing, students from each program will be responsible for working in teams and to coordinate projects and present their industry to students from the other programs. PREREQ 10104102 Prin of Mktg and 101043 Mktg req met or 10152187 Web Dev 3 and 101527 IT Web and Soft Dev req met or 10201110 InDesign and 102012 Graphic & Web Design req met

**INTERNSHIP - MARKETING**...requires students to complete 72 hours(1 credit) of performing work in a business/industrial service setting related to their program outcomes. In addition, students will develop an academic portfolio which reflects upon the program outcomes, core abilities, career goal, educational goal, and course summary of learning. Students will meet with their program instructor to explain their portfolio and complete the technical skills attainment documentation.

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**MARKETING ANALYSIS**...expands the student's ability to analyze the role of marketing strategy in event, political, sports, actor and music marketing. This marketing course focuses on the development of marketing solutions for real-world businesses. This course focuses on the development of various promotional material used in marketing.. PREREQUISITE: 10104102 Principles of Marketing

**MARKETING FIELD STUDY**...provides the student the opportunity to participate in business tours and listen to guest speaker presentations. Enforcement of program outcomes and competencies will assist the student to better understand current trends and strategies in marketing.

**MARKETING STRATEGIES AND PLANNING**...introduces the student to marketing strategies that support the product/service mix. Students will use critical thinking and analytical skills to develop positioning, branding, differentiation, and relationship marketing strategies to reach the target audience. The student will also be responsible for the development of a marketing plan. PREREQUISITE: 10804123 Math w/ Business Apps

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**PERSONAL BRANDING**...focuses on the importance of developing a strong brand identity for yourself as a professional. As a prospective employee, you are constantly selling yourself from how you talk, walk, dress, your facial expressions, and your body language; people are always forming impressions of you. In this course, you will develop a professional resume, cover letter, practice interview skills, and learn the role of social media in career development.

**PRINCIPLES OF MANAGEMENT**...will enable students to develop short and long range plans to effectively accomplish organizational goals. Through the use of terminology, exercises, and case studies, students will be able to give a critical appraisal of real life situations involving organizing, staffing, and motivating others. The student will also learn tools to aid in problem solving, value in diversity, and coping with change.

**PROMOTION IN THE SOCIAL MEDIA CAMPAIGN**...provides the student with the understanding of the promotional mix in integrated marketing communications. Students will also explore the role of social media in branding and positioning products. COREQUISITE: 10104102 Principles of Marketing

**RESEARCH AND WEB ANALYTICS**...provides the student with the ability to distinguish between quantitative and qualitative research techniques, primary and secondary data, and the marketing research process. In addition students will learn how web analytics and mobile technology have affected the marketing research process.

**RETAIL MARKETING**...provides the student with current developments in retail marketing. Students will learn about types of retailers, customer service, distribution and inventory control, and online and traditional retailing methods.

**SELLING STRATEGIES**...prepares the student to understand the business to consumer selling process, the technological advancement in selling, and the importance of customer relationship management.

**SPEECH**...explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and other essential elements of speaking successfully, including the listening process, form the basis of the course. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**WEB TECHNOLOGIES**...provides a basic understanding of the Web as well as the tools used to create Web pages, blogs, and other features. Reviews social and business Web tools and components.

**WORD - LEVEL 1**...introduces the student to word processing features such as creating, saving, editing, navigating, and formatting the content of multi-page documents.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 31-606-1 Technical Diploma • Three Terms

### ABOUT THE PROGRAM

Students work on acquiring high-level drafting skills and utilize computer-aided drafting (CAD) software. They learn to construct and revise engineering working drawings.

### PROGRAM OUTCOMES

- Assist engineers in the design process.
- Prepare detail and assembly drawings for documentation of mechanical parts and machines using CAD (Computer-Aided Design) software using ASME Y14.5M-2009 Standard.
- Function effectively on both self-directed and team-oriented projects.
- Ability to grasp spatial relationships.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

Program can also be completed by attending evenings.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10606101	Basic Mechanical Drafting	2
10606103	Intermediate Mechanical Drafting (AutoCAD)	2
10606105	Introduction to Working Drawings (AutoCAD)	3
10606160	Manufacturing Processes & Applications	3
		<b>10</b>
<b>Term 2</b>		
10606106	Geometric Dimensioning and Tolerancing	3
10606140	Parametric Drafting Using Solidworks	3
10606196	Working Drawings Using SolidWorks	3
10809196	Introduction to Sociology OR 10809198 Introduction to Psychology	3
		<b>12</b>
<b>Term 3</b>		
10606191	Parametric Drafting Using Creo	2
10606193	Working Drawings Using Creo	2
10801196	Oral/Interpersonal Communication	3
		<b>7</b>
		<b>TOTAL 29</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**BASIC MECHANICAL DRAFTING USING AUTOCAD**...provides the learner with the skills to utilize AutoCAD's drawing editor, viewing commands; apply coordinate entry methods, AutoCAD file commands; utilize draw commands, modify commands; create and edit text, prints & plots; apply geometric construction to solve a drawing problem; utilize selection sets, duplicating modify commands, layers & objects properties, blocks; apply principles of orthographic and multi view projection.

**GEOMETRIC DIMENSIONING AND TOLERANCING**...provides the learner with the skills to apply and interpret geometric tolerancing (ASME 14.5M-2009) to part drawings, including form, profile, orientation, runout, and positional tolerances.

**INTERMEDIATE MECHANICAL DRAFTING (AUTOCAD)**...provides the learner with the skills to create two dimensional section views, create two-dimensional auxiliary views, create prints/plots from paper space, modify and set dimension attributes, apply dimensioning symbols, and apply ASME Y14.5M standards for dimensioning and tolerancing. COREQUISITE: 10606101 Basic Mechanical Drafting

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**INTRODUCTION TO WORKING DRAWINGS (AUTOCAD)**...provides the learner with the skill to create solid primitives, create a solid model from a two-dimensional closed profile, use Boolean operations, use modify options to existing solid models, create a detail drawing from a solid model and create assembly drawings from solid models. COREQUISITE: 10606103 Intermediate Mechanical Drafting (AutoCAD)

**MANUFACTURING PROCESSES AND APPLICATIONS**...Introduces the learner to machining processes including, milling, turning, and drilling. The learner will also learn how to properly use and read dial and digital micrometers; dial, digital and vernier calipers; as well as height gages and angle measurement devices. In addition, the student will also explore metallurgy, computer-age machining and methods in advanced manufacturing technology

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PARAMETRIC DRAFTING USING CREO**...provides the learner with the skills to use Creo user interface, sketching tools; create the following features: extrusions, revolves, holes, fillets and chamfers, ribs, sweeps, shells, blends; setup datum references, edit sketches and features and create detail drawings from Creo models. PREREQUISITES: 10606140 Drafting Parametrics-SolidWorks or 10606196 Working Drawings Using SolidWorks

**PARAMETRIC DRAFTING USING SOLIDWORKS**...provides the learner with the skills to use SolidWorks user interface, sketching tools; create the following features: extrusions, revolves, cuts, holes, fillets and chamfers, ribs, sweeps, shells, lofts; setup reference geometry, edit sketches and features and create detail drawings from SolidWorks models. COREQUISITE: 10606105 Introduction to Working Drawings (AutoCAD)

**WORKING DRAWINGS USING CREO**...provides the learner with the skills to create different types of assemblies using Creo, insert standard components from vendor websites, apply classes of fits to mating parts, determine interference and clearance between parts, specify annotation notes to drawings, insert a Bill-of-Material into an assembly drawing, and apply reverse engineering. COREQUISITE: 10606191 or 10606195 Parametric Drafting Using Creo

**WORKING DRAWINGS USING SOLIDWORKS**...will provide the learner with the skills to create different types of assemblies using SolidWorks, insert standard components from toolbox and vendor websites, apply classes of fits to mating parts, determine interference and clearance between parts, specify annotation notes to drawings, insert a Bill-of-Material into an assembly drawing, and apply reverse engineering. COREQUISITE: 10606140 Drafting Parametric Using Solidworks

**Program Number 10-606-1**  
**Associate Degree in Applied Science • Four Terms**

### ABOUT THE PROGRAM

Mechanical design technicians, under the direction of engineering staff members, help develop and test products, calculate strength and cost of materials, make drawings to scale, and work on prototypes and product improvement. Students work on acquiring high-level drafting skills and utilize a variety of Computer-Aided Drafting (CAD) software. They learn to construct and revise engineering working drawings and tooling drawings; research and apply information for parts and materials; and specify appropriate tolerances, materials, and other engineering data. Mechanical designers work on teams that focus on continuous improvement, Six Sigma initiatives, and lean manufacturing efforts.

### PROGRAM OUTCOMES

- Prepare detail and assembly drawings for documentation of mechanical components and products.
- Create CAD geometry, parts and assemblies.
- Design mechanical components and products.
- Analyze mechanical engineering problems.
- Select purchased parts.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

This program can also be completed by attending evenings.

### CONTACT

LTC Career Coach  
 920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10606101	Basic Mechanical Drafting	2
10606103	Intermediate Mechanical Drafting (AutoCAD)	2
10606105	Introduction to Working Drawings (AutoCAD)	3
10606160	Manufacturing Processes & Applications	3
10804113	College Technical Math 1A	3
10801196	Oral/Interpersonal Communication	3
		<b>16</b>
<b>Term 2</b>		
10606106	Geometric Dimensioning and Tolerancing	3
10606134	Statics	4
10606140	Drafting Parametric Using Solidworks	3
10606196	Working Drawings Using SolidWorks	3
10806154	General Physics 1	4
		<b>17</b>
<b>Term 3</b>		
10606117	Machine Elements	3
10606118	Kinematics	3
10606130	Strength of Materials	4
10606191	Parametric Drafting Using Creo	2
10606193	Working Drawings Using Creo	2
10620169	Robotic Maintenance	1
10444104	HSM for Solidworks	1
		<b>16</b>
<b>Term 4</b>		
10606112	Tool Design Basic	3
10606125	Design Problems	3
10606189	Intro to Current Manufacturing Trends	2
10801195	Written Communication	3
10809198	Introduction to Psychology	3
10809196	Introduction to Sociology OR 10809195 Economics	3
		<b>17</b>
		<b>TOTAL 66</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**BASIC MECHANICAL DRAFTING USING AUTOCAD**...provides the learner with the skills to utilize AutoCAD's drawing editor, viewing commands; apply coordinate entry methods, AutoCAD file commands; utilize draw commands, modify commands; create and edit text, prints & plots; apply geometric construction to solve a drawing problem; utilize selection sets, duplicating modify commands, layers & objects properties, blocks; apply principles of orthographic and multi view projection.

**COLLEGE TECHNICAL MATHEMATICS 1A**...prepares the student to solve linear, quadratic, and relational equations; graph; formula rearrangement; solve systems of equations; percent; proportions; and operations on polynomials. Emphasis will be on the application of skills to technical problems. PREREQUISITES: 10834110 Elementary Algebra w Apps or 10804107 College Mathematics or 31457318 Ind Mtnc Trades Math or 31420320 Machine Tool Math or math placement assessment equivalent

**DESIGN PROBLEMS**...prepares the learner to use knowledge of machine elements to design a mechanical system based on specifications given in class; prepare a project time line; create all documentation for manufacturing, including detail and assembly drawings; perform all design calculations. PREREQUISITE: 10606117 Machine Elements; 10606118 Kinematics; 10606196 Working Drawings Using SolidWorks or 10606160 Manufacturing Processes & Applications

**GENERAL PHYSICS 1**...presents the applications and theory of basic physics principles. This course emphasizes problem-solving, laboratory investigation, and applications. Topics include unit conversions and analysis, vectors, translational and rotational kinematics, translational and rotational dynamics, heat and temperature, and harmonic motion and waves. PREREQUISITE: 10804113 College Tech Math 1A, 10804115 College Tech Math 1, or 10804118 Intermediate Algebra, or Math placement assessment equivalent.

**GEOMETRIC DIMENSIONING AND TOLERANCING**...provides the learner with the skills to apply and interpret geometric tolerancing (ASME 14.5M-2009) to part drawings, including form, profile, orientation, runout, and positional tolerances.

**HSM FOR SOLIDWORKS**...is a CAD software that is often used for mechanical design. HSM for Solidworks is an add-on to Solidworks for CAM processes, creating G&M code programs from the solid model. In this course you will explore the Solidworks interface and create face milling, end milling, and hole-producing tool paths for CNC machining centers. You will also be creating turning, boring, threading, and hole-producing tool paths for CNC turning centers.

**INTERMEDIATE MECHANICAL DRAFTING (AUTOCAD)**...provides the learner with the skills to create two dimensional section views, create two-dimensional auxiliary views, create prints/plots from paper space, modify and set dimension attributes, apply dimensioning symbols, and apply ASME Y14.5M standards for dimensioning and tolerancing. COREQUISITE: 10606101 Basic Mechanical Drafting

**INTRO TO CURRENT MANUFACTURING TRENDS**...introduces the learner to the theories and concepts of Statistical Process Control, Six Sigma and Lean Manufacturing. PREREQUISITES: 10804115 College Tech Math or 10804113 College Tech Math 1A

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**INTRODUCTION TO WORKING DRAWINGS (AUTOCAD)**...provides the learner with the skill to create solid primitives, create a solid model from a two-dimensional closed profile, use Boolean operations, use modify options to existing solid models, create a detail drawing from a solid model and create assembly drawings from solid models. COREQUISITE: 10606103 Intermediate Mechanical Drafting (AutoCAD)

**KINEMATICS**...provides the student with the skills necessary to determine the motions required to accomplish the objective of a machine, calculate velocities and design gears. PREREQUISITE: 10804115 College Technical Math 1 or 10804113 College Technical Math 1A

**MACHINE ELEMENTS**...introduces the student to the various components found on machinery, including shafts, bearings, power transmissions, gears, and the selection of standard machine elements from manufacturers' catalogs, and the use of spreadsheet solutions. COREQUISITE: 10606130 Strength of Materials

**MANUFACTURING PROCESSES AND APPLICATIONS**...Introduces the learner to machining processes including, milling, turning, and drilling. The learner will also learn how to properly use and read dial and digital micrometers; dial, digital and vernier calipers; as well as height gages and angle measurement devices. In addition, the student will also explore metallurgy, computer-age machining and methods in advanced manufacturing technology.

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PARAMETRIC DRAFTING USING CREO**...provides the learner with the skills to use Creo user interface, sketching tools; create the following features: extrusions, revolves, holes, fillets and chamfers, ribs, sweeps, shells, blends; setup datum references, edit sketches and features and create detail drawings from Creo models. PREREQUISITES: 10606140 Drafting Parametrics-SolidWorks or 10606196 Working Drawings Using SolidWorks

**PARAMETRIC DRAFTING USING SOLIDWORKS**...provides the learner with the skills to use SolidWorks user interface, sketching tools; create the following features: extrusions, revolves, cuts, holes, fillets and chamfers, ribs, sweeps, shells, lofts; setup reference geometry, edit sketches and features and create detail drawings from SolidWorks models. COREQUISITE: 10606105 Introduction to Working Drawings (AutoCAD)

**ROBOTIC MECHANICAL MAINTENANCE**...introduces the students to the robot teach pendant and robot jogging. Students will be taught to replace servo motors, recalibrate the robot and back up robot software and programs.

**STATICS**...covers the study of forces on and in structures that are at rest. Forces, vectors, resultants, moments, couples, equilibrium, free-body diagrams, friction, centroids, and centers of gravity, and moments of inertia are covered. PREREQUISITE: 10804115 College Technical Math 1 or 10804113 College Technical Math 1A

**STRENGTH OF MATERIALS**...provides the learner with the skills to identify and calculate centers of gravity, moments of inertia, and stresses induced in force-bearing elements for the purpose of sizing the material in that element, specifically studying shear, axial, bending, torsional, and combined stresses. PREREQUISITE: 10606134 Statics

**TOOL DESIGN BASIC**...provides the basic principles needed to design the tools commonly used in manufacturing. Principal topics include drill jigs and milling fixtures. The classroom work is done on CAD, and students are encouraged to research and select standard components from tooling company catalogs. PREREQUISITE: 10606196 Working Drawings Using SolidWorks or 10606160 Manufacturing Processes & Applications

**WORKING DRAWINGS USING CREO**...provides the learner with the skills to create different types of assemblies using Creo, insert standard components from vendor websites, apply classes of fits to mating parts, determine interference and clearance between parts, specify annotation notes to drawings, insert a Bill-of-Material into an assembly drawing, and apply reverse engineering. COREQUISITE: 10606191 or 10606195 Parametric Drafting Using Creo

**WORKING DRAWINGS USING SOLIDWORKS**...will provide the learner with the skills to create different types of assemblies using SolidWorks, insert standard components from toolbox and vendor websites, apply classes of fits to mating parts, determine interference and clearance between parts, specify annotation notes to drawings, insert a Bill-of-Material into an assembly drawing, and apply reverse engineering. COREQUISITE: 10606140 Drafting Parametric Using Solidworks

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

**Program Number 50-620-1  
5-Year Contract**

**Work Hours (including related instruction): 10,000  
Related Instruction: 864 hours • Night School: 8 hours**

### ABOUT APPRENTICESHIP

Apprenticeships are employer-sponsored training programs. You must have a contract before being invited to school. A special application process is used for these programs. Please contact the Apprenticeship Office for the proper forms. Apprenticeship means you earn while you learn. If you want a career in a skilled trade, apprenticeship is the best way to get there. You'll combine on-the-job training with on-campus learning—you'll have the best of both worlds when it comes to learning the skills you need to get ahead. And even better, you'll earn a paycheck while you learn those skills.

### ABOUT THE CAREER

This occupation requires combined knowledge of electrical, electronic and mechanical systems used in industrial plants. Workers frequently support automation and robotic technologies. Work processes include installing, repairing, and maintaining equipment/devices. Troubleshooting systems involved in manufacturing and process control are critical requirements for workers in these occupations. Workers typically operate and debug industrial computer and communication systems including PLC's, PC's, and HMI technologies. Workers machine metal and other materials; fabricate parts and weld/join components. Documenting work performed, maintaining accurate records, and working in a collaborative environment are critical interpersonal skills. Employees in some, but not all plants, support facilities, utilities and grounds.

### INDUSTRIAL APPRENTICE APPLICATION REQUIREMENTS

- Determined by employer
- Wisconsin Apprentice Contract

### PROGRAM OUTCOMES

- Perform work safely.
- Install mechanical equipment.
- Install electrical equipment.
- Maintain mechanical equipment.
- Troubleshoot mechatronic systems.
- Operate machine shop tools and machines.
- Weld and fabricate parts.
- Maintain automation systems.
- Modify devices and systems.
- Maintain documents and records.
- Local options and work processes.

### APPROXIMATE COSTS

Contact the LTC Apprenticeship Office or visit [www.gotolc.edu/apprenticeship](http://www.gotolc.edu/apprenticeship) for detailed information.

### SPECIAL NOTE

You must have a sponsoring employer and contract before attending school.

### CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotolc.edu/future-students/transfer](http://gotolc.edu/future-students/transfer).

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
50620701	Trades Math Review for Mechatronics	1
50620703	DC Electricity for Mechatronics	1
50620704	AC Electricity for Mechatronics	1
50620706	Electrical Codes for Mechatronics	1
		<b>4</b>
<b>Term 2</b>		
50620707	Welding Basics for Mechatronics	1
50620702	Mechatronics Principles	2
50620710	Power Transmission Systems for Mechatronics	1
		<b>4</b>
<b>Term 3</b>		
50620708	Fluid Power Systems for Mechatronics	2
50620705	Motors & Motor Control for Mechatronics	2
		<b>4</b>
<b>Term 4</b>		
50620711	Machining Concepts for Mechatronics	2
50620712	Introduction to PLC's	2
		<b>4</b>
<b>Term 5</b>		
50620714	HMI Technologies & PLC Applications for Mechatronics	2
50620715	Introduction to Robotic Systems for Mechatronics	2
		<b>4</b>
<b>Term 6</b>		
50620716	Introduction to Robotic Integration	3
50620709	Servos and Drives for Mechatronics	1
		<b>4</b>
		<b>TOTAL 24</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**AC ELECTRICITY FOR MECHATRONICS**...is designed to introduce the mechatronic technician apprentice to the basic concepts of alternating current. Emphasis is placed on circuit analysis and the problem-solving skills necessary for the maintenance of mechatronic systems and manufacturing equipment. CONDITION: 506201 Mechatronics Technician Apprentice program requirements met

**DC ELECTRICITY FOR MECHATRONICS**...introduces the fundamental concepts and computations related to DC electricity. Emphasis is placed on circuit analysis and the problem-solving skills necessary for the maintenance of mechatronic systems and manufacturing equipment. Competencies related to metering and safe use of measuring devices are included. CONDITION: 506201 Mechatronics Technician Apprentice program requirements met

**ELECTRICAL CODES FOR MECHATRONICS**...examines the National Electric Code and applies information to work practices involving mechatronic systems. Terminology needed to communicate and coordinate electrical work with other trades will be explored.

**FLUID POWER SYSTEMS FOR MECHATRONICS**...include inspecting, testing, servicing, and troubleshooting hydraulic, pneumatic, compressed air, and vacuum systems. Apprentices will review safety procedures for various common maintenance tasks.

**HMI TECHNOLOGIES AND PLC APPS FOR MECHATRONICS**...examines human machine interface devices, software and technologies for mechatronic systems. Apprentices will work in a lab/shop/training center setting to create touchscreens, set-up networks, and configure systems.

**INTRO TO PROGRAMMABLE LOGIC CONTROLLERS**...is designed to teach the fundamentals of programmable logic controller and its programming software. The course will introduce terminology, concepts, schematic reading and basic programming. Technologies and PLC use in manufacturing and mechatronic systems will be emphasized.

**INTRO TO ROBOTIC SYSTEMS FOR MECHATRONICS**...introduces the apprentice to the robot teach pendant and methods of robot jogging. Learners will be taught to replace servo motors, re-master the robot, and back up robot software and programs. Maintenance, servicing and safety will be emphasized. Cable management systems will be examined.

**INTRODUCTION TO ROBOTIC INTEGRATION**...explores offsets, vision systems and system integration using robotic simulation and capstone project. The project will tie everything learned during their apprenticeship together – safety, machine integration, vision systems, CNC, machine applications for robotics, troubleshooting, and work documentation.

**MACHINING CONCEPTS FOR MECHATRONICS**...introduces cutting, drilling, lathes, and milling operations to apprentices in mechatronics. Course topics also include work holding devices, measuring tools and measurement, safety, machine guards, tooling, print reading, and speeds & feeds. Math skills will be applied to machining related work practices.

**MECHATRONIC PRINCIPLES**...will examine both introductory mechanical & electrical concepts as a foundation for future coursework and on-the-job learning. Troubleshooting principles associated with mechatronics will also be introduced. Apprentices will explore safety, rigging, measurement, mechanical principles, electrical principles, mechanisms, metallurgy, and troubleshooting.

**MOTOR AND MOTOR CONTROL FOR MECHATRONICS**...examines the fundamentals of electric motors and motor control. Apprentices will learn to recognize and draw basic symbols, use the language of motor control, and apply these in industry formats. Apprentices will also learn to draw and read ladder and wiring diagrams, and be introduced to the logic used in motor control. Learners will apply this logic to correctly interpret, install, service, and wire control circuits. Wiring of panels, machines, and systems will also be examined.

**POWER TRANSMISSION SYSTEMS FOR MECHATRONICS**...includes examining mechanical power transmission systems and components. Belts, chain drives, gears & gear drives, couplings, and clutches & brakes will be examined. Apprentices will develop skills inspecting, installing, and maintaining power transmission systems and troubleshooting failures. Apprentices will also learn about safety, documenting work performed, communicating the status of work, and working collaboratively.

**SERVOS AND DRIVES FOR MECHATRONICS**...introduces concepts, terminology, and safety associated with drives and servos used in industry and manufacturing. Course is designed to give the apprentice the knowledge required to program, service and maintain variable frequency drives and related equipment. Course learning outcomes include setting up and programming drives in a lab, shop or training center setting.

**TRADE MATH REVIEW FOR MECHATRONICS**...includes building skills working with fractions, decimals, formulas and ratios used by the trade. Measurement, tolerances and interpreting trade related information will help apply math concepts to industrial and manufacturing work processes. Basic algebra, geometry and trigonometry will be applied to job duties and tasks. Converting between US and metric units is also included. Provides a foundation for mechanical and electrical problem-solving involving math. CONDITION: 506201 Mechatronics Technician Apprentice program requirements met

**WELDING BASICS FOR MECHATRONICS**...compares common welding processes and develops apprentice skills related to welding, cutting, heating and using oxy-gas. Welding with arc and MIG will help develop competency working with metal. Additional course learning outcomes may include common cutting and joining techniques associated with applicable trade work processes.

## Program Number 31-509-1 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

The Medical Assistant program prepares individuals to assist physicians in their offices or other medical settings. Before you see your physician, during an office visit, it is very likely that you interact with a Medical Assistant first. Medical Assistants serve an important role on the healthcare team by providing a wide variety of clinical, administrative, and laboratory skills. The Medical Assistant is responsible for medical and surgical asepsis, taking vital signs, assisting the physician with examinations and surgery, administering EKGs and administering medications. The business/administrative duties include patient reception, appointment making, record keeping, filing, bookkeeping, insurance handling, typing medical correspondence and transcription and electronic medical record applications. Laboratory functions include specimen collection, performance of basic laboratory tests and microscopic work. If you want a career that places you at the heart of healthcare, medical assisting may be just what you are looking for.

### PROGRAM OUTCOMES

- Perform medical office administrative functions.
- Provide patient care in accordance with regulations, policies, laws, and patient rights.
- Perform medical laboratory procedures.
- Demonstrate professionalism in a health care setting.
- Demonstrate safety and emergency practices in a health care setting.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete health requirements.
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

- The Medical Assistant program is accredited by the Accrediting Bureau of Health Education Schools (ABHES).
- CPR and First Aid certification must be current throughout the entire Practicum.
- Students will need to submit proof of Nursing Assistant competency prior to taking Medical Assistant Clinical Procedures 1.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10501101	Medical Terminology	3
10501104	Culture of Healthcare	2
10501107	Digital Literacy for Healthcare	2
31509301	Medical Assistant Administrative Procedures*	2
31509302	Human Body in Health & Disease	3
31509303	Medical Assistant Laboratory Procedures 1	2
31509304	Medical Assistant Clinical Procedures 1	4
		<b>18</b>
<b>Term 2</b>		
10501102	Health Insurance and Reimbursement OR 31509307 Medical Office Insurance & Finance (2 cr)	3
31509305	Medical Assistant Laboratory Procedures 2	2
31509306	Medical Assistant Clinical Procedures 2	3
31501308	Pharmacology for Allied Health	2
31509309	Medical Law, Ethics & Professionalism	2
31509310	Medical Assistant Practicum	3
		<b>15</b>
		<b>TOTAL 33</b>

\*Keyboarding course or testout required

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**CULTURE OF HEALTHCARE**...is an introduction to the culture of healthcare for students interested in working in various healthcare settings. Learners examine professionalism, interpersonal and written communication skills, problem-solving skills and patient privacy and confidentiality issues as they relate to healthcare.

**DIGITAL LITERACY FOR HEALTHCARE**...focuses on the use of technology in healthcare. Learners use common business software applications, including word processing, presentation, spreadsheet, and databases. Communication methods using technology are addressed. Learners gain experience with using the electronic health record (EHR). Healthcare EHR security issues, social media use, and digital healthcare resources are examined.

**HUMAN BODY IN HEALTH & DISEASE**...students learn to recognize human body structure and function in health and disease states. Students explore the causes, signs, and symptoms of diseases of the major body systems as well as the diagnostic procedures, usual treatment, prognosis, and prevention of diseases commonly diagnosed and treated in the medical office setting. COREQUISITE: 10501101 Medical Terminology and Reading placement assessment equivalent

**MEDICAL ASSISTANT ADMINISTRATIVE PROCEDURES**...introduces medical assistant students to office management, business administration, and the electronic medical record (EMR) in the medical office. Students learn to schedule appointments, perform filing, record keeping, telephone and reception duties, communicate effectively with patients and other medical office staff, and keep an inventory of supplies. CONDITION: Reading placement assessment and 315091 Medical Assistant program requirements met and COREQUISITE: 10501107 Digital Literacy for Healthcare and PREREQUISITE: 10106100 Keyboarding or CONDITION: Keyboarding testout score greater than or equal to 25

**MEDICAL ASSISTANT CLINICAL PROCEDURES 1**...introduces medical assistant students to the clinical procedures performed in the medical office setting. Students perform basic examining room skills including screening, vital signs, patient history, minor surgery and patient preparation for routine and specialty exams in the ambulatory care setting. Learner explores communication principles and psychology theories related to patient care. COREQUISITE: 31509302 Human Body in Hlth & Dis and 31509303 Med Assist Lab Proc 1 & CONDITION: Reading placement assessment and 315091 Med Assist program requirements and CNA Competency met

**MEDICAL ASSISTANT CLINICAL PROCEDURES 2**...prepares medical assistant students to perform patient care skills in the medical office setting. Students perform clinical procedures including administering medications, performing an electrocardiogram, assisting with respiratory testing, coaching patients, and assisting with emergency situations in an ambulatory care setting. Students learn preventive care and principles of nutrition. PREREQUISITES: 31509304 Medical Assistant Clinical Procedures 1 and 31509303 Medical Assistant Lab Procedures 1 and COREQUISITE: 31509305 Medical Assistant Laboratory Procedures 2

**MEDICAL ASSISTANT LAB PROCEDURES 1**...introduces medical assistant students to laboratory procedures commonly performed by medical assistants in a medical office setting. Students perform Clinical Laboratory Improvement Amendment (CLIA) waived routine laboratory procedures commonly performed in the ambulatory care setting. Students follow laboratory safety requirements and federal regulations while performing specimen collection and processing, microbiology and urinalysis testing. COREQUISITE: 31509304 Medical Assistant Clinical Procedures 1 and CONDITION: Reading placement assessment and 315091 Medical Assistant program requirements met

**MEDICAL ASSISTANT LAB PROCEDURES 2**...prepares students to perform phlebotomy and Clinical Laboratory Improvement Amendment (CLIA) waived hematology, chemistry, immunology and laboratory procedures commonly performed by medical assistants in the ambulatory care setting. PREREQUISITE: 31509303 Medical Assistant Lab Procedures 1 and COREQUISITE: 31509306 Medical Assistant Clinical Procedures 2

**MEDICAL ASSISTANT PRACTICUM**...requires medical assistant students to integrate and apply knowledge and skills from all previous medical assistant courses in acute ambulatory health care settings. Learners perform medical assistant administrative, clinical, and laboratory duties under the supervision of trained mentors to effectively transition to the role of a medical assistant. This is a supervised, unpaid, clinical experience. This 216-hour clinical experience begins 2 days/week mid-semester and extends for 2-1/2 to 3 weeks after graduation. Student's CPR and First Aid certification must be current throughout the entire Practicum. CONDITION: 315091 Med Ast or 315164 Op Med Ast prg reqs met; PREREQUISITE: 31509301 MA-Adm Prc & 10501104 Culture of Healthcare; COREQUISITE: 31509306 MA Clin Prc 2, 31509305 MA Lab Prc 2, 31501308 Phrm-Allied Hlth, 10501102 Hlth Ins/Reimb, 31509309 Med Law/Ethcs/Prof

**MEDICAL LAW, ETHICS & PROFESSIONALISM**...prepares students to display professionalism and perform within ethical and legal boundaries in the health care setting. Students maintain confidentiality, examine legal aspects of ambulatory healthcare, perform quality improvement procedures, examine legal and bioethical issues, and demonstrate awareness of diversity. CONDITION: 315091 Medical Assistant or 315164 Ophthalmic Medical Assistant program requirements met

**MEDICAL OFFICE INSURANCE & FINANCE**...introduces learners to health insurance and finance in the medical office. Students learn to perform bookkeeping procedures, apply managed care guidelines, and complete insurance claim forms. Learners use medical coding and managed care terminology to perform insurance-related duties. COREQUISITES: 10501101 Medical Terminology, or 10806105 Medical Terminology, 31509302 Human Body in Health & Disease and 10501107 Computing for Healthcare and CONDITION: 315091 Medical Assistant

**MEDICAL TERMINOLOGY**...focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

**PHARMACOLOGY FOR ALLIED HEALTH**...introduces students to medication classification, basic pharmacology principles, and supplements. Students apply basic pharmacodynamics to identify common medications and calculate dosages in preparation for medication administration. COREQUISITES: 31509302 Human Body in Hlth & Disease and 31509306 Medical Assist Clinical Proc 2

## Program Number 31-530-2 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

The Medical Coding Specialist program prepares individuals for employment as entry-level coding specialists in health care facilities such as hospitals, clinics, physician practice groups, surgery centers, long-term care facilities, and home healthcare agencies. Coding specialists are also employed in consulting firms, coding and billing services, insurance companies, governmental agencies, and computer software companies. The medical coding specialist reviews medical documentation provided by physicians and other health care providers and translates this into numerical codes. The coding specialist assigns and sequences diagnostic and procedural codes using universally recognized coding systems. Several uses of coded data are for payment of health care claims, statistics, and medical research.

### PROGRAM OUTCOMES

- Assign diagnostic and procedure codes using the ICD coding system.
- Assign procedure codes using the HCPCS/CPT coding system.
- Adhere to security/privacy/confidentiality policies.
- Use computers to process information.
- Support data collection and reimbursement system.
- Communicate in a professional manner.
- Model professional behaviors, ethics, and appearance.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete health requirements.
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10501101	Medical Terminology	3
10501102	Health Insurance and Reimbursement OR 10530185 Health Care Reimbursement (2 cr)	3
10530187	Clinical Information Management OR 10530176 Health Data Management (2 cr) AND 10530181 Introduction to the Health Record (1 cr)	4
10501107	Digital Literacy for Healthcare	2
10806189	Basic Anatomy OR 10806189OL Basic Anatomy (3 cr) OR 10806103 Body Structure and Function (3 cr) OR 10806177 General Anatomy & Physiology (4 cr)	3
		<b>15</b>
<b>Term 2</b>		
10530182	Human Diseases for Health Professions	3
10530184	CPT Coding	3
10530197	ICD Diagnosis Coding	3
10530199	ICD Procedure Coding	2
10530195	Applied Coding	2
10530191	HIM/Coding Practicum 1 OR 10530179 Medical Coding Internship (2 cr)	2
		<b>15</b>
		<b>TOTAL 30</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**APPLIED CODING**...prepares students to assign ICD and CPT/HCPCS codes supported by medical documentation with intermediate level of proficiency. Students will prepare appropriate physician queries in accordance with compliance guidelines and will assign codes to optimize compliance with federal regulations and reimbursement. PREREQUISITE: 10501101 Medical Terminology and COREQUISITES: 10530197 ICD Diagnosis Coding and 10530199 ICD Procedure Coding and 10530184 CPT Coding and 10501102 Health Insurance and Reimbursement

**BASIC ANATOMY**...examines concepts of anatomy and physiology as they relate to health careers. Learners correlate anatomical and physiological terminology to all body systems. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**CLINICAL INFORMATION MANAGEMENT**...prepares learners for work with health information in various health care delivery systems and within a health information department. It prepares learners to retrieve data from health credits. Professional ethics, confidentiality and security of information are emphasized. It introduces learners to the use and structure of health care data elements, data sets, data standards, their relationships to primary and secondary record systems and health information processing. COREQUISITE: 10501107 Digital Literacy for Healthcare

**CPT CODING**...prepares learners to assign CPT codes, supported by medical documentation, with entry-level proficiency. Learners apply CPT instructional notations, conventions, rules, and official coding guidelines when assigning CPT codes to case studies and actual medical record documentation. COREQ: 10530182 Human Dis for Hlth Prof and 10501102 Hlth Ins & Reimb and PREREQUISITE: 10501101 Med Term and CONDITION: 315302 Medical Coding Spec or 105304 Health Information Mgmt program requirements met

**DIGITAL LITERACY FOR HEALTHCARE**...focuses on the use of technology in healthcare. Learners use common business software applications, including word processing, presentation, spreadsheet, and databases. Communication methods using technology are addressed. Learners gain experience with using the electronic health record (EHR). Healthcare EHR security issues, social media use, and digital healthcare resources are examined.

**HEALTH DATA MANAGEMENT**...introduces the use and structure of health care data elements, data sets, data standards, their relationships to primary and secondary record systems and health information processing.

**HEALTH INSURANCE AND REIMBURSEMENT**...provides the learner with an understanding of the various types of insurance and managed care plans, and the cycle of medical claims processing. The learner will review cases, develop critical thinking skills in analyzing information, and selecting processes for reimbursement success.

**HEALTHCARE REIMBURSEMENT**...prepares learners to compare and contract health care payers, illustrate the reimbursement cycle, and to comply with regulations related to fraud and abuse. Learners assign Diagnosis Related Groups (DRGs), Ambulatory Payment Classifications (APCs) and Resource Utilization Groups (RUGs) with entry-level proficiency.

**HIM/CODING PRACTICUM 1**...applies previously acquired skills and knowledge by means of clinical experiences in the technical procedures of health record systems and discussion of clinical situations. COREQUISITES: 10530195 Applied Coding, 10530197 ICD Diagnosis Coding, 10530199 ICD Procedure Coding, 10530184 CPT Coding, CONDITION: 315302 Medical Coding Specialist or 105304 Health Information Management program requirements met

**HUMAN DISEASE FOR HEALTH PROFESSIONS**...prepares learners to interpret clinical documentation that they will encounter in a variety of healthcare settings. Emphasis is placed on understanding the common disorders and diseases of each body system to include the etiology (cause), signs and symptoms, diagnostic tests and results, and medical treatments and surgical procedures. COREQUISITES: 10501101 Med Term or CONDITION: 101064 Med Trans Spec program requirements met and 10806103 Body Struc & Func or CONDITION: 311067 Medical Transcription program requirements met and 10806103 Body Structure and Function

**ICD DIAGNOSIS CODING**...prepares students to assign ICD diagnosis codes supported by medical documentation with entry level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD diagnosis codes to case studies and actual medical record documentation. PREREQUISITE: 10501101 Medical Terminology and COREQUISITES: 10530182 Human Diseases for the Health Professions and 10501102 Health Insurance and Reimbursement

**ICD PROCEDURE CODING**...prepares students to assign ICD procedure codes supported by medical documentation with entry level proficiency. Students apply instructional notations, conventions, rules, and official coding guidelines when assigning ICD procedure codes to case studies and actual medical record documentation. PREREQUISITE: 10501101 Medical Terminology and COREQUISITES: 10530182 Human Diseases for the Health Professions and 10501102 Health Insurance and Reimbursement

**INTRO TO THE HEALTH RECORD**...prepares learners to illustrate the flow of health information in various health care delivery systems and within the health information department. It prepares learners to retrieve data from health records. Professional ethics, confidentiality, and security of information are emphasized.

**MEDICAL CODING INTERNSHIP**...applies previously acquired skills and knowledge by means of clinical experiences in the technical procedures of medical coding and reimbursement. Student will exhibit professional and ethical behavior in a professional practice setting, apply legal and regulatory requirements to healthcare delivery system information infrastructure, with assistance, compare and contrast health care payers, illustrate the reimbursement cycle, and comply with regulations related to fraud and abuse. COREQUISITES: 10530184 CPT Coding, 10530195 Applied Coding, 10530197 ICD Diagnosis Coding, 10530199 ICD Procedure Coding, and CONDITION: 315302 Medical Coding Specialist or 105304 Health Information Management

**MEDICAL TERMINOLOGY**...focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

**Program Number 10-624-1**  
**Associate Degree in Applied Science • Five Terms**

### ABOUT THE PROGRAM

The increasing use of radiation and radioactive materials in today's world has created a demand for radiation protection technicians. The Nuclear Technology program offers the student a unique opportunity to obtain the specialized training in demand by businesses and organizations licensed to utilize radioactive materials. This program can result in starting salaries higher than many four-year degree programs. It is also an excellent springboard for a four-year degree in the high-demand field of health physics and radiation safety.

### PROGRAM OUTCOMES

- Work safely within industrial and radiological hazard areas.
- Understand and communicate nuclear technology-related concepts effectively in both oral and written formats.
- Diagnose equipment requiring electrical or mechanical repair and carry out preventive maintenance procedures.
- Perform radiological surveys for radiation and radioactive contamination.
- Follow procedures for operating and maintaining systems and equipment at nuclear facilities.
- Participate in applying nuclear technologies to a variety of industrial, medical, and research processes.
- Apply knowledge in a variety of related occupational jobs such as reactor plant operations, maintenance, quality assurance, etc.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

- Classes are offered at LTC's main campus with videoconferencing to NWTC's Green Bay Campus and BTC's Milton Campus.
- Students may potentially earn \*NUCP certification by maintaining a "B" or above in all coursework. (Program courses meet NUCP standards; certification is contingent upon LTC's NUCP partnership with a nuclear facility) Online students are not eligible. (\*NUCP=Nuclear Uniform Curriculum Program)
- Gaining employment in the nuclear, radiation safety, and health physics likely includes a very comprehensive background check of one's lifespan. This includes not only criminal activities, but likely also credit history, civil actions, and a psychological profile.
- Online Option: Available to working adults in the Nuclear/Radiation Safety/Health Physics industry. To register for online courses, search for the catalog numbers and the online option. Online courses have prerequisites. Online students work with their industry supervisor to identify suitable activities at their worksite to enhance their learning.

### CONTACT

LTC Career Coach  
 920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10624105	Health Physics Calculations and Statistics	3
10624110	Radioactivity and Regulations	3
10804113	College Technical Mathematics 1A	3
10801195	Written Communication	3
		<b>12</b>
<b>Term 2</b>		
10624114	Nuclear Systems and Sources	3
10624122	Radiation Physics	3
10624123	Radiation Physics-Lab	2
10624103	Nuclear DC and AC Applications	3
10801196	Oral/Interpersonal Communications	3
		<b>14</b>
<b>Summer</b>		
10624118	Radiation Biology	3
10809122	Introduction to American Government	3
		<b>6</b>
<b>Term 3</b>		
10624138	Radioactive Materials Management	2
10624133	Radiological Emergencies	3
10624134	Radiation Shielding	2
10624135	Radiation Shielding Lab	1
10806154	General Physics 1	4
10624149	Reactor Plant Components	4
		<b>16</b>
<b>Term 4</b>		
10624140	Radiochemistry	3
10624148	Reactor Theory and Operation	3
10624145	Applied Health Physics	3
10624146	Applied Health Physics Lab OR	2
10624156	Radiation Safety Internship	
10809198	Introduction to Psychology	3
		<b>14</b>
		<b>TOTAL 62</b>

Most classes in this program have prerequisites.

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**APPLIED HEALTH PHYSICS**...prepares the learner to issue dosimetry, monitor personal exposure, calculate/estimate radioactive airborne activity concentration, issue respirators, determine contamination levels, don and remove protective clothing, reduce the spread of contamination, conduct an ALARA audit, reduce the total radiation exposure, maintain records and estimate skin dose, etc. PREREQUISITE: 10624122 Radiation Physics

**APPLIED HEALTH PHYSICS-LAB**...expands the learner's ability to perform applied health physics tasks as covered in Applied Health Physics, 624-145 and should be completed within the same semester. COREQUISITE: 10624145 Applied Health Physics

**COLLEGE TECHNICAL MATHEMATICS 1A**...prepares the student to solve linear, quadratic, and relational equations; graph; formula rearrangement; solve systems of equations; percent; proportions; and operations on polynomials. Emphasis will be on the application of skills to technical problems. PREREQUISITES: 10834110 Elementary Algebra w Apps or 10804107 College Mathematics or 31457318 Ind Mtrc Trades Math or 31420320 Machine Tool Math or math placement assessment equivalent

**GENERAL PHYSICS 1**...presents the applications and theory of basic physics principles. This course emphasizes problem-solving, laboratory investigation, and applications. Topics include unit conversions and analysis, vectors, translational and rotational kinematics, translational and rotational dynamics, heat and temperature, and harmonic motion and waves. PREREQUISITE: 10804113 College Tech Math 1A, 10804115 College Tech Math 1, or 10804118 Intermediate Algebra, or Math placement assessment equivalent.

**HEALTH PHYSICS CALCULATIONS AND STATISTICS**...prepares the learner to solve linear and exponential equations, logarithms, plot graphs, determine counting statistics and reliability, and work with geometry and trigonometry problems. COREQUISITE: 10624110 Radioactivity and Regulations

**INTRODUCTION TO AMERICAN GOVERNMENT**...introduces American political processes and institutions. It focuses on rights and responsibilities of citizens and the process of participatory democracy. Learners examine the complexity of the separation of powers and checks and balances. It explores the role of the media, interest groups, political parties and public opinion in the political process. It also explores the role of state and national government in our federal system. COREQUISITE: 10838105 Intro to Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**NUCLEAR DC AND AC APPLICATIONS**...prepares nuclear, radiation safety, and health physics learners to apply direct current (DC) and alternating current (AC) concepts and laws; perform calculations and measurements to identify basic electrical terms, symbols, units, etc.; apply the electrical laws (such as, Ohm's law, Kirchhoff's voltage and current laws); to analyze DC/AC electronic circuit, power, etc.; to analyze AC waveform (including single-phase versus three-phase), batteries, chargers, etc. PREREQUISITE: 10624105 HealthPhysics Calcs & Stats

**NUCLEAR SYSTEMS AND SOURCES**...introduces the learner to the major components of natural/man-made background sources, x-ray tubes and applications, medical-used radioactivity materials, accelerators, nuclear gauging devices, non-ionization radiations, and power/research nuclear reactors and associated health physics topics. PREREQUISITE: 10624110 Radioactivity and Regulations

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**RADIATION BIOLOGY**...prepares the learner to convert measuring units and activity to dose rates, predict the effect of radiation on living cells and human organs, evaluate radiation risk, and calculate internal doses. PREREQUISITES: 10624110 Radioactivity and Regulations, 10624105 Health Phys Calc/Stats, 10624114 Nuclear Systems and Sources, 10624122 Rad Physics, 10624123 Rad Phys-Lab, and 10804113 College Tech Math 1A

**RADIATION PHYSICS**...introduces the learner to health physics-related physics, including the properties of radiation; interactions of radiation with matters; basic principles of radiation detection and measurement; and different kinds of radiation detectors; i.e., gas-filled and solid-state detectors. PREREQUISITE: 10624110 Radioactivity and Regulations, 10624105 Health Physics Calc & Stats, and 10804113 College Tech Math 1A

**RADIATION PHYSICS-LAB**...expands the learners ability to perform calculations, select instruments, and analyze samples. This course is associated with 624-122, Radiation Physics. COREQUISITE: 10624122 Radiation Physics and PREREQUISITE: 10801195 Written Communicationsand COREQUISITE: Radioactivity and Regulations

**RADIATION SHIELDING**...provides the learner with the skills to calculate radiation attenuation from various geometric radioactive sources, determine the effect of neutron radiation on materials, and estimate the exposure rate from various sources with or without shielding materials. PREREQUISITE: 10624122 Radiation Physics

**RADIATION SHIELD-LAB**...expands the learner's ability to perform shielding of ionizing radiation sources and to measure the penetration of beta and gamma radiation. COREQUISITE: 10624134 Radiation Shielding

**RADIOACTIVE MATERIAL AND MANAGEMENT**...introduces the learner to the proper methods used to dispose of radioactive waste in liquid, solid, gaseous forms; determine waste classification, evaluate methods used to process low-level and high-level waste, determine the package/label requirements, proper type of transport container, shipment quantity classification, storage distance from people and film during shipments by rail/vessel/public roads, proper shipping name and UN number; completion of proper shipping papers; document materials inventory/shipments. PREREQUISITES: 10624105 Health Physics Calc & Statistics, 10624110 Radioactivity and Regulations, 10624114 Nuclear Systems & Sources

**RADIOACTIVITY AND REGULATIONS**...introduces the learner to atomic and nuclear structure; radioactivity and basic dosimetry; regulation standards, including 10CFR 19, 20, 30, and 35. COREQUISITE: 10624105 Health Physics Calcs & Stats

**RADIOCHEMISTRY**...provides the student with the fundamentals of chemistry and the application of chemistry control to a nuclear facility. The course will cover basic water treatment principles, corrosion, reactor water chemistry control and chemical hazards. Prepares the learner to separate dissolved, suspended, liquid, and ionic radioactive components; perform qualitative and quantitative analysis of samples; and prevent the production of radioactive material by using proper chemical control. PREREQUISITE: 10624122 Radiation Physics or 10624122OL Radiation Physics

**RADIOLOGICAL EMERGENCIES**...teaches the learner to understand a radiological emergency, which is displaced radioactive substances in solid, liquid, or gaseous forms in amounts resulting in doses to workers, the public, or the environment, that exceeds company, state, and federal limits or regulations; how it is prevented and mitigated, the proper preparation and post-accident actions, as well as the regulations on radioactive releases, estimation of doses in an emergency, and the first response to an emergency. PREREQUISITES: 10624110 Nuclear Technology and Regulations, 10624105 Health Physics Calculations and Statistics and 10624114 Nuclear Systems and Sources

**REACTOR PLANT COMPONENTS**...provides the learner with the fundamentals of heat transfer and fluid flow, and properties of reactor plant materials. The course introduces basic mechanical and electrical components used in nuclear power plants such as different types of piping, valves, pumps, ejectors, filters, turbines, heat exchangers, compressors, lubrication systems, valve actuators, breakers, transformers, relays and other equipment. PREREQUISITES: 10624110 Radioactivity and Regulations, 10624105 Health Physics Calculations & Statistics, 10804113 College Technical Math 1A and COREQUISITE: 10624114 Nuclear Systems and Sources,

**REACTOR THEORY AND OPERATION**...introduces the learner to the basic reactor types, the fission process, reactivity/criticality, reactor kinetics, heat removal, residual/decay heat, basic reactor types, nuclear plant water chemistry, and reactor thermodynamics. PREREQUISITE: 10624122 Radiation Physics and 10624133 Radiological Emergencies

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

**Program Number 30-543-1  
Technical Diploma • One Term**

**ABOUT THE PROGRAM**

Nursing assistants play an important role in basic patient/resident care activities in hospitals, nursing homes, and other healthcare settings, including home healthcare. If you're a good communicator, compassionate, and interested in caring for people, becoming a nursing assistant may be a rewarding career choice for you.

**PROGRAM OUTCOMES**

- Communicate and interact with clients, families and coworkers.
- Maintain and protect client rights.
- Report and record observations.
- Demonstrate ethical and legal responsibilities of the NA/HHA.
- Perform the basic nursing skills required of the NA/HHA.
- Provide for personal care and hygiene.
- Assist with the client rehabilitation and restorative care, promoting independence.
- Assist clients with long-term disabling conditions including dementia.
- Distinguish color and color intensity.
- Read and converse in English.
- Work under stress of time and job demands.
- Maintain emotional control.

**CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES**

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

**ADMISSION TO DO'S**

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Complete background check and \$16 processing fee.

**PROGRAM TO DO'S**

- Work with Academic Advisor to:
  - Review and complete Nursing Assistant Handbook.
  - Complete health requirements.

**APPROXIMATE COSTS**

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

**SPECIAL NOTE**

The Nursing Assistant program meets state and federal requirements for training and testing. Upon completion, the graduate will be eligible to sit for the State of Wisconsin Nursing Assistant Competency Examination. The Nursing Assistant program is open to eligible individuals including high school students who are at least 16 years of age or older. This program is not eligible for financial aid.

**CONTACT**

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
30543300	Nursing Assistant	3
		<b>TOTAL 3</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**NURSING ASSISTANT**...is designed to prepare learners for employment in home care agencies, nursing homes, and hospitals. Learners are supervised by qualified RNs in classroom, lab, and clinical areas. Classes are presented by means of online and face-to-face instruction. Lab and clinical activities are scheduled at designated locations in Manitowoc and Sheboygan Counties. Upon successful completion, the graduate will be eligible to sit for the State of Wisconsin Nursing Assistant Competency Examination. CONDITION: 305431 Nursing Assistant Admission Requirements Met

**Program Number 10-543-1**  
**Associate Degree in Applied Science**

**ABOUT THE PROGRAM**

If you're ill or injured, it's comforting to know you're in the care of highly skilled, well-educated healthcare professionals. At the core of that healthcare team are registered nurses whose mission is to assess and care for the ill and injured as well as to maintain health and prevent illness of individuals across the lifespan. If you work well under pressure; like math, science, communications, and problem solving; are independent; and have a strong desire to work with and help people—success may be yours as a registered nurse.

**PROGRAM OUTCOMES**

- Implement one's role as a nurse in ways that reflect integrity, responsibility, ethical practices, and an evolving identity as a nurse committed to evidence-based practice, caring, advocacy, and quality care.
- Demonstrate appropriate written, verbal, and nonverbal communication in a variety of clinical contexts.
- Integrate social, mathematical, and physical sciences, pharmacology, in clinical decision making.
- Provide patient centered care by utilizing the nursing process across diverse populations and health care settings.
- Minimize risk of harm to patients, members of the health care team, and self through safe individual performance and participation in system effectiveness.
- Lead the multidisciplinary health care team to provide effective patient care throughout the lifespan.
- Use information and technology to communicate, manage data, mitigate error, and support decision making.

**CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES**

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

**ADMISSION TO DO'S**

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

**CLASS REGISTRATION TO DO'S**

- Complete an assessment for placement (Accuplacer or ACT).
- Complete and submit Functional Abilities Statement of Understanding form.
- Read the Nursing Program Handbook and submit the signed signature page.
- Complete a program advising session with your advisor.

**PROGRAM READY TO DO'S**

- Pass HESI exam (Health Occupations Entrance assessment) with a 80% or higher.
- Complete and submit health form.
- Complete chemistry requirement.
- Meet math requirement for Nursing (Accuplacer score of 263 or college level math).

**APPROXIMATE COSTS**

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

**FINANCIAL AID**

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

**SPECIAL NOTE**

- High school Chemistry may fulfill admission requirement.
- CPR BLS Healthcare Provider certification is required prior to starting clinicals.
- Nursing Assistant skills must be attained within one semester prior to starting clinicals.
- LTC's Nursing—Associate Degree program is accredited by the Accreditation Commission for Education in Nursing, 3343 Peachtree Road N.E., Suite 850, Atlanta, Georgia 30326. 404-975-5000 Fax 404-975-5020. [www.acenursing.org](http://www.acenursing.org)

**CONTACT**

LTC Career Coach  
 920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10806177	General Anatomy & Physiology	4
10809198	Introduction to Psychology	3
10801195	Written Communications OR 10801136 English Composition 1	3
		<b>10</b>
<b>Term 2</b>		
10806179	Advanced Anatomy & Physiology	4
10801196	Oral/Interpersonal Communications	3
10809188	Developmental Psychology	3
		<b>10</b>
<b>Term 3</b>		
10806197	Microbiology	4
10809172	Introduction to Diversity Studies* OR 10809196 Introduction to Sociology	3
		<b>7</b>
<b>Term 4</b>		
10543101	Nursing Fundamentals	2
10543102	Nursing Skills	3
10543103	Nursing Pharmacology	2
10543104	Nsg: Intro to Clinical Practice	2
		<b>9</b>
<b>Term 5</b>		
10543105	Nursing Health Alterations	3
10543106	Nursing Health Promotions	3
10543107	Nsg: Clinical Care Across Lifespan	2
10543108	Nsg: Intro Clinical Care Management	2
		<b>10</b>
<b>Term 6</b>		
10543109	Nsg: Complex Health Alterations 1	3
10543110	Nsg: Mental Health Community Concepts	2
10543111	Nsg: Intermediate Clinical Practice	3
10543112	Nsg: Advanced Skills	1
		<b>9</b>
<b>Term 7</b>		
10543113	Nsg: Complex Health Alterations 2	3
10543114	Nsg: Management & Professional Concepts*	2
10543115	Nsg: Advanced Clinical Practice	3
10543116	Nursing Clinical Transition	2
		<b>10</b>

**TOTAL 65**

<b>Recommended Support/Elective Credits</b>		
10501101	Medical Terminology	3
10543124	Virtual Clinical for 2nd Semester Nursing	1
10543125	Virtual Clinical for 3rd Semester Nursing	1
10809166	Intro to Ethics: Theory and Application	3*
10510109	EKG/Phlebotomy	4

*NOTE: Courses with \* may count toward BSN completion credit requirements*

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ADVANCED ANATOMY AND PHYSIOLOGY**...is the second semester in a two-semester sequence in which normal human anatomy and physiology are studied using a body systems approach with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Instructional delivery within a classroom and laboratory setting. Experimentation within a science lab will include analysis of cellular metabolism, the individual components of body systems such as the nervous, neuro-muscular, cardiovascular, and urinary. Continued examination of homeostatic mechanisms and their relationship to fluid, electrolyte, acid-base balance and blood. Integration of genetics to human reproduction and development are also included in this course. PREREQUISITE: 10806177 General Anatomy & Physiology or equivalent

**DEVELOPMENTAL PSYCHOLOGY**...introduces the student to the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual from conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others. COREQUISITE: 10838105 Intro Reading & Study Skills or Reading placement assessment equiv

**GENERAL ANATOMY AND PHYSIOLOGY**...examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. PREREQUISITE: 10806134 General Chemistry or equivalent

**INTRODUCTION TO DIVERSITY STUDIES**...introduces learners to the study of diversity from a local to a global environment using a holistic, interdisciplinary approach. Encourages self-exploration and prepares the learner to work in a diverse environment. In addition to an analysis of majority/minority relations in a multicultural context, the primary topics of race, ethnicity, age, gender, class, sexual orientation, disability, religion are explored. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**MICROBIOLOGY**...introduces the learner to examine microbial structure, metabolism, genetics, growth and relationship between humans and microorganisms. Addresses disease production, epidemiology, host defense mechanisms and the medical impact of microbes. Examines the role of microbes in the environment, industry, and biotechnology. PREREQUISITE: 10806177 General Anatomy and COREQUISITE: 10838105 Intro to Reading and Study Skills or Reading placement assessment equivalent

**NSG: ADVANCED CLINICAL PRACTICE**...requires the student to integrate concepts from all previous courses in the management of groups of clients facing complex health alterations. Students will have the opportunity to further develop critical thinking skills using the nursing process in making clinical decisions. Continuity of care through interdisciplinary collaboration is emphasized. Students need current professional AHA CPR card, TB test, and flu vaccine. Student must have completed third semester courses. Course requires a minimum grade of "C" or better. COREQUISITE: 10543113 Nursing Complex Health Alterations II

**NSG: CLINICAL CARE ACROSS LIFESPAN**...applies nursing concepts and therapeutic interventions to clients across the lifespan. It also provides an introduction to concepts of teaching and learning. Extending care to include the family is emphasized. Student must have completed all first semester courses. Student needs a current TB test, AHA CPR card (1 and 2 person, adult, infant, and child, AED), and flu vaccine. Course requires a minimum grade of "C" or better. COREQUISITE: 10543106 Nursing Health Promotion. Student must have completed all first semester courses. Student needs a current TB test and professional CPR card (1 and 2 person, adult, infant, and child, AED). Course requires a minimum grade of "C" or better.

**NSG: COMPLEX HEALTH ALTERATIONS 1**...prepares the learner to provide and evaluate care for patients across the lifespan with alterations in cardiovascular, respiratory, endocrine, and hematologic systems as well as patients with fluid/electrolyte and acid-base imbalance, and alterations in comfort. Student must have completed all second semester courses. Course requires a minimum grade of "C" or better. PREREQUISITE: 10543105 Nrsng Hlth Alt and 10543106 Nrsng Hlth Promotion and 10543107 Clin Care Across Lifespan and 10543108 Intro Clin Care Mgmt and 10806196 A&P II or 10806179 or 10806179OL Adv A & P COREQUISITE: 10806197 or 10809197OL Microbiology

**NSG: COMPLEX HEALTH ALTERATIONS 2**...prepares the learner to provide and evaluate care for patients across the lifespan with alterations in the immune, neuro-sensory, musculoskeletal, gastrointestinal, hepatobiliary, renal/urinary, reproductive systems and shock/burns and trauma. The learner will also focus on management of care for patients with high-risk perinatal conditions and high-risk newborns. This course requires a minimum grade of "C" or better. PREREQUISITE: 10543109 Nrsng Complex Hlth Alt 1 and 10543112 Nrsng Adv Skills and 10543110 Nrsng Mental Hlth Comm Concepts and 10543111Nrsng Intern Clin Pract and 10806197 Microbiology or 10806197OL Microbiology

**NSG: INTERMEDIATE CLINICAL PRACTICE**...develops the RN role when working with clients with complex health care needs. A focus of the course is developing skills needed for managing multiple clients across the lifespan and priorities. Using the nursing process students will experience adapting nursing practice to meet the needs of clients with diverse needs and backgrounds. Student must have completed all second semester courses. Student needs a current TB test, AHA CPR card (1 and 2 person, adult, infant, and child, AED), and flu vaccine. Course requires a minimum grade of "C" or better. COREQUISITE: 10543112 Nursing Advanced Skills and 10543109 Nursing Complex Health Alterations I and 10543110 Nursing Mental Health Community Concepts

**NSG: INTRO CLINICAL CARE MANAGEMENT**...applies nursing concepts and therapeutic nursing interventions to groups of clients across the lifespan. It also provides an introduction to leadership, management, and teambuilding. Student must have completed all first semester courses. Student needs a current TB test, AHA CPR card (1 and 2 person, adult, infant & child, AED), and flu vaccine. Course requires a minimum grade of "C" or better. COREQUISITE: 10543105 Nursing Health Alterations. Student must have completed all first semester courses. Student needs a current TB test and professional CPR card (1 and 2 person, adult, infant, and child, AED). Course requires a minimum grade of "C" or better.

**NSG: INTRO CLINICAL PRACTICE**...is an introductory clinical course that emphasizes basic nursing skills and application of the nursing process in meeting the needs of diverse clients across the lifespan. Emphasis is placed on performing basic nursing skills, the formation of nurse-client relationships, communication, data collection, documentation, and medication administration. Student needs a current TB test, AHA CPR card (1 and 2 person, adult, infant, and child, AED), and flu vaccine. Student needs to be enrolled in the Nursing program. Course requires a minimum grade of "C" or better. CONDITION: 105431 Nursing-Associate Degree Enrollment Requirements Met and COREQUISITE: 10543101 Nursing Fundamentals and 10543102 Nursing Skills and 10543103 Nursing Pharmacology

**NSG: MANAGEMENT & PROFESSIONAL CONCEPTS**...covers nursing management and professional issues related to the role of the registered nurse. Emphasis is placed on preparing for practice as a registered nurse. This course requires a minimum grade of "C" or better. PREREQUISITE: 10543109 Nrsng Complex Hlth Alterations 1 and 10543112 Nursing Advanced Skills and 10543110 Nrsng Mental Hlth Comm Concepts and 10543111 Nrsng Intern Clin Practice

**NSG: MENTAL HEALTH COMMUNITY CONCEPTS**...will cover topics related to the delivery of community and mental health care. Specific health needs of individuals, families, and groups will be addressed across the lifespan. Attention will be given to diverse and at-risk populations. Mental health concepts will concentrate on adaptive/maladaptive behaviors and specific mental health disorders. Community resources will be examined in relation to specific types of support offered to racial, ethnic, and economically diverse individuals and groups. Student must have completed all second semester courses. Course requires a minimum grade of "C" or better. PREREQUISITE: 10543105 Nrsng Hlth Alt, 10543106 Nrsng Hlth Promo, 10543107 Clin Care Across Lifespan, 10543108 Intro Clin Care Mgt, 10806196 A&P II; or 10806179 or 10806179OL Adv A&P & COREQUISITE: 10809198 or 10809198OL Psyc-Intro or 10809199 Psyc-Hum Rel

**NURSING ADVANCED SKILLS**...focuses on the development of advanced clinical skills across the lifespan. Content includes advanced IV skills, blood product administration, chest tube systems, basic EKG interpretation and nasogastric/feeding tube insertion. This course requires a minimum grade of "C" or better. PREREQUISITE: 10543105 Nrsng Hlth Alterations and 10543106 Nrsng Hlth Promotion and 10543107 Clin Care Across Lifespan; and 10543108 Intro Clin Care Mgmt and 10806196 A&P II; or 10806179 or 10809197OL Adv A&P

**NURSING CLINICAL TRANSITION**...integrates all knowledge learned in the previous courses in transitioning to the role of the graduate nurse. Course promotes relatively independent clinical decisions, delegation, and works collaboratively with others to achieve client & organizational outcomes. Continued professional development is fostered. Student needs a current professional AHA CPR card, TB test, and flu vaccine. Student must have completed all third semester courses. Course requires a min grade of "C" or better. COREQUISITE: 10543115 Nrsng Adv Clinical Practice and 10543114 Nursing Management Concepts and 10543113 Nursing Complex Health Alt II

**NURSING FUNDAMENTALS**...focuses on basic nursing concepts to provide evidenced-based care to diverse patient populations across the lifespan. Current and historical issues impacting nursing will be explored within the scope of nursing practice. Nursing process will be introduced as a framework for organizing the care of patients. Course requires a min grade of "C" or better. COREQUISITE: 10806177 or 10806177OL or 10806177SA Gen Anatomy & Physiology, 10801195 Written Comm or 10801195OL Written Comm-Online & CONDITION: 105431 Nursing-Asst Deg

**NURSING HEALTH ALTERATIONS**...elaborates upon the basic concepts of health and illness as presented in Nursing Fundamentals. It applies theories of nursing in the care of clients through the lifespan, utilizing problem solving and critical thinking. This course will provide an opportunity to study conditions affecting different body systems and apply evidence-based nursing interventions. It will also introduce concepts of leadership and management. Course requires a minimum grade of "C" or better. PREREQUISITE: 10543101 Nrsng Fund and 10543102 Nrsng Skills and 10543103 Nrsng Pharm and 10543104 Nrsng: Intro to Clin Practice and 10806177 or 10806177OL or 10806177SA Gen Anat & Phys or 10806196 Anat & Phys II

**NURSING HEALTH PROMOTION**...focuses on topics related to health promotion in for individuals and families throughout the lifespan. We will cover nursing care of the developing family, which includes reproductive issues, pregnancy, labor and delivery, post-partum, the newborn, and the child. Recognizing the spectrum of healthy families we will discern patterns associated with adaptive and maladaptive behaviors applying mental health principles. An emphasis is placed on teaching and supporting healthy lifestyle choices for individuals of all ages. Nutrition, exercise, stress management, empowerment, and risk reduction practices are highlighted. Study of the family will cover dynamics, functions, discipline styles, and stages of development. Course requires a minimum grade of "C" or better. PREREQUISITE: 10543101 Nrsng Fund, 10543102 Nrsng Skills, 10543103 Nrsng Pharm, 10543104 Nrsng Intro Clin Pract , 10809164 Human Grwth/Dev or 10809188 Dev Psyc & 10806177 or 10806177OL or 10806177SA Gen A & P or 10806196 A & P 2 & COREQUISITE: 10801196 or 10801196OL Oral/Inter/Pracs Com or 10801198 Speech

**NURSING PHARMACOLOGY**...introduces the principles of pharmacology, including drug classifications and their effects on the body. Emphasis is on the use of the components of the nursing process when administering medications. Student must be enrolled in the Nursing program. Course requires a minimum grade of "C" or better. Do not register for this class until you are assigned a clinical slot in 543-104 in current or next semester. CONDITION: 105431 Nursing-Associate Degree Enrollment Requirements Met and COREQUISITE: 10806196 Anat & Phys 2 or 10806177 or 10806177OL or 10806177SA Gen Anat & Phys

**NURSING SKILLS**...focuses on development of evidence-based clinical skills and physical assessment across the lifespan. Content includes mathematical calculations and conversions related to clinical skills. In addition the course includes techniques related to obtaining a current health history and basic physical assessment skills using a body systems approach. This course requires a minimum grade of "C" or better. CONDITION: 105431 Nursing-Associate Degree Enrollment Requirements Met and COREQUISITE: 10806196 Anatomy and Physiology II or 10806177 or 10806177OL or 10806177SA Gen Anatomy and Physiology

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement asmnt equiv & COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 31-106-1 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

Today's businesses realize it takes efficiency and effectiveness on the part of the office staff to be successful. If your ideal work environment includes using high-tech equipment, working well with people, being organized and attentive to detail, and handling a variety of different tasks, a career as an office assistant may be a satisfying choice.

### PROGRAM OUTCOMES

- Perform accurate workplace communications.
- Use technology skills to business and administrative tasks.
- Perform routine office procedures.
- Demonstrate professionalism and effective workplace relationships.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTES

Must enroll in Keyboarding 10-106-100 or take test out.

### RELATED PROGRAMS

- Administrative Professional Associate Degree

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10106102	Information Management	3
10106131	Document Formatting	2
10106164	Information Technology Essentials	3
10801195	Written Communication	3
10801196	Oral/Interpersonal Communication OR 10801198 Speech	3
		<b>14</b>
<b>Term 2</b>		
10106130	Office Professionalism	3
10106177	Career Development OR 10106106 Internship - Office Assistant	1
10106124	eCommunications	3
10106138	Web Technologies	2
10106166	Microcomputer Business Applications 1	2
10106168	Microcomputer Business Applications 2	2
		<b>13</b>
		<b>TOTAL 27</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**CAREER DEVELOPMENT**...teaches students to develop a job search plan; develop a career portfolio including complete application materials, professional resume, cover letter; practice interview skills, participate in mock interview, and learn the role of social media in career development. COREQUISITE: 10106130 Office Professionalism

**DOCUMENT FORMATTING**...prepares the learner to keyboard and format business memorandums, business letters, business reports and tabbed columns. The learner will also create tables, create multicolumn documents, use SmartArt, create and modify styles and create ad use templates and building blocks. Emphasis will also be placed on proofreading and editing skills. COREQUISITE: 10106100 Keyboarding with a minimum grade of C or Keyboarding testout equivalent.

**ECOMMUNICATIONS**...prepares the learner to apply proofreading skills -- punctuation, grammar, spelling, word usage, capitalization, number usage--to edit or compose error-free business documents; transcribe and correctly format business documents from dictation, dictate podcasts and other items; exposure to speech recognition functions; take and key meeting minutes; and facilitation of meetings. PREREQUISITE: 10106131 Document Formatting

**INFORMATION MANAGEMENT**...introduces the student to basic terms, concepts, filing rules, systems (alphabetic and numeric), noncorrespondence filing, new filing equipment, new methods of storing and recording records, and Microsoft Access including the principles and procedures for developing, managing, and maintaining a filing system in a modern office. COREQUISITE: 10106100 Keyboarding or Keyboarding testout equivalent

**INFORMATION TECHNOLOGY ESSENTIALS**...prepares the learner with the skills to use Web 2.0 tools for group collaboration and research emerging technologies. Emphasis in this class will be to develop a plan to implement a new technology in a business environment and train classmates in this new technology.

**MICROCOMPUTER BUSINESS APPLICATIONS 1**...expands the learner's ability to use Microsoft Word by using advanced table functions; format multiple-page documents with headers, footers, footnotes and endnotes; perform merge operations for correspondence and labels; create customized forms; create a Table of Contents and Index in long documents and create and run Macros. COREQUISITE: 10106131 Document Formatting

**MICROCOMPUTER BUSINESS APPLICATIONS 2**...prepares the learner to create worksheets, utilize formulas and functions, apply formatting functions, print spreadsheet files, edit and manipulate spreadsheets and workbooks, create and modify charts, analyze spreadsheet data, create templates, and apply database features to a spreadsheet. COREQUISITE: 10106100 Keyboarding or Keyboarding testout equivalent

**OFFICE PROFESSIONALISM**...prepares the learner to identify positive attitudes and personality development; develop self-awareness of elements affecting personal and work relationships. Prepares the learner to apply communication and conflict resolution skills; demonstrate effective/efficient work habits and self-management skills; apply business protocol in a culturally diverse international market. Areas of study will also include telephone and customer service techniques, ethics, etiquette and ergonomics.

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**WEB TECHNOLOGIES**...provides a basic understanding of the Web as well as the tools used to create Web pages, blogs, and other features. Reviews social and business Web tools and components.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 31-516-4 Technical Diploma • Three Terms

### ABOUT THE PROGRAM

The Ophthalmic Medical Assistant program prepares students for employment in ophthalmic and optometric practices and in retail optical settings. Students apply technical skills to perform prescreening and specialty testing, assist with dispensing glasses and contact lenses, and perform office management duties including maintaining patient information and billing and insurance processes.

### PROGRAM OUTCOMES

- Apply technical skills to perform eye care prescreening and specialty testing procedures on patients accurately and efficiently.
- Apply technical skills to educate and assist patients with glasses and/or contact lenses to meet their eye health and visual needs.
- Perform business office procedures such as maintaining appointment schedules, maintaining patient records, processing insurance reimbursement, and billing patients.
- Demonstrate professional ethics, honesty, and respect when dealing with doctors, patients, and co-workers.
- Communicate clearly and professionally in both written and oral formats.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete health requirements.
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

- Eye exam required prior to Ophthalmic Pre-testing course (minimum of 12 months prior).
- Students must provide proof of First Aid certification and CPR certification before Ophthalmic Clinical Experience course.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10501101	Medical Terminology	3
31516306	Basic Ocular Science*	3
		<b>6</b>
<b>Term 2</b>		
31509302	Human Body in Health & Disease OR 10530182 Human Diseases for Health Professions (3 cr)	3
31516302	Optical Dispensing	4
31516303	Optical Concepts	3
31516304	Ophthalmic Pre-Testing	4
		<b>14</b>
<b>Term 3</b>		
31501308	Pharmacology for Allied Health	2
31509309	Medical Law, Ethics and Professionalism	2
31516312	Contact Lenses	2
31516330	Ophthalmic Clinical Procedures Specialty Testing	4
31516343	Ophthalmic Clinical Experience	2
		<b>12</b>
		<b>TOTAL 32</b>

\*Keyboarding course or testout required

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**BASIC OCULAR SCIENCE**...introduces learners to the structures, microscopic anatomy, and functional aspects of the eye and visual system. Clinical application emphasizes diseases, disorders and common treatments including pharmacological. **CONDITION:** 315164 Ophthalmic Medical Assistant program requirements met and **PREREQUISITE:** 10106100 Keyboarding or **CONDITION:** Keyboarding testout score greater than or equal to 25

**CONTACT LENSES**...provides the student in-depth exposure to the technical aspects of clinical contact lens practice. Lecture and laboratory experiences emphasize lens verification, patient education and evaluation. **COREQUISITE:** 31516343 Ophthalmic Clinical Experience and **PREREQUISITE:** 31516302 Optical Dispensing

**HUMAN BODY IN HEALTH & DISEASE**...students learn to recognize human body structure and function in health and disease states. Students explore the causes, signs, and symptoms of diseases of the major body systems as well as the diagnostic procedures, usual treatment, prognosis, and prevention of diseases commonly diagnosed and treated in the medical office setting. **COREQUISITE:** 10501101 Medical Terminology and Reading placement assessment equivalent

**MEDICAL LAW, ETHICS & PROFESSIONALISM**...prepares students to display professionalism and perform within ethical and legal boundaries in the health care setting. Students maintain confidentiality, examine legal aspects of ambulatory healthcare, perform quality improvement procedures, examine legal and bioethical issues, and demonstrate awareness of diversity. **CONDITION:** 315091 Medical Assistant or 315164 Ophthalmic Medical Assistant program requirements met

**MEDICAL TERMINOLOGY**...focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

**OPHTHALMIC CLINICAL EXPERIENCE**...will have students participate in assigned clinical experience beginning with vision screenings on patients from the college and continues in an optometric, ophthalmology or optical setting. Class discussions are held analyzing the results of the screening as well as the students' performance. The student is expected to achieve specific educational objectives determined for this experience. **PREREQUISITE:** 31516302 Optical Dispensing and **COREQUISITES:** 31516312 Contact Lenses and 31516330 Ophthalmic Clinical Procedures Specialty Testing

**OPHTHALMIC CLINICAL PROCEDURES SPECIALTY TESTING**...provides the student experience and knowledge in areas of special vision care procedures: subjective refraction, visual field testing, slit lamp evaluation, Goldmann and non-contact tonometry, ultrasound, basic concepts of orthoptics, and the treatment of eye diseases, including instillation of eye medications and eye patching. Patient instruction and assistance are emphasized in laboratory sessions. **COREQUISITE:** 31516343 Ophthalmic Clinical Experience and **PREREQUISITE:** 31516302 Optical Dispensing

**OPHTHALMIC PRE-TESTING**...covers the history of optometry, relationships between optometry, ophthalmology and opticianary and various paraprofessional careers in vision care. The course involves the study of and practical experience in patient pre-testing such as case history, visual acuity, color vision, pupil evaluation, and depth perception as well as the specialized testing procedures such as keratometry and blood pressure measurement. **COREQUISITE:** 31516302 Optical Dispensing

**OPTICAL CONCEPTS**...begins the study of the neutralization and verification of spectacle lens powers, to include spherical, cylindrical and prism lenses. The properties of light and the function of a lens in vision correction as well as a review of basic math needed in vision care and the physiological aspects of vision. **COREQUISITE:** 31516302 Optical Dispensing

**OPTICAL DISPENSING**...introduces learners to frame definition, parts and types of frames, measurement of frames and lenses, alignment of frames, inserting and removing lenses, introduction to dispensing of eyewear and frame repairs. **CORERQUISITES:** 31516303 Optical Concepts and 31516304 Ophthalmic Pre-Testing and 31516306 Basic Ocular Science and **CONDITION:** 315164 Ophthalmic Medical Assistant program requirements met

**PHARMACOLOGY FOR ALLIED HEALTH**...introduces students to medication classification, basic pharmacology principles, and supplements. Students apply basic pharmacodynamics to identify common medications and calculate dosages in preparation for medication administration. **COREQUISITES:** 31509302 Human Body in Hlth & Disease and 31509309 Medical Assistant Clinical Proc 2 or 31509302 Human Body in Hlth & Disease and **CONDITION:** 315164 Ophthalmic Medical Asst program requirements met

## Program Number 10-110-1 Associate Degree in Applied Science • Four Terms

### ABOUT THE PROGRAM

Paralegals work under the supervision of lawyers in a range of tasks—researching the law; investigating; preparing for hearings, trials, and real estate closings; interviewing clients and witnesses; and preparing legal documents and other legal correspondence. Paralegals cannot give legal advice or represent clients in court. If you are detail oriented, organized, strong in communications, and enjoy researching and analyzing facts, you might find a career as a paralegal very rewarding.

### PROGRAM OUTCOMES

- Apply ethical principles in a legal environment.
- Process legal documents.
- Perform legal research.
- Apply critical thinking skills to address legal issues.
- Demonstrate professionalism in a legal environment.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE FOR ONLINE LEARNERS

While many of the courses may be offered online, students are required to take at least ten semester credits or the equivalent of legal specialty courses through traditional classroom instruction. This requirement may be satisfied through synchronous interactive video systems, as they are considered equivalent to traditional classroom instruction.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10102160	Business Law 1	3
10103191	Word - Level 1	1
10110101	Introduction to Paralegalism and Legal Ethics	3
10110130	Real Estate Law - Paralegal	3
10801195	Written Communication	3
10809196	Introduction to Sociology OR 10809166 Introduction to Ethics	3
		<b>16</b>
<b>Term 2</b>		
10101155	Accounting for Professionals OR 10101111 Accounting 1 (4 cr)	3
10110102	Civil Litigation 1	3
10110104	Legal Research	3
10801196	Oral/Interpersonal Communication OR 10801198 Speech	3
10110160	Employment Law - Paralegal	3
		<b>15</b>
<b>Term 3</b>		
10110103	Civil Litigation 2	3
10110105	Legal Writing	3
10110132	Personal Branding - Paralegal	1
10110168	Criminal Law Paralegal	3
10809122	Introduction to American Government OR 10809195 Economics	3
10809198	Introduction to Psychology	3
		<b>16</b>
<b>Term 4</b>		
10110107	Legal Aspects of Business Organizations	3
10110114	Administration of Estates	3
10110143	Paralegal Internship OR 10110145 Paralegal Studies	2
10110106	Family Law	3
10806112	Principles of Sustainability OR 10804107 College Mathematics	3
		<b>14</b>
		<b>TOTAL 61</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ACCOUNTING FOR PROFESSIONALS...**is the study of the information that can be interpreted from financial statements. Students analyze financial statements and apply managerial accounting concepts in an accelerated format. PREREQUISITE: 10804123 Math w Business Apps or CONDITION: 101101 Paralegal program requirements met

**ADMINISTRATION OF ESTATES...**provides the learner with the skills to assist attorneys to administer estates, differentiate between probate and nonprobate property, contrast various forms of marital property, gather appropriate factual and financial information, select and draft appropriate forms to open an estate, prepare an inventory, draft a final accounting and documents to close an estate, draft tax documents, prepare powers of attorney and simple wills, and assist in the valid execution of estate planning documents. PREREQUISITE: 10110101 Intro to Paralegalism

**BUSINESS LAW 1...**provides the learner with the skills to summarize the American legal system; diagram the state/federal court systems; evaluate dispute resolution methods; sequence the civil litigation process; summarize the administrative agencies; differentiate civil and criminal law; apply theories of negligence, intentional tort, and product liability; summarize elements of a contract; assess the validity of a contract; assess third-party rights and available remedies; and summarize Article II of the UCC.

**CIVIL LITIGATION 1...**provides the learner with the skills to evaluate causes of action and defenses; conduct an initial client interview; perform an initial investigation; draft a summons and complaint, answer, counterclaim, cross complaint, motions and supporting documents, select appropriate discovery devices; draft interrogatories and responses; prepare for depositions; draft a Notice of Deposition and Subpoenas; analyze fact patterns; and evaluate evidentiary objections. PREREQUISITE: 10110101 Intro to Paralegalism

**CIVIL LITIGATION 2...**provides the learner with the skill to evaluate and summarize depositions; evaluate evidentiary challenges; prepare a witness list; draft settlement documents; locate expert witnesses; prepare witnesses; prepare for presentation of evidence at trial; prepare a trial notebook; draft a Bill of Costs; prepare post trial motions; evaluate and research appellate issues. PREREQUISITE: 10110102 Civil Litigation

**CRIMINAL LAW - PARALEGAL...**provides the learner with the skills to analyze state and federal criminal procedures, determine if a search and arrest is in accordance with the Fourth Amendment, analyze the Miranda rules, draft a criminal summons and complaint, determine possible defenses for a defendant, draft motions, analyze a criminal complaint and jury instructions for required elements, create demonstrative evidence, create a trial notebook, conduct a client interview, and contrast prosecution and defense roles. PREREQUISITE: 10110101 Intro to Paralegalism

**EMPLOYMENT LAW - PARALEGAL...**provides the learner with the skills to analyze state and federal law governing employment relationships, job discrimination, sexual harassment, workplace privacy, labor standards and human resource management. PREREQUISITE: 10110101 Intro to Paralegalism

**FAMILY LAW...**provides the learner with the skills to conduct an initial client interview for a family law matter, including divorce and domestic violence; draft initial pleadings for divorce, financial family law documents, divorce discovery documents, and concluding documents in divorces; assess the need for post-divorce modification and enforcement; and outline factors involving child custody and support. PREREQUISITE: 10110101 Intro to Paralegalism

**INTRODUCTION TO AMERICAN GOVERNMENT...**introduces American political processes and institutions. It focuses on rights and responsibilities of citizens and the process of participatory democracy. Learners examine the complexity of the separation of powers and checks and balances. It explores the role of the media, interest groups, political parties and public opinion in the political process. It also explores the role of state and national government in our federal system. COREQUISITE: 10838105 Intro to Reading and Study Skills or Reading placement assessment equivalent

**INTRODUCTION TO PARALEGALISM AND LEGAL ETHICS...**introduces the learner to the paralegal profession, including civil, criminal, and administrative procedure; state and federal judicial systems; legal research; case briefing; ethical rules that apply to paralegals; law office software; and substantive civil law.

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**LEGAL ASPECTS OF BUSINESS ORGANIZATIONS...**provides learners with the skills to analyze legal aspects of the formation, operation, and dissolution of sole proprietorships, partnerships, limited liability entities, and corporations; draft documents related to various business entities such as Certificates of Limited Partnership; Articles of Organization and Incorporation, Name Reservation Applications, Organizational Resolutions, Form SS-4 and 2553, Stock Certificates, Resolutions and Minutes, and Amendments and Articles of Dissolution. PREREQUISITE: 10110101 Intro to Paralegalism

**LEGAL RESEARCH...**provides the learner with the skills to differentiate between primary or secondary authority, locate statutes and constitutional provisions, locate case law, locate administrative regulations, locate secondary authority, use correct citation form, verify and update legal authority, formulate legal issues, use effective research strategies, evaluate solutions to legal problems, and use computer-assisted and internet legal research strategies. Some classes will be held off campus in a law library. PREREQUISITE: 10110101 Intro to Paralegalism

**LEGAL WRITING...**provides the learner with the skills to draft legal correspondence, operative legal documents, case briefs, and legal and office memoranda; analyze and synthesize legal authority; use correct citation form; draft a civil pleading, affidavit, trial brief, and appellate brief; and apply rules of civil procedure. PREREQUISITE: 10110104 Legal Research and 10801195 Written Comm or 10801195OL Written Comm Online

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PARALEGAL INTERNSHIP...**enhances the participant's ability to perform the duties of a paralegal; to seek and obtain employment as a paralegal; apply paralegal skills in an actual workplace setting; to perform legal research and writing; and understand law office systems and administration. Students are responsible for seeking and obtaining an internship position for a minimum of 144 hours in a legal environment under the supervision of an attorney or other qualified professional, completing an internship agreement and e-folio, maintaining a work log and obtaining approval from the internship instructor. COREQUISITE: 10110105 Legal Writing

**PERSONAL BRANDING - PARALEGAL...**prepares the student to prepare an electronic portfolio, to develop a career plan, write a resume, create a cover letter, prepare for an interview, search for work on the internet, adapt a resume for an electronic scan, and post a resume and cover letter on the internet.

**PRINCIPLES OF SUSTAINABILITY...**prepares students to develop sustainable literacy, analyze interconnections among physical and biological sciences and environmental systems, summarize effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal/recycling in the U.S., and analyze approaches used by your community. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**REAL ESTATE LAW - PARALEGAL...**provides the learner with the skills to analyze types of real estate ownership; analyze the effect of the Marital Property Act on real estate; determine the requirements of listing contracts; draft legal descriptions; draft an offer to purchase; negotiate a real property sale; prepare financing documents; compare abstracting and title insurance; record deeds; compare land contracts; summarize foreclosure procedure; draft closing documents; compare landlord and tenant rights and responsibilities. COREQUISITE: 10110101 Introduction to Paralegalism and Legal Ethics

**WORD - LEVEL 1...**introduces the student to word processing features such as creating, saving, editing, navigating, and formatting the content of multi-page documents.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

**Program Number 10-531-1**  
**Associate Degree in Applied Science • Varies**

### ABOUT THE PROGRAM

Life can bring about unfortunate events of medical or traumatic emergency; a Paramedic is a highly trained and skilled medical professional ready to assist those in need. Paramedics integrate Advanced Life Support treatment measures into the challenging pre-hospital environment. The Associate Degree Paramedic (ADP) is the individual that has exceeded minimum professional requirements and has furthered their education beyond the entry level technical diploma to gain additional knowledge and capabilities to better serve their region.

### PROGRAM OUTCOMES

- Prepare for incident response and EMS operations.
- Integrate pathophysiological principles and assessment findings for a variety of patient encounters.
- Demonstrate paramedic skills associated with established standards and procedures for a variety of patient encounters.
- Communicate effectively with others.
- Demonstrate professional behavior.
- Meet state and national competency requirements for paramedic credentialing.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete health requirements.
  - Submit Wisconsin Emergency Medical Technician License.
  - Complete Functional Abilities Statement of Understanding form.
  - Complete DMI (District Mutual Insurance) form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

Students successfully completing Terms 1 and 2 coursework of the program are able to sit for the National Registry Paramedic exam. The remaining general education and science courses can be completed afterwards to complete the Associate Degree requirements for graduation. The Lakeshore Technical College Paramedic Program is accredited by the Commission on Accreditation of Allied Health Education Programs ([www.caahep.org](http://www.caahep.org)) upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP). 25400 US Highway 19 N., Suite 158, Clearwater, FL 33756. Phone: 727-210-2350. Web: [www.caahep.org](http://www.caahep.org).

### CONTACT

LTC Career Coach  
 920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10531911	EMS Fundamentals	2
10531912	Paramedic Medical Principles	4
10531913	Advanced Patient Assessment Principles	3
10531914	Advanced Prehospital Pharmacology	3
10531915	Paramedic Respiratory Management	2
10531916	Paramedic Cardiology I	1
10531926	Paramedic HPS Lab 1	1
10531930	Paramedic Clinical I	1
		<b>17</b>
<b>Summer</b>		
10531932	Paramedic Cardiology 2	3
10531918	Advanced Emergency Resuscitation	1
10531922	EMS Operations	1
10531920	Paramedic Trauma	3
10531928	Paramedic Clinical 2	2
10531927	Paramedic HPS Lab 2	1
		<b>11</b>
<b>Term 2</b>		
10531919	Medical Emergencies	4
10531921	Special Patient Populations	3
10531923	Paramedic Capstone	1
10531933	Paramedic HPS Lab 3	1
10531929	Paramedic Field Clinical	2
10531931	Paramedic Internship	1
		<b>12</b>
<b>Term 3</b>		
10804107	College Mathematics	3
10806177	General Anatomy & Physiology	4
10801195	Written Communication	3
10809198	Introduction to Psychology	3
		<b>13</b>
<b>Term 4</b>		
10806179	Advanced Anatomy & Physiology	4
10801196	Oral/Interpersonal Communication	3
10809166	Introduction to Ethics: Theory & Application	3
		<b>10</b>

**TOTAL 63**

## *Curriculum Modifications*

### *Pending State Approval*

To contact CoAEMSP:  
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 Suite 111-312  
 Rowlett, TX 75088  
 214-703-8445  
 Fax 214-703-8992  
[www.coaemsp.org](http://www.coaemsp.org)

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**ADVANCED ANATOMY AND PHYSIOLOGY**...is the second semester in a two-semester sequence in which normal human anatomy and physiology are studied using a body systems approach with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Instructional delivery within a classroom and laboratory setting. Experimentation within a science lab will include analysis of cellular metabolism, the individual components of body systems such as the nervous, neuromuscular, cardiovascular, and urinary. Continued examination of homeostatic mechanisms and their relationship to fluid, electrolyte, acid-base balance and blood. Integration of genetics to human reproduction and development are also included in this course. PREREQUISITE: 10806177 General Anatomy & Physiology or equivalent

**ADVANCED EMERGENCY RESUSCITATION**...provides ACLS and PALS knowledge and skills preparing the student in the integration of comprehensive knowledge of causes and pathophysiology into the management of shock, respiratory failure, respiratory arrest, cardiac arrest, and peri-arrest with intervention to prevent respiratory and/or cardiac arrest if possible. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531916 Paramedic Cardiology

**ADVANCED PATIENT ASSESSMENT PRINCIPLES**...provides knowledge of scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531912 Paramedic Medical Principles

**ADVANCED PREHOSPITAL PHARMACOLOGY**...provides student with comprehensive knowledge of pharmacology required to formulate and administer a pharmacological treatment plan intended to mitigate emergencies and improve the health of the patient. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531913 Advanced Patient Assessment Principles

**COLLEGE MATHEMATICS**...is designed to review and develop fundamental concepts of mathematics pertinent to the areas of: 1) arithmetic and algebra; 2) geometry and trigonometry; and 3) probability and statistics. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent

**EMS FUNDAMENTALS**...provides comprehensive knowledge of EMS systems, safety, well-being, legal issues and ethical issues with intended outcome of improving EMS personnel, patients and the community. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITES: 10531102 EMT Basic or 30531301 EMT Part 1

**EMS OPERATIONS**...provides the knowledge of operational roles and responsibilities to ensure patient, public and EMS personnel safety. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531918 Advanced Emergency Resuscitation

**GENERAL ANATOMY AND PHYSIOLOGY**...examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. PREREQUISITE: 10806134 General Chemistry or equivalent

**INTRODUCTION TO ETHICS: THEORY AND APPLICATION**...provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and/or professional standards of behavior, and apply a systematic decision-making process to these situations. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**MEDICAL EMERGENCIES**...provides the student the skills to integrate assessment findings with principles of anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and implement a treatment plan for an acutely injured patient. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531918 Advanced Emergency Resuscitation

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PARAMEDIC CAPSTONE**...provides the final opportunity to incorporate knowledge and skills through labs and scenario-based practice and evaluations prior to taking the NREMT written and practical exams. CONDITION: 105311 Paramedic Tech or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531922 EMS Operations

**PARAMEDIC CARDIOLOGY 1**...provides the principles of cardiovascular anatomy, physiology, epidemiology, and pathophysiology to formulate a field impression and a plan for a patient with a cardiovascular complaint. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531915 Paramedic Respiratory Management

**PARAMEDIC CARDIOLOGY 2**...continues the paramedic's knowledge of cardiology. Incorporates basic and advanced electrocardiogram rhythm interpretation as well as introduces students to Advanced Cardiovascular Life Support (ACLS).

**PARAMEDIC CLINICAL 1**...allows paramedics their first experiences providing advanced level skills and assessments on patients in a healthcare setting. Students will be assigned to an area hospital to begin their clinical training and meeting their assigned clinical competencies. Activities may include rotations within hospital emergency departments, operating rooms, intensive care units, and/or rotations with lab or respiratory staff. COREQUISITE: 10531911 EMS Fundamentals and CONDITION: 15311 Paramedic Technician or 105312 Fire Medic or 315311 EMT Paramedic program admission requirements met

**PARAMEDIC CLINICAL 2**...provides student with the opportunity to enhance their learning through the skills practice in a health care environment experience with actual patients under the supervision of approved preceptors or high-fidelity human patient simulator. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic Program Requirements Met and COREQUISITE: 10531930 Paramedic Clinical 1

**PARAMEDIC FIELD CLINICAL**...provides student with the opportunity to enhance their learning through the practice in the prehospital environment with actual patients under the supervision of approved preceptors. Students will be assigned to an area Paramedic ambulance service provider to incorporate their previously acquired capabilities into prehospital patient care. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic Program Requirements Met and COREQUISITE: 10531918 Advanced Emergency Resuscitation

**PARAMEDIC HPS LAB 3**...provides instruction for continued growth for paramedic students towards mastery in patient assessment, treatment, team management, and ambulance operations during this capstone Human Patient Simulation experience.

**PARAMEDIC HUMAN PATIENT SIMULATION LAB 1**...reinforces student learning through the practice of paramedicine in a controlled environment utilizing high-fidelity human patient simulators and realistic emergency response scenarios with support and guidance of instructors. The student will apply assessment knowledge and demonstrate paramedic level skills in a variety of emergency response scenarios and environments.

**PARAMEDIC HUMAN PATIENT SIMULATION LAB 2**...reinforces student learning through the practice of paramedicine in a controlled environment utilizing high-fidelity human patient simulators and realistic emergency response scenarios with support and guidance of instructors. The student will evaluate patient presentations, formulate treatment plans, reassess interventions, and implement corrective actions by integrating pathophysiological principles and assessment findings. CONDITION: 105311 Paramedic Technician or 105312 Fire Medic or 315311 EMT Paramedic program admission requirements met

**PARAMEDIC INTERNSHIP**...demonstrates to paramedic students their team leadership capabilities while assessing, formulating treatments plans, and delegating tasks to their EMS team members. Students will be assigned to an area paramedic ambulance service to complete requirements during this capstone field internship.

**PARAMEDIC MEDICAL PRINCIPLES**...provides the knowledge of anatomy, physiology and pathophysiology of major human systems while also introducing the students to shock, immunology and bleeding. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531911 EMS Fundamentals

**PARAMEDIC RESPIRATORY MANAGEMENT**...provides specific knowledge pertaining to the respiratory system and to ensure the student is prepared to formulate a field impression and implement a comprehensive treatment plan for a respiratory complaint. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531914 Advanced Prehospital Pharmacology

**PARAMEDIC TRAUMA**...provides the student the skills to integrate assessment findings with principles of anatomy, physiology, epidemiology and pathophysiology to formulate a field impression and implement a treatment plan for an acutely injured patient. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531919 Paramedic Medical Emergencies

**SPECIAL PATIENT POPULATIONS**...provides the student the skills to integrate assessment findings with principles of anatomy, physiology, epidemiology and pathophysiology to formulate a field impression and implement a treatment plan for patient with special needs. CONDITION: 105311 Paramedic Technician or 315311 EMT Paramedic or 105312 Fire Medic program requirements met and COREQUISITE: 10531920 Paramedic Trauma

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

**Program Number 10-536-1**  
**Associate Degree in Applied Science • Four Terms**

### ABOUT THE PROGRAM

The Associate Degree in Pharmacy Services Management prepares individuals to advance their roles as Pharmacy Technicians or to transition into related roles in the work place. Pharmacy Technicians are able to provide a wide range of duties in the pharmacy, and will enhance their technical skills through additional knowledge in third party payment processing and related reimbursement issues, staff scheduling processes, customer service, and enhancing store sales. Marketing, management, and business operations are also introduced in this degree. The program culminates in a capstone course that provides the student with the opportunity to apply their education to a real-life situation through increasing store sales, creating efficient operations, improving management practices, or enhancing service to patients. Graduates will find positions as Senior Pharmacy Technicians, Assistant Store Managers, Trainers, Pharmacy Technician Managers, and many related positions in hospital or retail pharmacies or related organizations.

### PROGRAM OUTCOMES

- Perform all pharmacy technician functions.
- Incorporate into practice professional ethics, laws, regulations, and policies established by the licensing state and regulatory agencies (Pharmacy Examining Board, FDA, DEA).
- Pursue lifelong professional growth and development through self-directed learning, participation in professional organizations, and continuing education.
- Maintain an awareness of developments in the pharmacy and management fields as they relate to job responsibilities.
- Manage human resources and employee development.
- Resolve conflict and build teams.
- Implement a mission and goals.
- Demonstrate critical thinking and problem solving skills.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete health requirements.
  - Complete Pharmacy Technician Program Handbook form.
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### CONTACT

LTC Career Coach  
 920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10501101	Medical Terminology	3
10501102	Health Insurance and Reimbursement	3
10536110	Pharmaceutical Calculations	3
10536113	Pharmacy Business Applications	3
10536115	Pharmacy Law	2
10536120	Fundamentals of Reading Prescriptions	1
10536122	Pharmacology	3
		<b>18</b>
<b>Term 2</b>		
10536125	Pharmacy Drug Distribution Systems	2
10536126	Pharmacy Parenteral Admixtures	3
10801196	Oral/Interpersonal Communication	3
10809198	Introduction to Psychology	3
10536143	Pharmacy Hospital Clinical OR 10536142	2
	Pharmacy Community Clinical-Adv (2 cr)	
10536141	Pharmacy Computer Lab	2
10536138	Pharmacy Community Clinical	2
		<b>17</b>
<b>Term 3</b>		
10104102	Principles of Marketing OR 10182108	3
	Purchasing	
10801195	Written Communication OR 10801141	3
	Introduction to Mass Communications OR	
	10801136 English Composition 1	
10804123	Math with Business Applications	3
10809195	Economics	3
10809196	Introduction to Sociology	3
		<b>15</b>
<b>Term 4</b>		
10182102	Service Operations Management OR	3
	10102110 Introduction to Business (3 cr)	
10196191	Supervision	3
10536150	Advanced Pharmacy Services Applications	3
10809166	Introduction to Ethics: Theory & Application	3
	OR 10809172 Introduction to Diversity	
	Studies	
		<b>12</b>
		<b>TOTAL 62</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**ADVANCED PHARMACY SERVICES APPLICATIONS...**allows the learner to integrate skills learned in the Pharmacy Services Management courses and apply them to the pharmacy workplace. Areas include staff training, development, supervision, and scheduling; customer service; PBM processing and claims rejection management; and improving efficiency of operations, maximizing profits, and increasing sales. PREREQUISITE: All courses in the Associate Degree plan need to be completed prior to this course. PREREQUISITES: 10536143 Pharmacy Hospital Clinical and 10536139 Pharmacy Community Clinical and CONDITION: 105361 Pharmacy Services Mng

**ECONOMICS...**provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**FUNDAMENTALS OF READING PRESCRIPTIONS...**prepares the learner to work in a community or hospital pharmacy by exploring the role of a pharmacy technician within the healthcare team; examining each step in the prescription filling process; and identifying the key top 200 drugs by brand and generic name and therapeutic class. CONDITION: 315361 Pharmacy Technician or 105361 Pharmacy Services Management Admission Requirements Met and Reading placement assessment equi

**HEALTH INSURANCE AND REIMBURSEMENT...**provides the learner with an understanding of the various types of insurance and managed care plans, and the cycle of medical claims processing. The learner will review cases, develop critical thinking skills in analyzing information, and selecting processes for reimbursement success.

**INTRODUCTION TO ETHICS: THEORY AND APPLICATION...**provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and/or professional standards of behavior, and apply a systematic decision-making process to these situations. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**MARKETING, PRINCIPLES OF...**introduces student to the consumer decision process model, the bases used to segment a market, basic concepts about goods, services, and ideas, the nature of supply chain & distribution, integrated marketing communications, and the stages of the product life cycle and their impact on the marketing mix.

**MATH WITH BUSINESS APPLICATIONS...**covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**MEDICAL TERMINOLOGY...**focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PHARMACEUTICAL CALCULATIONS...**prepares the learner to enlarge and reduce formulas and solve proportions, dilutions, alligations, and other calculations pertinent to the preparation of pharmaceuticals using metric, apothecary, avoirdupois, and household measuring systems. CONDITION: 315361 Pharmacy Technician or 105361 Pharmacy Services Management or 195316 Employed Pharmacy Technician Admission Requirements Met and Math placement assessment equivalent

**PHARMACOLOGY...**enhances the learner's ability to act and react appropriately in the pharmacy by learning how drugs work through examination of the anatomy, physiology, pathophysiology, and drug therapy for each of the major systems. CONDITION: 315361 Pharmacy Technician or 105361 Pharmacy Services Management or 615361 Community Retail Pharmacy Technician or 195361 Employed Pharmacy Technician admissions requirements met and Reading placement assessment equivalent

**PHARMACY BUSINESS APPLICATIONS...**prepares the learner to utilize pharmaceutical business terminology, procedures, customer service, record keeping, purchasing procedures, inventory control systems, pricing, merchandising, reference materials, ethics, roles, responsibilities, and relationships with patients and coworkers. CONDITION: 315361 Pharmacy Technician or 105361 Pharmacy Services Management program requirements met and Reading placement assessment equivalent

**PHARMACY COMMUNITY CLINICAL...**provides hands-on experience in a community pharmacy for 108 hours during quarter two. Areas of instruction include interpretation of prescriptions, entering prescriptions on computer, patient profiles, correctly filling and labeling prescriptions, billing patient and third parties, customer service, over-the-counter medications, purchasing, checking in deliveries, and inventory control, compounding and patient confidentiality. PREREQ: 10536120 Fund of Rdg Prescr, 10536113 Pharm Bus Appls, 10501102 Hlth Ins & Reim, and 10536110 Pharm Calc, and CONDITION: 315361 Pharmacy Tech, 105361 Pharmacy Services Mgmt or 615361 Community Retail Pharmacy Tech admission requirements met

**PHARMACY COMPUTER LAB...**expands the learner's ability to enter prescription orders and familiarizes learner with a variety of pharmacy software features, including updating pharmacy data bases, running reports, and billing. This course is offered in a self-paced format. PREREQUISITES: 10536120 Fundamentals of Reading Prescriptions and CONDITION: 315361 Pharmacy Technician or 105361 Pharmacy Services Management Admissions Requirements Met

**PHARMACY DRUG DISTRIBUTION SYSTEMS...**is an introductory study of the basic drug distribution systems used in community and institutional pharmacy, including automation technology, pharmacist and pharmacy technician roles, and dispensing considerations. CONDITION: 315361 Pharmacy Technician or 105361 Pharmacy Services Management Admission Requirements Met

**PHARMACY HOSPITAL CLINICAL...**provides the learner with the skills to prepare parenteral admixtures, fill medication carts and unit-dose drawers, control inventory, package medications, and maintain patient records in the hospital setting. PREREQUISITES: 10536110 Pharmacy Calc; COREQUISITES: 10536138 Pharmacy Community Clinical, 10536141 Pharmacy Computer Lab; 10536126 Pharmacy Parenteral Admixtures and CONDITION: 315361 Pharmacy Tech or 105361 Pharmacy Svcs Management Admission Req met

**PHARMACY LAW...**introduces the learner to federal and state regulations that apply to pharmacy practice. CONDITION: 315361 Pharmacy Technician or 105361 Pharmacy Services Management or 195361 Employed Pharmacy Technician admissions requirements met and Reading placement assessment equivalent

**PHARMACY PARENTERAL ADMIXTURES...**provides the learner with the skills to utilize aseptic technique in vertical and horizontal laminar flow hoods for preparation of solutions and medications to be administered intravenously, intramuscularly, subcutaneously, and intradermally to patients. CONDITION: 315361 Pharmacy Technician or 105361 Pharmacy Services Management or 195361 Employed Pharmacy Technician Admission Requirements Met

**SERVICE OPERATIONS MANAGEMENT...**introduces the student to the basic coverage of the concepts and current issues in service operation management. Topics include the value equation in operations management; understanding services; building the service system; operating the service system; enterprise resource management (ERP) and supply chain management concepts in the service sector.

**SUPERVISION...**allows the learner to apply the skills and tools necessary to perform the functions of a frontline leader. Students learn the application of strategies and transition to a contemporary supervisory role including day-to-day operations, controlling, staffing, leadership, problem-solving, team skills, motivation, and training.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 31-536-1 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

If you're ill or injured, you have access to an enormous variety of therapeutic medications, and you trust your pharmacy to correctly interpret and fill your prescriptions. Pharmacy technicians contribute to our safety by assisting pharmacists in a variety of technical tasks. If you're attentive to detail, organized, a good communicator, and like math, science, and working with people, a career as a pharmacy technician may be your prescription for success.

### PROGRAM OUTCOMES

- Demonstrate personal/interpersonal knowledge and skills in the practice of pharmacy.
- Demonstrate foundational professional knowledge and skills for the practice of pharmacy.
- Prepare prescriptions/medication orders and pharmaceutical products for dispensing, distribution, and disposal.
- Compound sterile and nonsterile medications.
- Follow established policies and procedures for procurement, billing, reimbursement and inventory management.
- Utilize pharmacy technology and informatics.
- Adhere to state and federal regulations governing the practice of pharmacy.
- Apply the principles of quality assurance to the practice of pharmacy.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet math requirements (Math Accuplacer score of 237; Math ACT score of 16; completion of high school math course with a grade of C or higher).
  - Complete health requirements.
  - Complete Pharmacy Technician Program Handbook form.
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

- LTC offers its Pharmacy Technician program in cooperation with technical colleges across the state. As a pharmacy technician student, you'll attend live, interactive TV classes sent from LTC to your local technical college; receive laboratory training in local pharmacies; participate in real-world, hands-on training during a 16-week clinical program; and take general studies classes at your local technical college.
- The Pharmacy Technician program conducted at Lakeshore Technical College, Cleveland, WI is accredited by the American Society of Health-System Pharmacists.

### RELATED PROGRAMS

- Pharmacy Services Management Associate Degree

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10501101	Medical Terminology	3
10501102	Health Insurance and Reimbursement	3
10536110	Pharmaceutical Calculations	3
10536113	Pharmacy Business Applications	3
10536115	Pharmacy Law	2
10536120	Fundamentals of Reading Prescriptions	1
10536122	Pharmacology	3
		<b>18</b>
<b>Term 2</b>		
10536125	Pharmacy Drug Distribution Systems	2
10536126	Pharmacy Parenteral Admixtures	3
10801196	Oral/Interpersonal Communication	3
10536143	Pharmacy Hospital Clinical OR 10536142	2
	Pharmacy Community Clinical-Adv (2 cr)	
10536141	Pharmacy Computer Lab	2
10536138	Pharmacy Community Clinical OR	2
	10536144 Pharmacy Community Clinical Internship (2 cr)	
		<b>14</b>
		<b>TOTAL 32</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**FUNDAMENTALS OF READING PRESCRIPTIONS**...prepares the learner to work in a community or hospital pharmacy by exploring the role of a pharmacy technician within the healthcare team; examining each step in the prescription filling process; and identifying the key top 200 drugs by brand and generic name and therapeutic class. **CONDITION:** 315361 Pharmacy Technician or 105361 Pharmacy Services Management Admission Requirements Met and Reading placement assessment equiv

**HEALTH INSURANCE AND REIMBURSEMENT**...provides the learner with an understanding of the various types of insurance and managed care plans, and the cycle of medical claims processing. The learner will review cases, develop critical thinking skills in analyzing information, and selecting processes for reimbursement success.

**MEDICAL TERMINOLOGY**...focuses on the component parts of medical terms: prefixes, suffixes and word roots. Students practice formation, analysis and reconstruction of terms. Emphasis on spelling, definition and pronunciation. Introduction to operative, diagnostic, therapeutic and symptomatic terminology of all body systems, as well as systemic and surgical terminology.

**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:** 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PHARMACEUTICAL CALCULATIONS**...prepares the learner to enlarge and reduce formulas and solve proportions, dilutions, alligations, and other calculations pertinent to the preparation of pharmaceuticals using metric, apothecary, avoirdupois, and household measuring systems. **CONDITION:** 315361 Pharmacy Technician or 105361 Pharmacy Services Management or 195316 Employed Pharmacy Technician Admission Requirements Met and Math placement assessment equivalent

**PHARMACOLOGY**...enhances the learner's ability to act and react appropriately in the pharmacy by learning how drugs work through examination of the anatomy, physiology, pathophysiology, and drug therapy for each of the major systems. **CONDITION:** 315361 Pharmacy Technician or 105361 Pharmacy Services Management or 615361 Community Retail Pharmacy Technician or 195361 Employed Pharmacy Technician admissions requirements met and Reading placement assessment equivalent

**PHARMACY BUSINESS APPLICATIONS**...prepares the learner to utilize pharmaceutical business terminology, procedures, customer service, record keeping, purchasing procedures, inventory control systems, pricing, merchandising, reference materials, ethics, roles, responsibilities, and relationships with patients and coworkers. **CONDITION:** 315361 Pharmacy Technician or 105361 Pharmacy Services Management program requirements met and Reading placement assessment equivalent

**PHARMACY COMMUNITY CLINICAL**...provides hands-on experience in a community pharmacy for 108 hours during quarter two. Areas of instruction include interpretation of prescriptions, entering prescriptions on computer, patient profiles, correctly filling and labeling prescriptions, billing patient and third parties, customer service, over-the-counter medications, purchasing, checking in deliveries, and inventory control, compounding and patient confidentiality. **PREREQ:** 10536120 Fund of Rdg Prescr, 10536113 Pharm Bus Appls, 10501102 Hlth Ins & Reim, and 10536110 Pharm Calc, and **CONDITION:** 315361 Pharmacy Tech, 105361 Pharmacy Services Mgmt or 615361 Community Retail Pharmacy Tech admission requirements met

**PHARMACY COMPUTER LAB**...expands the learner's ability to enter prescription orders and familiarizes learner with a variety of pharmacy software features, including updating pharmacy data bases, running reports, and billing. This course is offered in a self-paced format. **PREREQUISITES:** 10536120 Fundamentals of Reading Prescriptions and **CONDITION** 315361 Pharmacy Technician or 105361 Pharmacy Services Management Admissions Requirements Met

**PHARMACY DRUG DISTRIBUTION SYSTEMS**...is an introductory study of the basic drug distribution systems used in community and institutional pharmacy, including automation technology, pharmacist and pharmacy technician roles, and dispensing considerations. **CONDITION:** 315361 Pharmacy Technician or 105361 Pharmacy Services Management Admission Requirements Met

**PHARMACY HOSPITAL CLINICAL**...provides the learner with the skills to prepare parenteral admixtures, fill medication carts and unit-dose drawers, control inventory, package medications, and maintain patient records in the hospital setting. **PREREQUISITES:** 10536110 Pharmacy Calc; **COREQUISITES:** 10536138 Pharmacy Community Clinical, 10536141 Pharmacy Computer Lab; 10536126 Pharmacy Parenteral Admixtures and **CONDITION** 315361 Pharmacy Tech or 105361 Pharmacy Svcs Management Admission Req met

**PHARMACY LAW**...introduces the learner to federal and state regulations that apply to pharmacy practice. **CONDITION:** 315361 Pharmacy Technician or 105361 Pharmacy Services Management or 195361 Employed Pharmacy Technician admissions requirements met and Reading placement assessment equivalent

**PHARMACY PARENTERAL ADMIXTURES**...provides the learner with the skills to utilize aseptic technique in vertical and horizontal laminar flow hoods for preparation of solutions and medications to be administered intravenously, intramuscularly, subcutaneously, and intradermally to patients. **CONDITION:** 315361 Pharmacy Technician or 105361 Pharmacy Services Management or 195361 Employed Pharmacy Technician Admission Requirements Met

**Program Number 50-427-5  
5-Year Contract**

**Work Hours (including related instruction): 8000  
Related Instruction Hours: 572 • Night School Hours: 260**

### ABOUT APPRENTICESHIP

Apprenticeships are employer-sponsored training programs. You must have a contract before being invited to school. A special application process is used for these programs. Please contact the Apprenticeship Office for the proper forms. Apprenticeship means you earn while you learn. If you want a career in a skilled trade, apprenticeship is the best way to get there. You'll combine on-the-job training with on-campus learning—you'll have the best of both worlds when it comes to learning the skills you need to get ahead. And even better, you'll earn a paycheck while you learn those skills.

### ABOUT THE CAREER

Imagine a home or business without a plumbing system—drinking a cool glass of water, cooking, and showering would be an inconvenience at best. Plumbing systems and those who install, repair, and maintain them are critical to the building process. The Plumbing Apprenticeship program is an employer-sponsored, hands-on training program under the direction of a master plumber. If you're looking for a specialized career that's always in demand, becoming a journey-level plumber is an excellent choice.

### CAREERS

Graduates of LTC's Plumbing Apprenticeship program are required to take and pass the journey-level license exam provided by the Department of Commerce before working as journey-level or master plumbers in a variety of residential or commercial settings.

### CONSTRUCTION APPRENTICE APPLICATION REQUIREMENTS

- Apprentice Application
- Proof of Age
- Accuplacer Entrance Assessment
- High School Transcripts or Equivalent
- Advisory Committee Interview

### PROGRAM OUTCOMES

- Apply state plumbing code requirements to the installation and repair of sanitary drain systems.
- Apply state plumbing code requirements to the installation and repair of venting systems.
- Apply state plumbing code requirements to the installation and repair of water supply systems.
- Apply state plumbing code requirements to the installation and repair of storm drain systems.
- Apply state plumbing code requirements to the installation and repair of POWTS systems.
- Refer to the Wisconsin Administrative Plumbing codes.
- Prepare for Journey level licensure examination

### APPROXIMATE COSTS

Contact the LTC Apprenticeship Office or visit [www.gotoltc.edu/apprenticeship](http://www.gotoltc.edu/apprenticeship) for detailed information.

### MINIMUM PLACEMENT SCORES

Accuplacer: Arithmetic-66, Reading-66, Elementary Algebra-33  
ACT: Mathematics-15, Reading-16

### SPECIAL NOTE

Upon completion of the apprentice requirements, you'll be issued a Letter of Introduction, which states your requirements have been met. You'll use this Letter of Introduction to apply for work in the trade. You must have a sponsoring employer before receiving a contract and being invited to school. Apprentices registered by the Lake to Lake Plumbing Committee will attend paid-related instruction at Fox Valley Technical College.

### CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
50427751	Sanitary Drains 1	2
<b>Term 2</b>		
50427752	Vents and Venting Systems	2
<b>Term 3</b>		
50427753	Water Distribution 1	2
<b>Term 4</b>		
50427754	Water Distribution 2	2
<b>Term 5</b>		
50427755	Sanitary Drains 2	2
<b>Term 6</b>		
50427756	Private Onsite Wastewater Treatment Systems (POWTS)	2
<b>Term 7</b>		
50427757	Green Plumbing Applications	2
<b>Term 8</b>		
50427758	Plumbing Advanced Topics	2
		<b>TOTAL 16</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**GREEN PLUMBING APPLICATIONS...**provides plumbing apprentices with an introduction to green applications and prepares students to take certification exams. Union Programs: UA Green Awareness Certification (geared toward journey workers, not apprenticeship); WTCS Programs: Green Plumbers USA Certification Program. Learning materials from both certificate programs have been incorporated into the development of this course as appropriate. CONDITION: 504275 Plumbing Apprentice requirements met

**PLUMBING ADVANCED TOPICS...**provides the apprentice with the opportunity to select and complete an applied plumbing project in collaboration with the instructor. Projects will apply the skills required to identify, design, install, and service various plumbing applications that are listed in plumbing codes. Apprentices will use the code language and tables in accordance with the Wisconsin Plumbing Code. This course builds upon the theory, work experience, and the application of plumbing code principles. CONDITION: 504275 Plumbing Apprentice requirements met

**PRIVATE ONSITE WASTEWATER TREATMENT SYSTEM...**provides the apprentice with the skills to identify, design, install, and service various applications for private onsite wastewater treatment systems that are listed in plumbing codes or individual component manuals. Apprentices will use the code language and tables in various plumbing systems in accordance with the Wisconsin Plumbing Code. Other topics include pretreatment, soil evaluation, site planning, and new technologies. CONDITION: 504275 Plumbing Apprentice requirements met

**SANITARY DRAINS 1...**provides plumbing-related instruction of sanitary drain systems. Course includes a review of codes and trade practices related to sanitary drains and drainage. CONDITION: 504275 Plumbing Apprentice requirements met

**SANITARY DRAINS 2...**provides the apprentice with the skills to identify, design, install, and service various applications for storm water, clear water, and drainage systems. Apprentices will use the code language and tables in various plumbing systems in accordance with the Wisconsin Plumbing Code. The course focuses on theory, work experience, and the application of plumbing code principles through discussions, drawing exercises, work sheets, and evaluations. CONDITION: 504275 Plumbing Apprentice requirements met

**VENTS AND VENTING SYSTEMS...**is designed to provide the apprentice with the skills to identify and design sanitary vent piping in a plumbing system in accordance with the Wisconsin Plumbing Code. This course focuses on theory, work experience, and the application of plumbing code principles through discussions, drawing exercises, work sheets, and evaluations. CONDITION: 504275 Plumbing Appr requirements met

**WATER DISTRIBUTION 1...**provides the apprentice with the skills to identify, design, install and service various applications for water supply systems that are listed in plumbing codes. Apprentices will use the code language and tables in various plumbing systems in accordance with the Wisconsin Plumbing Code. Course topics include commercial to single family and private well pump systems. The course focuses on theory, work experience, and the application of plumbing code principles through discussion. CONDITION: 504275 Plumbing Apprentice requirements met

**WATER DISTRIBUTION 2...**provides the apprentice with the skills to identify, design, install and service cross-connection controls, water treatment equipment, and multipurpose piping systems in accordance with the Wisconsin Plumbing Code. The course focuses on theory, work experience, and the application of plumbing code principles through discussions, drawing exercises, work sheets, and evaluations. CONDITION: 504275 Plumbing Apprentice requirements met

**Program Number 31-543-1  
Technical Diploma**

**ABOUT THE PROGRAM**

If you're ill or injured, it's comforting to know you're in the care of highly skilled, well-educated healthcare professionals. If you work well under pressure; like math, science, communications, and problem solving; are independent; and have a strong desire to work with and help people—a career as a practical nurse may be the choice for you.

**PROGRAM OUTCOMES**

- Implement one's role as a nurse in ways that reflect integrity, responsibility, ethical practices, and an evolving identity as a nurse committed to caring, advocacy, and quality care while adhering to evidence-based practice.
- Demonstrate appropriate written, verbal, and nonverbal communication in a variety of clinical contexts.
- Integrate knowledge of social, mathematical, and physical sciences, pharmacology, and disease processes while participating in clinical decision making.
- Provide patient centered care under supervision by participating in the nursing process across diverse populations and health care settings.
- Minimize risk of harm to patients, members of the health care team, and self through safe individual performance and participation in system effectiveness.
- Collaborate as an active member of the multidisciplinary health care team to provide effective patient care throughout the lifespan.
- Use information and technology to communicate, manage data, mitigate error, and support decision making.

**CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES**

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer). Graduates may Bridge into third semester of Associate Degree in Nursing program.

**ADMISSION TO DO'S**

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

**CLASS REGISTRATION TO DO'S**

- Complete an assessment for placement (Accuplacer or ACT).
- Complete and submit Functional Abilities Statement of Understanding form.
- Read the Nursing Program Handbook and submit the signed signature page.
- Complete a program advising session with your advisor.

**PROGRAM READY TO DO'S**

- Pass HESI (Health Occupations Entrance assessment) with a 70% or higher.
- Complete and submit health form.
- Meet math requirement for Nursing (Accuplacer score of 263 or college level math).

**APPROXIMATE COSTS**

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

**FINANCIAL AID**

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

**SPECIAL NOTE**

- Nursing Assistant skills must be attained within one semester prior to starting clinicals.
- CPR BLS Healthcare Provider certification is required prior to starting clinicals.
- In order to facilitate the evening hours, the theory classes will extend to a 17 week semester in the final term of the program.
- The WI Board of Nursing has given LTC authorization to admit students to this program.
- This program is accredited by the Accreditation Commission for Education in Nursing, 3343 Peachtree Road N.E., Suite 850, Atlanta, Georgia 30326, 404-975-5000 Fax 404-975-5020. [www.acenursing.org](http://www.acenursing.org)

**CONTACT**

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Days	Credit(s)
<b>Term 1 (Fall)</b>			
10809188	Developmental Psychology		3
10801195	Written Communication OR 10801136 English Composition 1 (3 cr)		3
<b>6</b>			
<b>Term 2 (Spring)</b>			
10806103	Body Structure and Function OR 10806177 General Anatomy & Physiology (4 cr)		3
10801196	Oral/Interpersonal Communications		3
<b>6</b>			
<b>Term 3 (Summer)</b>			
31543301	Nursing Fundamentals		2
<b>2</b>			
<b>Term 4 (Fall)</b>			
31543302	Nursing Skills		3
31543303	Nursing Pharmacology		2
31543304	Nsg: Intro Clinical Practice		2
<b>7</b>			
<b>Term 5 (Spring)</b>			
31543305	Nursing Health Alterations*		3
31543306	Nursing Health Promotions*		3
31543307	Nsg: Clinical Care Across Lifespan		2
31543308	Nsg: Intro Clinical Care Management		2
<b>10</b>			
<b>TOTAL 31</b>			
Recommended Support Courses:			
31804350	Math for Nursing <i>(Recommended in Summer Term)</i>		2

\*Begins prior to start of semester

Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.



**BODY STRUCTURE AND FUNCTION...**introduces the learner to the structures and functions of the integumentary, musculoskeletal, nervous, sensory, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**DEVELOPMENTAL PSYCHOLOGY...**introduces the student to the study of human development throughout the lifespan. This course explores developmental theory and research with an emphasis on the interactive nature of the biological, cognitive, and psychosocial changes that affect the individual from conception to death. Application activities and critical thinking skills will enable students to gain an increased knowledge and understanding of themselves and others. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**NSG: CLIN CARE ACROSS LIFESPAN...**applies nursing concepts and therapeutic interventions to clients across the lifespan. It also provides an introduction to concepts of teaching and learning. Extending care to include the family is emphasized. Student must have completed all first semester and general education courses. Student needs a current TB test, flu vaccine, and professional AHA CPR card (1 and 2 person, adult, infant, and child, AED). Course requires a minimum grade of "C" or better. COREQUISITE: 31543306 Nursing Health Promotion

**NSG: INTRO CLINICAL CARE MGT...**applies nursing concepts and therapeutic nursing interventions to groups of clients across the lifespan. It also provides an introduction to leadership, management, and teambuilding. Student must have completed all first semester and general education courses. Student needs a current TB test, flu vaccine, and professional AHA CPR card (1 and 2 person, adult, infant, and child, AED). Course requires a minimum grade of "C" or better. COREQUISITE: 31543305 Nursing Health Alterations

**NSG: INTRO CLINICAL PRACTICE...**is an introductory clinical course that emphasizes basic nursing skills and application of the nursing process in meeting the needs of diverse clients across the lifespan. Emphasis is placed on performing basic nursing skills, the formation of nurse-client relationships, communication, data collection, documentation, and medication administration. Student needs a current TB test, flu vaccine, and professional AHA CPR card (1 and 2 person, adult, infant, and child, AED). Student needs to be admitted to the Practical Nursing program. Course requires a minimum grade of "C" or better. CONDITION: 315431 Practical Nursing Admissions Requirements Met; and COREQUISITE: 31543301 Nursing Fundamentals and 31543302 Nursing Skills and 31543303 Nursing Pharmacology

**NURSING FUNDAMENTALS...**focuses on basic nursing concepts to provide evidenced-based care to diverse patient populations across the lifespan. Current and historical issues impacting nursing will be explored within the scope of nursing practice. The nursing process will be introduced as a framework for organizing the care of patients. This course requires a minimum grade of "C" or better. PREREQUISITE: 10809188 Developmental Psychology; and 10806103 Body Structure & Function OR 10806177 Gen Anatomy & Physiology; and 10801195 Written Comm OR 10801136 English Comp 1; and 10801196 Oral/Interpersonal Comm and CONDITION: 315431 Practical Nursing Admission Requirements met.

**NURSING HEALTH ALTERATIONS...**elaborates upon the basic concepts of health and illness as presented in Nursing Fundamentals. It applies theories of nursing in the care of clients through the lifespan, utilizing problem solving and critical thinking. This course will provide an opportunity to study conditions affecting different body systems and apply evidence-based nursing interventions. It will also introduce concepts of leadership and management. Course requires a minimum grade of "C" or better. PREREQUISITE: 31543301 Nrsrg Fund and 31543302 Nrsrg Skills and 31543304 Nrsrg: Intro to Clin Practice.

**NURSING HEALTH PROMOTION...**focuses on topics related to health promotion in for individuals and families throughout the lifespan. We will cover nursing care of the developing family, which includes reproductive issues, pregnancy, labor and delivery, post-partum, the newborn, and the child. Recognizing the spectrum of healthy families we will discern patterns associated with adaptive and maladaptive behaviors applying mental health principles. An emphasis is placed on teaching and supporting healthy lifestyle choices for individuals of all ages. Nutrition, exercise, stress management, empowerment, and risk reduction practices are highlighted. Study of the family will cover dynamics, functions, discipline styles, and stages of development. Course requires a minimum grade of "C" or better. PREREQUISITE: 31543301 Nrsrg Fund and 31543303 Nrsrg Pharm and 31543304 Nrsrg Intro Clin Pract.

**NURSING PHARMACOLOGY...**introduces the principles of pharmacology, including drug classifications and their effects on the body. Emphasis is on the use of the components of the nursing process when administering medications. Student must be admitted to the Practical Nursing program. Course requires a minimum grade of "C" or better. Do not register for this class until you are assigned a clinical slot in 543-304 in current or next semester. PREREQUISITE: 10809188 Developmental Psychology; and 10806103 Body Structure & Function OR 10806177 Gen Anatomy & Physiology; and 10801195 Written Comm OR 10801136 English Comp 1; and 10801196 Oral/Interpersonal Comm; and CONDITION: Practical Nursing Adm Requirements Met.

**NURSING SKILLS...**focuses on development of evidence-based clinical skills and physical assessment across the lifespan. Content includes mathematical calculations and conversions related to clinical skills. In addition the course includes techniques related to obtaining a health history and basic physical assessment skills using a body systems approach. This course requires a minimum grade of "C" or better. PREREQUISITE: 10809188 Developmental Psychology; and 10806103 Body Structure & Function OR 10806177 Gen Anatomy & Physiology; and 10801195 Written Comm OR 10801136 English Comp 1; and 10801196 Oral/Interpersonal Comm; and CONDITION: 315431 Practical Nursing Admissions Requirements Met.

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## ABOUT THE PROGRAM

Quality Assurance is a program for the systematic monitoring and evaluation of the various aspects of a project, service, or facility to ensure that standards of quality are being met. In simple business terms, quality assurance is the difference between success and failure. If you believe in the idea of “quality in, quality out,” and you want to play a vital role in helping an organization achieve success through quality, LTC’s Quality Assurance Technician program is the way to realize your goal.

## PROGRAM OUTCOMES

- Understand total quality control concepts, inspection methods, data collection, application of sampling plans, quality cost, and quality audits.
- Utilize mathematical calculations, including metric conversions, geometry, trigonometry, and basic and advanced statistical process control techniques.
- Understand and apply Lean Six Sigma concepts of continuous improvement.
- Understand quality systems used currently in industry. These systems include, ISO 9000, Malcolm Baldrige, and Deming Prize.
- Plan quality audits to assure quality systems are working and take corrective action through continuous improvement.

## CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

## ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

## PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

## APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

## FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

## CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10103191	Word - Level 1	1
10103121	Excel - Level 1	1
10182131	Supply Chain Management	3
10623101	Quality Concepts	3
10623118	Lean Manufacturing Overview	3
10801195	Written Communication OR 10801136 English Composition 1	3
10809198	Introduction to Psychology OR 10809188 Developmental Psychology	3
		<b>17</b>
<b>Term 2</b>		
10809166	Intro to Ethics OR 10806112 Principles of Sustainability	3
10801198	Speech Or 10801196 Oral/Interpersonal Communication	3
10804123	Math with Business Applications	3
10623193	ISO 9001 Internal Auditor OR 10623195 ISO 9001 Concepts	3
10809195	Economics	3
		<b>15</b>
<b>Term 3</b>		
10101155	Accounting for Professionals	3
10105128	Personal Branding	2
10196188	Project Management	3
10623110	Lean Six Sigma - Measure and Analyze	4
10623111	Lean Sigma Tools - Improve & Control	4
		<b>16</b>
<b>Term 4</b>		
10182102	Service Operations Management	3
10623112	Lean Six Sigma - Implementation	3
10623114	Lean Six Sigma Tools - Black Belt	4
10623123	Blueprint Reading and Metrology	3
		<b>13</b>
		<b>TOTAL 61</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**ACCOUNTING FOR PROFESSIONALS**...is the study of the information that can be interpreted from financial statements. Students analyze financial statements and apply managerial accounting concepts in an accelerated format. PREREQUISITE: 10804123 Math w Business Apps or CONDITION: 101101 Paralegal program requirements met

**BLUEPRINT READING AND METROLOGY**...provides knowledge and skill in the understanding of quality measurement, quality measurement devices and their proper application. Quality measurement topics include precision, accuracy, control of variation, gage R/R, calibration techniques and blueprint/specification reading. The quality measurement devices portion of this course provides hands-on use of common measurement and test equipment.

**ECONOMICS**...provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**EXCEL - LEVEL 1**...introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**INTRODUCTION TO ETHICS: THEORY AND APPLICATION**...provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives will be used to analyze and compare relevant issues. Students will critically evaluate individual, social and/or professional standards of behavior, and apply a systematic decision-making process to these situations. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**ISO 9001 INTERNAL AUDITOR**...is designed to introduce participants to the current QS/ISO 9001 and ISO 19011 standards. The course is structured to provide a detailed review of the standards, how to document procedures, and how to perform audits. Students will practice preparation for and conducting audits in a local business. Successful completion of this course qualifies the student to receive the ISO 9001 Internal Auditor certificate (19-623-8)

**LEAN MANUFACTURING OVERVIEW**...expands the learner's ability to develop skills to prioritize and sequence work, execute work plans, implement controls, and create and analyze performance evaluations. It allows the student to explore the execution of quality initiatives and continuous improvement plans in addition to the control and handling of inventories.

**LEAN SIX SIGMA - IMPLEMENTATION**...introduces the student to the implementation of a six sigma project. Students apply the techniques used in prior Lean Six Sigma courses to a real problem in their place of employment. An emphasis is placed on team skills required to successfully implement the project. Skills demonstrated include project initiation, time management, and constraint management. Student final projects demonstrate their mastery of both DMAIC and Lean methodologies. PREREQUISITE: 10623111 Lean Six Sigma-Improve & Control

**LEAN SIX SIGMA - IMPROVE & CONTROL**...provides the student with the skills and tools to select and implement solutions to solve problems and improve processes. An emphasis is placed on the use of statistical techniques in solution selection including correlation, regression, and statistical process control. Lean manufacturing methods including SMED, POCUS, cellular manufacturing, mistake proofing, TPM, 5S and visual management are practiced. Students learn how to create a control plan. MiniTab skill expansion is included. COREQUISITE: 10623110 Lean Six Sigma -Measure & Analyze

**LEAN SIX SIGMA - MEASURE AND ANALYZE**...provides the student with skills and tools to collect and analyze data to solve problems and improve processes within an organization. Various techniques for process mapping are explored including SIPOC, FMEA, VSM, standard work sheets, and spaghetti diagrams. Statistical tools are explored including probability, confidence intervals, measurement systems analysis, hypothesis testing, and TAKT time analysis to create and implement a data collection plan. MiniTab introduction is included.

**LEAN SIX SIGMA TOOLS - BLACK BELT**...provides the student with the knowledge to achieve Lean Six Sigma - Black Belt. Students demonstrate additional proficiency in high level statistical analysis including reliability, hypothesis testing, ANOVA, DOE, failure rates and MTBF. Project management through the DMAIC process is examined. Students learn how to "build quality in" at the design stage by use of the concepts of design for six sigma (DFSS). Advanced lean tools are explored including 3P, Jidoka, and Heijunka. COREQUISITES: 10623112 Lean Six Sigma-Implementation

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**PERSONAL BRANDING**...focuses on the importance of developing a strong brand identity for yourself as a professional. As a prospective employee, you are constantly selling yourself from how you talk, walk, dress, your facial expressions, and your body language; people are always forming impressions of you. In this course, you will develop a professional resume, cover letter, practice interview skills, and learn the role of social media in career development.

**PROJECT MANAGEMENT**...introduces the learner to explore the relationship of existing and emerging processes and technologies to manufacturing strategy and supply chain-related functions. This course addresses three main topics: aligning resources with the strategic plan, configuring and integrating operating processes to support the strategic plan, and implementing change.

**QUALITY CONCEPTS**...provides an overview of quality systems, methods and analysis using Minitab software. Basic quality philosophies such as Deming's principles, continuous improvement, quality costs, supplier relations and inspection theory will be presented. The components of a basic quality system compatible with ISO 9000 and Six Sigma will be explored. Minitab software will be taught and utilized to collect and analyze data. Techniques such as pareto, trend analysis, histograms, cause and effect diagrams and corrective/preventive action techniques will be applied to the data in order to address problems and improve processes.

**SERVICE OPERATIONS MANAGEMENT**...introduces the student to the basic coverage of the concepts and current issues in service operation management. Topics include the value equation in operations management; understanding services; building the service system; operating the service system; enterprise resource management (ERP) and supply chain management concepts in the service sector.

**SPEECH**...explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and other essential elements of speaking successfully, including the listening process, form the basis of the course. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**SUPPLY CHAIN MANAGEMENT**...has been developed to provide a basic understanding of the planning and control of materials into, through, and out of organizations. In addition, those who want to become certified by APICS need a fundamentals course to learn about the material planning and control system. This course will provide a basis for further study leading to certification.

**WORD - LEVEL 1**...introduces the student to word processing features such as creating, saving, editing, navigating, and formatting the content of multi-page documents.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 31-623-2 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

This technical diploma, Quality Process Improvement, provides you with the basic skills for quality assurance work. This credential 'ladders' up to the full two-year associate degree, Quality Assurance Technician. Quality Assurance is a program for the systematic monitoring and evaluation of the various aspects of a project, service, or facility to ensure that standards of quality are being met. In simple business terms, quality assurance is the difference between success and failure. If you believe in the idea of "quality in, quality out," and you want to play a vital role in helping an organization achieve success through quality, LTC's Quality Process Improvement technical diploma is the way to get you started in this field.

### PROGRAM OUTCOMES

- Provides basic understanding of total quality control concepts, inspection methods, data collection, application of sampling plans, quality cost, and quality audits.
- Utilize mathematical calculations, including metric conversions, geometry, trigonometry, and basic and advanced statistical process control techniques.
- Provides basic understanding of Lean Six Sigma concepts of continuous improvement and provides you with the basic skills to apply these principles.
- Provides basic understanding of quality systems used currently in industry. These systems include, ISO 9000, Malcolm Baldrige, and Deming Prize.
- Assist in the planning of quality audits to assure quality systems are working and take corrective action through continuous improvement.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

This credential, the Quality Process Improvement technical diploma, is part of the quality assurance career pathway and can serve as a step to the higher credential, the Quality Assurance Technician Associate Degree. The associate degree provides further in-depth training in quality, management, and in "soft" skills.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10623101	Quality Concepts	3
10623110	Lean Six Sigma - Measure and Analyze	4
10623111	Lean Six Sigma - Improve & Control	4
10623123	Blueprint Reading and Metrology	3
		<b>14</b>
<b>Term 2</b>		
10623112	Lean Six Sigma - Implementation	3
10623193	ISO 9001 Internal Auditor OR 10623195	3
		ISO 9001 Concepts (3 cr)
10623118	Lean Manufacturing Overview	3
10801195	Written Communication OR 10801136	3
		English Composition 1 (3 cr)
		<b>12</b>
		<b>TOTAL 26</b>

## *Curriculum Modifications Pending State Approval*

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**BLUEPRINT READING AND METROLOGY**...provides knowledge and skill in the understanding of quality measurement, quality measurement devices and their proper application. Quality measurement topics include precision, accuracy, control of variation, gage R/R, calibration techniques and blueprint/specification reading. The quality measurement devices portion of this course provides hands-on use of common measurement and test equipment.

**ISO 9001 INTERNAL AUDITOR**...is designed to introduce participants to the current QS/ISO 9001 and ISO 19011 standards. The course is structured to provide a detailed review of the standards, how to document procedures, and how to perform audits. Students will practice preparation for and conducting audits in a local business. Successful completion of this course qualifies the student to receive the ISO 9001 Internal Auditor certificate (19-623-8)

**LEAN MANUFACTURING OVERVIEW**...expands the learner's ability to develop skills to prioritize and sequence work, execute work plans, implement controls, and create and analyze performance evaluations. It allows the student to explore the execution of quality initiatives and continuous improvement plans in addition to the control and handling of inventories.

**LEAN SIX SIGMA - IMPLEMENTATION**...introduces the student to the implementation of a six sigma project. Students apply the techniques used in prior Lean Six Sigma courses to a real problem in their place of employment. An emphasis is placed on team skills required to successfully implement the project. Skills demonstrated include project initiation, time management, and constraint management. Student final projects demonstrate their mastery of both DMAIC and Lean methodologies. PREREQUISITE: 10623111 Lean Six Sigma-Improve & Control

**LEAN SIX SIGMA - IMPROVE & CONTROL**...provides the student with the skills and tools to select and implement solutions to solve problems and improve processes. An emphasis is placed on the use of statistical techniques in solution selection including correlation, regression, and statistical process control. Lean manufacturing methods including SMED, POUS, cellular manufacturing, mistake proofing, TPM, 5S and visual management are practiced. Students learn how to create a control plan. MiniTab skill expansion is included. COREQUISITE: 10623110 Lean Six Sigma -Measure & Analyze

**LEAN SIX SIGMA - MEASURE AND ANALYZE**...provides the student with skills and tools to collect and analyze data to solve problems and improve processes within an organization. Various techniques for process mapping are explored including SIPOC, FMEA, VSM, standard work sheets, and spaghetti diagrams. Statistical tools are explored including probability, confidence intervals, measurement systems analysis, hypothesis testing, and TAKT time analysis to create and implement a data collection plan. MiniTab introduction is included.

**QUALITY CONCEPTS**...provides an overview of quality systems, methods and analysis using Minitab software. Basic quality philosophies such as Deming's principles, continuous improvement, quality costs, supplier relations and inspection theory will be presented. The components of a basic quality system compatible with ISO 9000 and Six Sigma will be explored. Minitab software will be taught and utilized to collect and analyze data. Techniques such as pareto, trend analysis, histograms, cause and effect diagrams and corrective/preventive action techniques will be applied to the data in order to address problems and improve processes.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## ABOUT THE PROGRAM

Radiation safety in today's healthcare, energy, manufacturing, defense, and pharmaceutical research fields depends on qualified experts to perform technical duties in areas using radioisotopes. These radiation safety/health physics experts play a vital role in the health, safety, and well-being of their coworkers, patients, the public, and the environment. If you have a strong interest in science, thrive on precision, are attentive to details, have the ability to follow exact instructions, and are comfortable working with technology and people, becoming a radiation safety technician is an ideal way to maximize your talents. This program is an excellent springboard for a four-year degree in the high-demand field of health physics.

## PROGRAM OUTCOMES

- Provide radiological safety in the workplace.
- Understand the natural laws of ionizing radiation.
- Maintain control over radioactive materials in compliance with regulatory requirements and accepted industry practices.
- Perform surveys to detect contamination, radiation safety, radiation levels, and assess hazards.
- Mitigate hazards associated with the use of radioactive materials and devices that produce ionizing radiation.

## CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

## ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

## PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

## APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

## FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

## SPECIAL NOTE

- Classes are offered at LTC's main campus with videoconferencing to NWTTC's Green Bay Campus and BTC's Milton campus.
- Gaining employment in the radiation safety and health physics field likely includes a very comprehensive background check of one's lifespan. This includes not only criminal activities, but likely also civil actions.
- ONLINE OPTION: Available to working adults in the Radiation Safety/Health Physics industry. To register for online courses, search for the catalog numbers and the online option. Online courses have prerequisites. Online students work with their industry supervisor to identify suitable activities at their worksite to enhance their learning.

## CONTACT

Don Geiger, Advisor  
920.693.1378 • [donald.geiger@gotoltc.edu](mailto:donald.geiger@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10624105	Health Physics Calculations and Statistics	3
10624110	Radioactivity and Regulations	3
10804113	College Technical Mathematics 1A	3
10801195	Written Communication	3
		<b>12</b>
<b>Term 2</b>		
10624114	Nuclear Systems and Sources	3
10624122	Radiation Physics	3
10624123	Radiation Physics-Lab	2
10624103	Nuclear DC and AC Applications	3
10801196	Oral/Interpersonal Communications	3
		<b>14</b>
<b>Summer</b>		
10624118	Radiation Biology	3
10809122	Introduction to American Government	3
		<b>6</b>
<b>Term 3</b>		
10624138	Radioactive Materials Management	2
10624133	Radiological Emergencies	3
10624134	Radiation Shielding	2
10624135	Radiation Shielding Lab	1
10806154	General Physics 1	4
10809198	Introduction to Psychology	3
		<b>15</b>
<b>Term 4</b>		
10529150	*Hazardous Waste Site Worker 40-Hour Training	2
10624140	Radiochemistry	3
10624144	Environmental HP & Decommissioning	3
10624145	Applied Health Physics	3
10624146	Applied Health Physics Lab	2
		<b>13</b>
		<b>TOTAL 60</b>

\* This class is offered in a week-long in-person seminar format outside of the traditional semester and is not available online. However, online students who have completed this 40-hour training may provide their transcript to their program advisor for these credits.

Most classes in this program have prerequisites.

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**APPLIED HEALTH PHYSICS**...prepares learner to issue dosimetry, monitor personal exposure, calculate/estimate radioactive airborne activity concentration, issue respirators, determine contamination levels, don & remove protective clothing, reduce the spread of contamination, conduct an ALARA audit, reduce the total radiation exposure, maintain records & estimate skin dose, etc. PREREQUISITE: 10624122 Radiation Physics

**APPLIED HEALTH PHYSICS-LAB**...expands the learner's ability to perform applied health physics tasks as covered in Applied Health Physics, 624-145 and should be completed within the same semester. COREQUISITE:10624145 Applied Health Physics

**COLLEGE TECHNICAL MATHEMATICS 1A**...prepares the student to solve linear, quadratic, and relational equations; graph; formula rearrangement; solve systems of equations; percent; proportions; and operations on polynomials. Emphasis will be on the application of skills to technical problems. PREREQUISITES: 10834110 Elementary Algebra w Apps or 10804107 College Mathematics or 31457318 Ind Mtrc Trades Math or 31420320 Machine Tool Math or math placement assessment equivalent

**ENVIRONMENTAL HP AND DECOMMISSIONING**...prepares the student to deal with issues associated with the environmental radiation, radiation accidents, environmental restoration, clean-up remediation, facility decommissioning, and decontamination. PREREQUISITES: 10624138 Radioactive Materials Management, 10624133 Radiological Emergencies, and 10624134 Radiation Shielding

**GENERAL PHYSICS 1**...presents the applications and theory of basic physics principles. This course emphasizes problem-solving, laboratory investigation, and applications. Topics include unit conversions and analysis, vectors, translational and rotational kinematics, translational and rotational dynamics, heat and temperature, and harmonic motion and waves. PREREQUISITE: 10804113 College Tech Math 1A, 10804115 College Tech Math 1, or 10804118 Intermediate Algebra, or Math placement assessment equivalent.

**HAZARDOUS WASTE SITE WORKER**...provides training to respond to a hazardous material incident both in an industrial setting and field setting. Student will receive hazardous waste site worker certificate upon successful completion of the class.

**HEALTH PHYSICS CALCULATIONS AND STATISTICS**...prepares the learner to solve linear and exponential equations, logarithms, plot graphs, determine counting statistics and reliability, and work with geometry and trigonometry problems. COREQUISITE: 10624110 Radioactivity and Regulations

**INTRODUCTION TO AMERICAN GOVERNMENT**...introduces American political processes and institutions. It focuses on rights and responsibilities of citizens and the process of participatory democracy. Learners examine the complexity of the separation of powers and checks and balances. It explores the role of the media, interest groups, political parties and public opinion in the political process. It also explores the role of state and national government in our federal system. COREQUISITE: 10838105 Intro to Reading and Study Skills or Reading placement assessment equivalent

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**NUCLEAR DC AND AC APPLICATIONS**...prepares nuclear, radiation safety, and health physics learners to apply direct current (DC) and alternating current (AC) concepts and laws; perform calculations and measurements to identify basic electrical terms, symbols, units, etc.; apply the electrical laws (such as, Ohm's law, Kirchhoff's voltage and current laws); to analyze DC/AC electronic circuit, power, etc.; to analyze AC waveform (including single-phase versus three-phase), batteries, chargers, etc. PREREQUISITE: 10624105 Health Physics Calcs & Stats

**NUCLEAR SYSTEMS AND SOURCES**...introduces the learner to the major components of natural/man-made background sources, x-ray tubes and applications, medical-used radioactivity materials, accelerators, nuclear gauging devices, non-ionization radiations, and power/research nuclear reactors and associated health physics topics. PREREQUISITE: 10624110 Radioactivity and Regulations

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**RADIATION BIOLOGY**...prepares the learner to convert measuring units and activity to dose rates, predict the effect of radiation on living cells and human organs, evaluate radiation risk, and calculate internal doses. PREREQUISITES: 10624110 Radioactivity and Regulations, 10624105 Health Phys Calc/Stats, 10624114 Nuclear Systems and Sources, 10624122 Rad Physics, 10624123 Rad Phys-Lab, and 10804113 College Tech Math 1A

**RADIATION PHYSICS**...introduces the learner to health physics-related physics, including the properties of radiation; interactions of radiation with matters; basic principles of radiation detection and measurement; and different kinds of radiation detectors; i.e., gas-filled and solid-state detectors. PREREQUISITE: 10624110 Radioactivity and Regulations, 10624105 Health Physics Calc & Stats, and 10804113 College Tech Math 1A

**RADIATION PHYSICS-LAB**...expands the learners ability to perform calculations, select instruments, and analyze samples. This course is associated with 624-122, Radiation Physics. COREQUISITE: 10624122 Radiation Physics and PREREQUISITE: 10801195 Written Communications and COREQUISITE: Radioactivity and Regulations

**RADIATION SHIELDING**...provides the learner with the skills to calculate radiation attenuation from various geometric radioactive sources, determine the effect of neutron radiation on materials, and estimate the exposure rate from various sources with or without shielding materials. PREREQUISITE: 10624122 Radiation Physics

**RADIATION SHIELD-LAB**...expands the learner's ability to perform shielding of ionizing radiation sources and to measure the penetration of beta and gamma radiation. COREQUISITE: 10624134 Radiation Shielding

**RADIOACTIVE MATERIAL AND MANAGEMENT**...introduces the learner to the proper methods used to dispose of radioactive waste in liquid, solid, gaseous forms; determine waste classification, evaluate methods used to process low-level and high-level waste, determine the package/label requirements, proper type of transport container, shipment quantity classification, storage distance from people and film during shipments by rail/vessel/public roads, proper shipping name and UN number; completion of proper shipping papers; document materials inventory/shipments. PREREQUISITES: 10624105 Health Physics Calc & Statistics, 10624110 Radioactivity and Regulations, 10624114 Nuclear Systems & Sources

**RADIOACTIVITY AND REGULATIONS**...introduces the learner to atomic and nuclear structure; radioactivity and basic dosimetry; regulation standards, including 10CFR 19, 20, 30, and 35. COREQUISITE: 10624105 Health Physics Calcs & Stats

**RADIOCHEMISTRY**...provides the student with the fundamentals of chemistry and the application of chemistry control to a nuclear facility. The course will cover basic water treatment principles, corrosion, reactor water chemistry control and chemical hazards. Prepares the learner to separate dissolved, suspended, liquid, and ionic radioactive components; perform qualitative and quantitative analysis of samples; and prevent the production of radioactive material by using proper chemical control. PREREQUISITE: 10624122 Radiation Physics or 10624122OL Radiation Physics

**RADIOLOGICAL EMERGENCIES**...teaches the learner to understand a radiological emergency, which is displaced radioactive substances in solid, liquid, or gaseous forms in amounts resulting in doses to workers, the public, or the environment, that exceeds company, state, and federal limits or regulations; how it is prevented and mitigated, the proper preparation and post-accident actions, as well as the regulations on radioactive releases, estimation of doses in an emergency, and the first response to an emergency. PREREQUISITES: 10624110 Nuclear Technology and Regulations, 10624105 Health Physics Calculations and Statistics and 10624114 Nuclear Systems and Sources

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 10-526-1 Associate Degree in Applied Science • Six Terms

### ABOUT THE PROGRAM

Diagnosing certain medical conditions or injuries often requires physicians to go beyond a routine physical examination; they need to see inside the body, so an x-ray of the affected area is ordered. Radiographers work with patients to acquire the necessary diagnostic images. If you're detail-oriented, caring, interested in anatomy and physiology, able to work under pressure, and inclined to work with technology and people, a career as a radiographer may be a satisfying choice for you.

### PROGRAM GOALS

- Students/Graduates will demonstrate critical thinking in the clinical setting.
- Students/Graduates will demonstrate good communication skills in the clinical setting.
- Students/Graduates will possess the knowledge and skills of an entry level radiographer and are able to perform competently in the clinical setting.
- Students/Graduates will model professional and ethical behavior.
- Graduates will successfully complete the ARRT Certification Examination and enter the field to meet the needs of the community.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

### CLASS REGISTRATION TO DO'S

- Complete an assessment for placement (Accuplacer or ACT).
- Complete Functional Ability Statement of Understanding form.
- Complete a program advising session with your advisor.

### PROGRAM READY TO DO'S

- Complete health requirements.
- Complete 4 hours of clinical observation and submit form.
- Complete CPR BLS Healthcare Provider certification.
- Complete CNA course within the past 2 years prior to clinical start or be on current registry.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

- Students must either have completed the Nursing Assistant course within 2 years prior to the Radiography clinical start OR be current on the Nursing Assistant Registry.
- LTC offers its Radiography program in cooperation with Nicolet Technical College. As a radiography student, you'll attend live or interactive TV classes and take general studies classes at your local technical college.
- LTC's Radiography program is accredited by The Joint Review Committee on Education in Radiologic Technology, 20 North Wacker Drive, Suite 2850, Chicago, Illinois 60606-3182. Phone: 1.312.704.5300.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
10806177	General Anatomy and Physiology	4
<b>Term 1</b>		
10526149	Radiographic Procedures 1	5
10526158	Introduction to Radiography	3
10526159	Radiographic Imaging 1	3
10526168	Radiography Clinical 1	2
		<b>13</b>
<b>Term 2 (Summer)</b>		
10526192	Radiography Clinical 2	3
10804107	College Mathematics	3
		<b>6</b>
<b>Term 3</b>		
10526170	Radiographic Imaging 2	3
10526191	Radiographic Procedures 2	5
10526193	Radiography Clinical 3	3
10801196	Oral/Interpersonal Communication	3
		<b>14</b>
<b>Term 4</b>		
10526194	Imaging Equipment Operation	3
10526196	Modalities	3
10526199	Radiography Clinical 4	3
10526189	Radiographic Pathology	1
10809198	Introduction to Psychology	3
		<b>13</b>
<b>Term 5 (Summer)</b>		
10526190	Radiography Clinical 5	2
10801195	Written Communication	3
		<b>5</b>
<b>Term 6</b>		
10526174	ARRT Certification Seminar	2
10526195	Radiographic Quality Analysis	2
10526197	Radiation Protection & Biology	3
10526198	Radiography Clinical 6	2
10809196	Introduction to Sociology	3
		<b>12</b>
		<b>TOTAL 67</b>

Prerequisites: Chemistry and Medical Terminology

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**ARRT CERTIFICATION SEMINAR**...provides preparation for the national certifying examination prepared by the American Registry of Radiologic Technologists. Emphasis is placed on the weak areas of the individual students. Simulated registry examinations are utilized. Successful completion of the Radiography program requirements is required to enroll in this course. PREREQUISITE: 10526190 Radiography Clinical 5 and CONDITION: 105261 Radiography Admissions Requirements Met

**COLLEGE MATHEMATICS**...is designed to review and develop fundamental concepts of mathematics pertinent to the areas of: 1) arithmetic and algebra; 2) geometry and trigonometry; and 3) probability and statistics. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent

**GENERAL ANATOMY AND PHYSIOLOGY**...examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients. PREREQUISITE: 10806134 General Chemistry or equivalent

**IMAGING EQUIPMENT OPERATION**...introduces radiography students to the principles and application of x-ray technology. Students analyze how x-rays are produced and determine the corrective actions necessary for common equipment malfunctions. PREREQUISITE: 10526170 Radiographic Imaging 2 and CONDITION: 105261 Radiography Admissions Requirements Met

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**INTRODUCTION TO RADIOGRAPHY**...introduces students to the role of radiography in health care. Students apply legal and ethical considerations to patient care and pharmacology in the radiologic sciences. PREREQUISITE: 10501101 Medical Terminology and CONDITION: 105261 Radiography Admissions Requirements Met

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**MODALITIES**...introduces radiography students to other types of imaging including ultrasound, MRI, mammography, and bone density scans. Students analyze the role of various imaging technologies in health care. PREREQUISITE: 10526191 Radiographic Procedures 2 and CONDITION: 105261 Radiography Admissions Requirements Met

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**RADIATION PROTECTION & BIOLOGY**...prepares radiography students to protect themselves and others from exposure to radioactivity. Students examine the characteristics of radiation and how radiation affects cell biology. Students apply standards and guidelines for radiation exposure. PREREQUISITE: 10526194 Imaging Equipment Operation and CONDITION: 105261 Radiography Admissions Requirements Met

**RADIOGRAPHIC IMAGING 1**...introduces radiography students to the process of creating radiographic images. Students determine the factors that affect image quality including contrast, density, and distortion. Students apply OSHA standards for health and safety in the darkroom. PREREQUISITES: 10806174 General Chemistry or 10806143 General Chemistry or High School Chemistry Equivalent and CONDITION: 105261 Radiography Admissions Requirements Met

**RADIOGRAPHIC IMAGING 2**...prepares radiography students to apply advanced radiographic principles to the production of radiographic images. Students analyze exposure factor considerations, differentiate between film and exposure latitude, and use beam-restricting devices. PREREQUISITES: 10526159 Radiographic Imaging 1

**RADIOGRAPHIC PATHOLOGY**...prepares radiography students to determine the basic radiographic manifestations of pathological conditions. Students classify trauma related to site, complications, and prognosis and locate the radiographic appearance of pathologies. CONDITION: 105261 Radiography Admissions requirements met

**RADIOGRAPHIC PROCEDURES 1**...prepares radiography students to perform routine radiologic procedures on various parts of the body including the upper body, hip, pelvis and ankle. Students apply knowledge of human anatomy to position the patient correctly to achieve the desired result. CONDITION: 105261 Radiography Admissions Requirements Met and PREREQUISITES: 10806177 Gen Anatomy & Physiology or 10806177OL Gen Anatomy & Physiology

**RADIOGRAPHIC PROCEDURES 2**...prepares radiography students to perform routine radiologic procedures on various parts of the body including the skull and spine. Students apply knowledge of human anatomy to position the patient correctly to achieve the desired result. PREREQUISITE: 10526149 Radiographic Procedures 1

**RADIOGRAPHIC QUALITY ANALYSIS**...prepares radiography students to analyze radiographic images for quality. Students apply quality control tests to determine the causes of image problems including equipment malfunctions and procedural errors. CONDITION: 105261 Radiography Admissions Requirements Met and PREREQUISITE: 10526194 Imaging Equipment Operation

**RADIOGRAPHY CLINICAL 1**...is a beginning level clinical course that prepares radiography students to perform radiologic procedures on patients with extensive supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. An emphasis of the course is the development of communication and critical thinking skills appropriate to the clinical setting. CONDITION: 105261 Radiography Admissions Requirements Met and COREQUISITE: 10526149 Radio Proc 1, 10526158 Intro to Radio, 10526159 Radio Imaging 1, and PREREQUISITE: 10806177 Gen A&P or 10806196 A&P II

**RADIOGRAPHY CLINICAL 2**...is the second level clinical course that prepares radiography students to perform radiologic procedures on patients with extensive supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. An emphasis of the course is the development of communication and critical thinking skills appropriate to the clinical setting. COREQUISITE: 10526168 Radiography Clinical 1

**RADIOGRAPHY CLINICAL 3**...is the third level clinical course which prepares radiography students to perform radiologic procedures on patients with supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. An emphasis of the course is the demonstration of communication and critical thinking skills appropriate to the clinical setting. PREREQUISITE: 10526192 Radiographic Clinical 2

**RADIOGRAPHY CLINICAL 4**...is the fourth level clinical course that prepares radiography students to perform radiologic procedures on patients with supervision and direction. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies. PREREQUISITE: 10526193 Radiographic Clinical 3

**RADIOGRAPHY CLINICAL 5**...is the fifth level clinical course that prepares radiography students to perform radiologic procedures on patients with some supervision. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies. COREQUISITE: 10526199 Radiographic Clin 4

**RADIOGRAPHY CLINICAL 6**...is the final clinical course which requires students to integrate and apply all knowledge learned in previous courses to the production of high quality radiographs in the clinical setting. Students apply radiation protection and standard precautions in the production of radiographs in a health care setting while adhering to legal and ethical guidelines. Students are encouraged to demonstrate independent judgment in the performance of clinical competencies. PREREQUISITE: 10526190 Radiography Clinical 5

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 31-104-8 Technical Diploma • Two Terms

### ABOUT THE PROGRAM

The Sales Representative technical diploma prepares the student to be a professional in both business-to-business and business-to-consumer environments. The student will have a fundamental understanding of selling techniques, sales strategies, customer relations management and customer service, professionalism, and Web-based selling and marketing. A graduate holding such a diploma may be expected to manage customers and accounts, prepare quotes and close sales, provide sales data and marketing analysis, and work inside sales, outside sales, retail sales, and other customer support roles. This technical diploma will ladder into the Marketing associate degree program.

### PROGRAM OUTCOMES

- Develop marketing strategies.
- Develop selling strategies.
- Deliver sales presentations.
- Analyze sales information.
- Apply customer relationship building strategies.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

This program is also offered in an online delivery format. Contact an advisor for details.

### RELATED PROGRAMS

- Marketing In A Digital Era Associate Degree

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10104102	Marketing, Principles of	3
10801198	Speech OR 10801196 Oral/Interpersonal Communication	3
10104125	Promotion in the Social Media Campaign	3
10104172	Marketing Analysis	3
		<b>12</b>
<b>Term 2</b>		
10104104	Selling Strategies	3
10104124	Research and Web Analytics	3
10104105	B2B Sales and CRM	3
10104134	Direct Marketing, PR and Media	3
10104136	Retail Marketing	3
		<b>15</b>
		<b>TOTAL 27</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**B2B SALES AND CRM**...enhances the student's ability to create business to business selling strategies and understand the factors affecting the sales funnel. Students will develop an understanding of CRM, account management, sales leadership and motivation, and sustaining the brand in the new era of Sales 2.0. COREQUISITE: 10104104 Selling Strategies

**DIRECT MARKETING, PR AND MEDIA**...provides the student with an overview of direct marketing, public relations, and social media as it relates to the consumer. Various channels of direct marketing will be investigated including social media, mobile marketing, email marketing, and traditional direct marketing strategies.

**MARKETING ANALYSIS**...expands the student's ability to analyze the role of marketing strategy in event, political, sports, actor and music marketing. This marketing course focuses on the development of marketing solutions for real-world businesses. This course focuses on the development of various promotional material used in marketing.. PREREQUISITE: 10104102 Principles of Marketing

**MARKETING, PRINCIPLES OF**...introduces the student to the consumer decision process model, the bases used to segment a market, basic concepts about goods, services, and ideas, the nature of supply chain and distribution, integrated marketing communications, and the stages of the product life cycle and their impact on the marketing mix.

**PROMOTION IN THE SOCIAL MEDIA CAMPAIGN**...provides the student with the understanding of the promotional mix in integrated marketing communications. Students will also explore the role of social media in branding and positioning products. COREQUISITE: 10104102 Principles of Marketing

**RESEARCH AND WEB ANALYTICS**...provides the student with the ability to distinguish between quantitative and qualitative research techniques, primary and secondary data, and the marketing research process. In addition students will learn how web analytics and mobile technology have affected the marketing research process.

**RETAIL MARKETING**...provides the student with current developments in retail marketing. Students will learn about types of retailers, customer service, distribution and inventory control, and online and traditional retailing methods.

**SELLING STRATEGIES**...prepares the student to understand the business to consumer selling process, the technological advancement in selling, and the importance of customer relationship management.

**SPEECH**...explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and other essential elements of speaking successfully, including the listening process, form the basis of the course. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

## Program Number 31-504-6 Technical Diploma • Three Terms

### ABOUT THE PROGRAM

This program prepares new corrections officers and security professionals for the dynamic environment they face. Learners will gain a foundational understanding of private security officer roles and responsibilities as well as complete a Wisconsin Department of Justice Basic Jail Officer Academy and Co-located Academy. Students will develop their capabilities through scenario based training and exercises ensuring they have the skills and capabilities needed to be successful in this field.

### PROGRAM OUTCOMES

- Demonstrate communication skills within security and corrections environments.
- Explore procedures, practices and processes within the security industry and correctional system.
- Safeguarding lives, organizational profits, assets, interests, and property.
- Positively interact with individuals to assist and maintain security.
- Reduce risk through planning, preparation, observation, communication, mitigation, and recovery.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).
  - Complete background check and \$16 processing fee.

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete DMI (District Mutual Insurance) form.
  - Submit US citizenship status.
  - Complete Functional Abilities Statement of Understanding form.
  - Be at least 18 years of age before taking any term 3 courses
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results, discuss DOJ Jail Academy requirements and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

Completion of the Basic Jail Officer Parts 1 and 2 courses meets State of Wisconsin Law Enforcement Standards Board training requirements for a Basic Jail Officer. Employed candidates become certified upon presentation of their academy transcripts to the Standards Board and upon board approval. Candidates seeking employment have three years from completion of the course to secure a Jail Officer position in order to become certified.

### RELATED PROGRAMS

- Criminal Justice-Law Enforcement Associate Degree

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1 (Fall)</b>		
10540131	Intro to Public Safety	2
30504306	Fundamentals of Security	2
31801359	Communication Skills for the Workplace	2
		<b>6</b>
<b>Term 2 (Spring)</b>		
30504308	Professional Communication in Security and Corrections	1
30504307	Security Applications	2
10449114	Safety in the Workplace	3
10503911	Company Level Inspections	2
		<b>8</b>
<b>Term 3 (Summer)</b>		
30504302	Basic Jail Officer Part 1	3
30504303	Basic Jail Officer Part 2	3
30504305	Co-located Academy	1
30504309	Field Integration	2
		<b>9</b>

**TOTAL 23**

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*





**BASIC JAIL ACADEMY CO-LOCATED**...is designed for staff members working in co-located secure juvenile detention facilities. The course consists of four task modules: Introduction to Detention Operations, Supervise Juveniles, Discipline Juveniles, and Apply Legal Requirements. Successful completion of this course qualifies a person for certification by the Law Enforcement Standards Board as a secure juvenile detention officer. CONDITION: 315046 Security and Corrections program admissions requirements met

**BASIC JAIL OFFICER TRAINING PART 1**...exposes learners to the basic fundamentals of jail officer training as configured by the Wisconsin Department of Justice. Topics presented include: Academy Orientation, Admit and Release Inmates, Correctional law, Jail Health Care, Intro to Corrections, Jail Officer Wellness, Maintaining Jail Security, Professional Communications, POSC, Prepare Reports, Integration Exercises, and the Phase I Written Exam. CONDITION: 315046 Security and Corrections program admissions requirements met

**BASIC JAIL OFFICER TRAINING PART 2**...builds on previously learned foundations to develop learners as prospective jail officers. Department of Justice Topics presented include: CPR/AED, Ethics, Fire Safety, Inmate Supervision and Behavior Control, Investigations, Jail Hostage Response, POSC Part 2, Suicide Prevention, Supervision of Special Needs Inmate/Crisis Intervention, Integration Exercises, Scenario Testing, and Phase 2 Written Exam. CONDITION: 315046 Security and Corrections program admissions requirements met

**COMMUNICATION SKILLS FOR THE WORKPLACE**...prepares the student to develop paper job-search tools and job-related writing skills to increase 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.

**COMPANY LEVEL INSPECTIONS**...familiarizes the students with state and local regulations and national codes relating to fire prevention. The course requires the completion of actual inspections and fire safety presentations. Presents the necessary information for performing company level fire inspections.

**FIELD INTEGRATION**...integrates previously learned knowledge and skills into the actual work and field environment. Students will incorporate classroom theory and agency policy into action through simulations, scenario based projects, field job shadowing, and internship activities in this capstone course. PREREQUISITE: 30504307 Security Applications

**FUNDAMENTALS OF SECURITY**...introduces the learner to the roles and responsibilities of the security professional. Students will investigate the skills that are needed for security and learn essential concepts including legal authority, ethics, and life safety code, how to perform investigations, as well as interacting with the media.

**INTRO TO PUBLIC SAFETY**...gives the student a working knowledge of the Emergency Management and Incident Command System.

**PROFESSIONAL COMMUNICATION IN SECURITY AND CORRECTIONS**...provides the learner with the fundamentals of verbal and nonverbal communications in the security and corrections professions. Students will harness the skills to prepare effective field notes, prepare various uniform report forms, organize information in reports, write narratives, and analyze reports for required components.

**SAFETY IN THE WORKPLACE**...applies the skills and tools necessary to provide a safe and secure work environment. Each learner will demonstrate the application of safety awareness, federal/state/local compliance, incident investigation and documentation, human relations techniques, safety orientation, inspections, and risk analysis, issues of workplace violence, substance abuse, and health hazards, first aid and CPR, fire and electrical safety, emergency preparedness, and liaison with external agencies.

**SECURITY APPLICATIONS**...builds on previously learned foundations and will include the skills needed to perform a security patrol and protect property. Additionally, learners will be exposed to the various methods of utilizing technology to assist in maintaining security. This course will include scenario based application of these concepts. PREREQUISITE: 30504306 Fundamentals of Security

**Program Number 50-432-1  
5-Year Contract**

**Work Hours (including related instruction): 9000  
Related Instruction Hours: 512 • Night School Hours: 250**

### ABOUT APPRENTICESHIP

Apprenticeships are employer-sponsored training programs. You must have a contract before being invited to school. A special application process is used for these programs. Please contact the Apprenticeship Office for the proper forms. Apprenticeship means you earn while you learn. If you want a career in a skilled trade, apprenticeship is the best way to get there. You'll combine on-the-job training with on-campus learning—you'll have the best of both worlds when it comes to learning the skills you need to get ahead. And even better, you'll earn a paycheck while you learn those skills.

### ABOUT THE CAREER

Sheet metal workers plan and lay out work from blueprints and sketches, fabricate parts using hand and power equipment, assemble HVAC (Heating, Ventilation, and Air Conditioning) and architectural units, and install the assembled units in the final structure. The Sheet Metal Apprenticeship program is an employer-sponsored, hands-on training program. If you like to work on projects from start to finish, using a variety of skills, check out a career as a journey-level sheet metal worker.

### CAREERS

Graduates of LTC's Sheet Metal Apprenticeship program work as journey-level sheet metal workers in a variety of workplace settings.

### CONSTRUCTION APPRENTICE APPLICATION REQUIREMENTS

- Apprentice Application
- Proof of Age
- Accuplacer Entrance Assessment or ACT test
- High School Transcripts or Equivalent
- Advisory Committee Interview

### PROGRAM OUTCOMES

- Work safely in a variety of work situations.
- Demonstrate proficiency in welding.
- Install sheet metal components according to industry standards.
- Lay out sheet metal components according to specifications.
- Fabricate sheet metal components using a variety of metal fabricating machinery.
- Interpret trade-related documents.
- Demonstrate proficiency using acetylene and hand plasma cutting.

### APPROXIMATE COSTS

Contact the LTC Apprenticeship Office or visit [www.gotoltc.edu/apprenticeship](http://www.gotoltc.edu/apprenticeship) for detailed information.

### MINIMUM PLACEMENT SCORES

Accuplacer: Arithmetic-66, Reading-66, Elementary Algebra-33  
ACT: Mathematics-16, Reading-16

### SPECIAL NOTE

Upon completion of the apprentice requirements, you'll be issued a Letter of Introduction, which states your requirements have been met. You'll use this Letter of Introduction to apply for work in the trade. You must have a sponsoring employer before receiving a contract and being invited to school.

### CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

Catalog No.	Class Title	Credit(s)
	<b>Term 1</b>	
50432501	Sheet Metal Apprentice 1	2 <b>2</b>
	<b>Term 2</b>	
50432502	Sheet Metal Apprentice 2	2 <b>2</b>
	<b>Term 3</b>	
50432503	Sheet Metal Apprentice 3	2 <b>2</b>
	<b>Term 4</b>	
50432504	Sheet Metal Apprentice 4	2 <b>2</b>
	<b>Term 5</b>	
50432505	Sheet Metal Apprentice 5	2 <b>2</b>
	<b>Term 6</b>	
50432506	Sheet Metal Apprentice 6	2 <b>2</b>
	<b>Term 7</b>	
50432507	Sheet Metal Apprentice 7	2 <b>2</b>
	<b>Term 8</b>	
50432508	Sheet Metal Apprentice 8	2 <b>2</b>
<b>TOTAL</b>		<b>16</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**SHEET METAL APPRENTICE 1**...introduces the apprentice to the sheet metal industry; learn craftsmanship; use drafting equipment and materials, The apprentice will learn trade overview and history; learn hand tools and their proper use; begin learning fundamentals of fabrication on metal; learn drafting tools and materials; learn lines and lettering; develop orthographic projections; begin layout techniques; learn layout tools and terms and principles; and begin fabricating fittings with metal. CONDITION: 504321/504322 Sheet Metal Apprentice requirements met..

**SHEET METAL APPRENTICE 2**...introduces the apprentice to parallel line, radial line, and triangulation pattern development. The apprentice will learn the following layout principles: Ogee offsets, parallel line layout, radial line layout, triangulation layout, and soldering. CONDITION: 504321/504322 Sheet Metal Apprentice requirements met.

**SHEET METAL APPRENTICE 3**...introduces the apprentice to the basics of organizing time; introduction to computers; the use of scientific calculators for trigonometry and everyday equations. The apprentice will revisit orthographic drawing development; learn pattern development and fabrication of the following - round tee's, round elbows, round tapers, roof jacks, square to rounds, and transitions. CONDITION: 504321/504322 Sheet Metal Apprentice requirements met.

**SHEET METAL APPRENTICE 4**...introduces the apprentice to the basics of Architectural Sheet Metal, describes the primary functions and forms of architectural sheet metal, including shelter, durability, and appearance. It also identifies the larger concepts of architectural sheet metal, including moisture control, expansion and contraction, roof and wall systems, shop layout and fabrication including soldering of architectural components, installation, safety, and project management. It also describes the contributions of architectural sheet metal to architecture, art, and design. CONDITION: 504321/504322 Sheet Metal Apprentice requirements met.

**SHEET METAL APPRENTICE 5**...provides the apprentice with skills to understand the concepts of HVAC systems. The apprentice will learn how to understand the different systems and components, heat transfer theories, refrigeration theories, electrical theories, automatic controls, and field installation roles and responsibilities. CONDITION: 504321/504322 Sheet Metal Apprentice requirements met.

**SHEET METAL APPRENTICE 6**...provides the apprentice with skills to understand the concepts of HVAC systems and reading plans and specs. Apprentices will interpret load calculations and sizing ductwork; understand test and balance (TAB) procedures, understand commissioning duties, become an effective project manager, interpret plans and specs, and create CAD drawings. CONDITION: 504321/504322 Sheet Metal Apprentice requirements met.

**SHEET METAL APPRENTICE 7**...introduces the apprentice to Industrial Sheet Metal skills. The apprentice will be able to identify types of materials used in industrial sheet metal work, understand the weldability of each of the types of materials used in industrial work, identify the primary steps of stock metal used in industrial sheet metal applications--plates, angles, bars, beams and channels, calculate the weight of stock metal components represented in a drawing, calculate the cost of stock metal components represented in a drawing, identify the welding and drawing symbols used in industrial sheet metal, understand where pipe welding is used, understand how to safely operate power equipment that is used for industrial work, and know the appropriate PPE to use for any given situation and how to use the equipment correctly. CONDITION: 504321/504322 Sheet Metal Apprentice requirements met

**SHEET METAL APPRENTICE 8**...teaches the apprentice to become familiar with layout principles for sheet metal items commonly found in industrial environments. The apprentice will understand the difference between plan view and elevation view, understand how to lay out a project using a combination of two of the three methods of an industrial project, be familiar with the technical aspects related to cutting heavy metals, be familiar with common shop workflow procedures, be familiar with the types of job sites where industrial work might be performed, identify and describe the six steps used for field installation, be familiar with the challenges of scheduling an industrial job, understand the importance of communicating and cooperating with other trades, understand the overall purpose and function of an industrial ventilation/exhaust system, understand the principles of airflow and how it impacts industrial ventilation/exhaust system design, be familiar with basic rigging principles, and be familiar with hand signals used during hoisting operations. CONDITION: 504321/504322 Sheet Metal Apprentice requirements met

**Program Number 31-182-1**  
**Technical Diploma • Two Terms**

### ABOUT THE PROGRAM

This technical diploma, Supply Chain Assistant, provides you with the basic skills needed to perform entry level work in supply chain management. This credential 'ladders' up the associate degree credential, Supply Chain Management. Words such as logistics, purchasing, or material management all encompass part of a supply chain. Supply chains are led and managed by people who enjoy working with others and analyzing data. Without supply chain management, you could not get the products or services you need every day. If you want to be a part of an ever-changing and growing field, supply chain management is for you, and this introductory credential, the Supply Chain Assistant Technical Diploma, can help get you started.

### PROGRAM OUTCOMES

- Define (plan) operations, transportation, procurement and distribution.
- Measure operations, transportation, procurement and distribution.
- Analyze operations, transportation, procurement and distribution.
- Improve operations, transportation, procurement and distribution.
- Control operations, transportation, procurement and distribution.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

This technical diploma is part of the career pathway for supply chain management, and it can serve as a foundation for the higher level credential, the Supply Chain Management Associate Degree. The associate degree provides further in-depth training in quality, management, and in "soft" skills.

### CONTACT

LTC Career Coach  
 920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10182108	Purchasing	3
10182131	Supply Chain Management	3
10623118	Lean Manufacturing Overview	3
10182122	Logistics	3
		<b>12</b>
<b>Term 2</b>		
10182102	Service Operations Management	3
10623110	Lean Six Sigma - Measure and Analyze	4
10182115	Computer Simulation Basics	3
10182114	Enterprise Resource Planning and Control	3
10801195	Written Communication OR 10801136 English Composition 1	3
		<b>16</b>
		<b>TOTAL 28</b>

***Curriculum  
 Modifications Pending  
 State Approval***

Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.



**COMPUTER SIMULATION BASICS**...introduces the student to simulation software. The course is structured to introduce basic simulation terminology, develop models, and analyze the information derived from modeling. Students will utilize a 3D simulation software to model, simulate, predict, and analyze systems in manufacturing and logistics organizations.

**ENTERPRISE RESOURCE PLANNING AND CONTROL**...prepares the participant to interpret material requirements planning reports, build a master production schedule, construct capacity plans, and understand sales and operations planning. The curriculum is developed from the American Production and Inventory Controls exam certification's domain of knowledge. PREREQUISITE: 10182131 Supply Chain Management

**LEAN MANUFACTURING OVERVIEW**...expands the learner's ability to develop skills to prioritize and sequence work, execute work plans, implement controls, and create and analyze performance evaluations. It allows the student to explore the execution of quality initiatives and continuous improvement plans in addition to the control and handling of inventories.

**LEAN SIX SIGMA - MEASURE AND ANALYZE**...provides the student with skills and tools to collect and analyze data to solve problems and improve processes within an organization. Various techniques for process mapping are explored including SIPOC, FMEA, VSM, standard work sheets, and spaghetti diagrams. Statistical tools are explored including probability, confidence intervals, measurement systems analysis, hypothesis testing, and TAKT time analysis to create and implement a data collection plan. MiniTab introduction is included.

**LOGISTICS**...introduces the student to business logistics, including the efficient and effective flow of goods, services, and related information from the point of origin to the point of consumption and provides a summary of the role and importance of transportation and an overview of carriers, carrier management, and technology and strategies in logistics.

**PURCHASING**...introduces the participant to basic purchasing, quality specifications, inventory control, supplier selection, price aspects, research and measurement, negotiation, and global purchasing. This course is exciting for anyone interested in working in a challenging and rewarding purchasing and supply chain management career.

**SERVICE OPERATIONS MANAGEMENT**...introduces the student to the basic coverage of the concepts and current issues in service operation management. Topics include the value equation in operations management; understanding services; building the service system; operating the service system; enterprise resource management (ERP) and supply chain management concepts in the service sector.

**SUPPLY CHAIN MANAGEMENT**...has been developed to provide a basic understanding of the planning and control of materials into, through, and out of organizations. In addition, those who want to become certified by APICS need a fundamentals course to learn about the material planning and control system. This course will provide a basis for further study leading to certification.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

**Program Number 10-182-1**  
**Associate Degree in Applied Science • Four Terms**

### ABOUT THE PROGRAM

Supply chains are everywhere in every business, service, or hospital. Other terms you may know describe specific parts of a supply chain. Words such as logistics, purchasing, or material management all encompass only a part of a supply chain. Supply chains are led and managed by people who enjoy working with others and analyzing data. Without supply chain management, you could not get the products or services you need every day. If you want to be a part of an ever-changing and growing field, supply chain management is for you.

### PROGRAM OUTCOMES

- Define (plan) operations, transportation, procurement and distribution.
- Measure operations, transportation, procurement and distribution.
- Analyze operations, transportation, procurement and distribution.
- Improve operations, transportation, procurement and distribution.
- Control operations, transportation, procurement and distribution.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### CONTACT

LTC Career Coach  
 920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10103121	Excel - Level 1	1
10103191	Word - Level 1	1
10182108	Purchasing	3
10182131	Supply Chain Management	3
10623118	Lean Manufacturing Overview	3
10801195	Written Communication OR 10801136 English Composition 1	3
		<b>14</b>
<b>Term 2</b>		
10105128	Personal Branding	2
10801196	Oral/Interpersonal Communication OR 10801198 Speech	3
10804123	Math with Business Applications	3
10809198	Introduction to Psychology OR 10809188 Developmental Psychology	3
10182160	Global Supply Chain Management	3
		<b>14</b>
<b>Term 3</b>		
10101155	Accounting for Professionals	3
10196188	Project Management	3
10623110	Lean Six Sigma - Measure and Analyze	4
10182114	Enterprise Resource Planning and Control	3
10182115	Computer Simulation Basics	3
		<b>16</b>
<b>Term 4</b>		
10182102	Service Operations Management	3
10182122	Logistics	3
10182107	Portfolio Assessment-Supply Chain	1
10623193	ISO 9001 Internal Auditor OR 10623195 ISO 9001 Concepts	3
10809195	Economics	3
10806112	Principles of Sustainability OR 10809166 Introduction to Ethics	3
		<b>16</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

**ACCOUNTING FOR PROFESSIONALS**...is the study of the information that can be interpreted from financial statements. Students analyze financial statements and apply managerial accounting concepts in an accelerated format. PREREQUISITE: 10804123 Math w Business Applications or CONDITION: 101101 Paralegal program reqs met

**COMPUTER SIMULATION BASICS**...introduces the student to simulation software. The course is structured to introduce basic simulation terminology, develop models, and analyze the information derived from modeling. Students will utilize a 3D simulation software to model, simulate, predict, and analyze systems in manufacturing and logistics organizations.

**ECONOMICS**...provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**ENTERPRISE RESOURCE PLANNING AND CONTROL**...prepares the participant to interpret material requirements planning reports, build a master production schedule, construct capacity plans, and understand sales and operations planning. The curriculum is developed from the American Production and Inventory Controls exam certification's domain of knowledge. PREREQUISITE: 10182131 Supply Chain Management

**EXCEL - LEVEL 1**...introduces the student to spreadsheet features such as creating, saving, editing, navigating, formatting worksheets; entering formulas and functions; working with charts; and developing multiple-sheet workbooks.

**GLOBAL SUPPLY CHAIN MANAGEMENT**...introduces the student to supply chain financial transactions which include foreign exchange market, fluctuations of the market, role of the global capital market, major determinants in country risk, methods of foreign market entry, international contracts and commercial documents, export packaging, customs clearance, and global supply chain logistics infrastructure.

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**ISO 9001 INTERNAL AUDITOR**...is designed to introduce participants to the current QS/ISO 9001 and ISO 19011 standards. The course is structured to provide a detailed review of the standards, how to document procedures, and how to perform audits. Students will practice preparation for and conducting audits in a local business. Successful completion of this course qualifies the student to receive the ISO 9001 Internal Auditor certificate (19-623-8)

**LEAN MANUFACTURING OVERVIEW**...expands the learner's ability to develop skills to prioritize and sequence work, execute work plans, implement controls, and create and analyze performance evaluations. It allows the student to explore the execution of quality initiatives and continuous improvement plans in addition to the control and handling of inventories.

**LEAN SIX SIGMA - MEASURE AND ANALYZE**...provides the student with skills and tools to collect and analyze data to solve problems and improve processes within an organization. Various techniques for process mapping are explored including SIPOC, FMEA, VSM, standard work sheets, and spaghetti diagrams. Statistical tools are explored including probability, confidence intervals, measurement systems analysis, hypothesis testing, and TAKT time analysis to create and implement a data collection plan. MiniTab introduction is included.

**LOGISTICS**...introduces the student to business logistics, including the efficient and effective flow of goods, services, and related information from the point of origin to the point of consumption and provides a summary of the role and importance of transportation and an overview of carriers, carrier management, and technology and strategies in logistics.

**MATH WITH BUSINESS APPLICATIONS**...covers real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications. PREREQUISITE: 10834109 Pre-Algebra or Math placement assessment equivalent and COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610061 Agribusiness/Agronomy Basic program admissions requirements met

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PERSONAL BRANDING**...focuses on the importance of developing a strong brand identity for yourself as a professional. As a prospective employee, you are constantly selling yourself from how you talk, walk, dress, your facial expressions, and your body language; people are always forming impressions of you. In this course, you will develop a professional resume, cover letter, practice interview skills, and learn the role of social media in career development.

**PORTFOLIO ASSESSMENT-SUPPLY CHAIN**...prepares the student to identify what they have learned through the supply chain program, write career goals, re-examine their resume, research and collect project samples of their achievements, and analyze their achievements within the college core abilities. PREREQUISITES: 10105128 Personal Branding

**PRINCIPLES OF SUSTAINABILITY**...prepares students to develop sustainable literacy, analyze interconnections among physical and biological sciences and environmental systems, summarize effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal/recycling in the U.S., and analyze approaches used by your community. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PROJECT MANAGEMENT**...introduces the learner to explore the relationship of existing and emerging processes and technologies to manufacturing strategy and supply chain-related functions. This course addresses three main topics: aligning resources with the strategic plan, configuring and integrating operating processes to support the strategic plan, and implementing change.

**PURCHASING**...introduces the participant to basic purchasing, quality specifications, inventory control, supplier selection, price aspects, research and measurement, negotiation, and global purchasing. This course is exciting for anyone interested in working in a challenging and rewarding purchasing and supply chain management career.

**SERVICE OPERATIONS MANAGEMENT**...introduces the student to the basic coverage of the concepts and current issues in service operation management. Topics include the value equation in operations management; understanding services; building the service system; operating the service system; enterprise resource management (ERP) and supply chain management concepts in the service sector.

**SUPPLY CHAIN MANAGEMENT**...has been developed to provide a basic understanding of the planning and control of materials into, through, and out of organizations. In addition, those who want to become certified by APICS need a fundamentals course to learn about the material planning and control system. This course will provide a basis for further study leading to certification.

**WORD - LEVEL 1**...introduces the student to word processing features such as creating, saving, editing, navigating, and formatting the content of multi-page documents.

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## ABOUT THE PROGRAM

Sustainable Landscape Horticulture technicians can make a living in a wide variety of ways. This is truly a “green” career. You may work in the disciplines of plant propagation and production for a greenhouse or tree nursery—nurturing plants to be used in landscaping, food production, or sold in retail garden centers. You may also work on landscape maintenance or landscape construction crews for landscape contractors, lawn care service companies, botanical gardens, municipal park departments, golf courses, civil engineering firms, and natural resource management agencies. Work duties are typically outdoors and very hands on. With time and experience, management and consulting opportunities within the field are possible.

## PROGRAM OUTCOMES

- Analyze growing media.
- Diagnose plant health.
- Communicate as a horticulture professional.
- Apply design principles.
- Provide horticulture maintenance.
- Apply the principles of plant science.

## CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

## ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

## PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete Program To Do's.

## APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

## FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

## CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10001110	Horticulture Introduction	3
10001153	Botany and Soil Science	3
10001112	Plants 1	3
10001113	Landscape Installation 1	3
10801196	Oral/Interpersonal Communication	3
		<b>15</b>
<b>Term 2</b>		
10001120	Greenhouse & Nursery Production	3
10001121	Landscape Design Studio	3
10001132	Plants 2	3
10001172	Landscape Maintenance	3
10806112	Principles of Sustainability	3
		<b>15</b>
<b>Term 3</b>		
10001133	Landscape Installation 2	3
10001140	Advanced Concepts in Horticulture	3
10001148	Plant Communities of Wisconsin	3
10001123	Site Analysis and Stormwater Management	3
10809196	Introduction to Sociology	3
		<b>15</b>
<b>Term 4</b>		
10001147	Advanced Greenhouse & Nursery Mgmt	3
10001144	Sustainable Horticulture Capstone	3
10001149	Sustainable Landscape Management	3
10809198	Introduction to Psychology	3
10801195	Written Communications	3
		<b>15</b>
		<b>TOTAL 60</b>

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**ADVANCED CONCEPTS IN HORTICULTURE**...prepares the student to analyze and implement progressive methods and techniques at the forefront of the horticulture field, such as permaculture, hydroponics, aquaponics, aeroponics, vertical gardening, growing season extension, biodynamic farming, and agroforestry. COREQUISITE: 10001172 Landscape Maintenance or CONDITION: 190013 Management of Sustainable Landscapes admissions requirements met

**ADVANCED GREENHOUSE AND NURSERY MANAGEMENT**...provides the student with managerial skills and experiences to choose, obtain, propagate, grow, maintain, sell, and determine prices for plants in a greenhouse and nursery context. Students will choose an additional greenhouse/nursery topic for advanced study and application. PREREQUISITE: 10001120 Greenhouse and Nursery Production

**BOTANY AND SOIL SCIENCE**...introduces the language and nature of botany and biology and makes them relevant to horticulture and landscaping. It also addresses the interactions of healthy plants and soils and examines the physical, chemical, biological, and management characteristics of soils. COREQUISITE: 10001110 Horticulture-Intro

**GREENHOUSE AND NURSERY PRODUCTION**...provides the student with the knowledge and skills for horticultural production. Students implement efficient, cost-effective, and sustainable methods of horticultural production in the greenhouse, in a variety of other horticulture-related structures, as well as in field scenarios. PREREQUISITES: 10001153 Botany & Soil Science and 10001110 Horticulture Intro

**HORTICULTURE INTRODUCTION**...engages the learner through instructor-led interactive research and presentation while exploring plant growth, development, and ecology; plant classification; plant health care; horticultural crops and production; the horticulture industry and related careers; and principles of design and design implementation.

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skill

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**LANDSCAPE DESIGN STUDIO**...provides the learner with strategies to develop and apply a structured approach to designing landscape space. Fundamentals of the design process are applied including basic site analysis, plan development and detailing, proper plant selection, landscape graphic conventions, and client interactions. Both manual drafting and CAD software are used for design communications. Property lines, topography, site planning, hardscapes, planting plans, and section view graphics are covered.

**LANDSCAPE INSTALLATION 1**...investigates and implements landscape construction techniques including the proper and safe use of landscape tools, plan reading and interpretation, site management, proper planting, and the installation of landscape features.

**LANDSCAPE INSTALLATION 2**...builds upon landscape construction methods learned in Landscape Installation 1. Projects include mixed material patios, retaining walls, water features, sustainable landscape elements, rain gardens, roof gardens, wooden structures, etc. PREREQUISITE: 10001113 Landscape Installation 1

**LANDSCAPE MAINTENANCE**...assists the learner in identification and implementation of appropriate cultural practices while dealing with challenges in the landscape, including pruning techniques, insect/disease/abiotic problems; pesticides; turf issues; and resolving situations in the field. Course includes production, installation, maintenance, and harvest of edible and ornamental plants. PREREQUISITES: 10001110 Horticulture Introduction and 10001153 Botany and Soil Science

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**PLANT COMMUNITIES OF WISCONSIN**...enables the student to experience the diversity of the native plant communities throughout the Lakeshore region of Wisconsin and beyond. This course will involve extensive plant and plant community identification and analysis in the field, as well as native plant community design, restoration and preservation best practices. PREREQUISITE: 10001132 Plants 2 or CONDITION: 190014 Design of Sustainable Landscapes

**PLANTS 1**...introduces ornamental and weedy, woody, and herbaceous plant identification and culture/management through outdoor and indoor applied activities. The course activities focus on plants encountered in landscaping and production in eastern Wisconsin and the Midwest. This is the first course of a two-course series that continues as Plants 2.

**PLANTS 2**...provides the learner with the opportunity to conduct and present research through outdoor-and greenhouse-applied activities on ornamental, woody and herbaceous plants as well as on edible fruits, vegetables, and herbs. Utilizing the environmental campus as well as other field-type experiences, emphasis on plant identification and culture/management as undertaken in Plants 1, is continued. PREREQUISITE: 10001112 Plants 1

**PRINCIPLES OF SUSTAINABILITY**...prepares students to develop sustainable literacy, analyze interconnections among physical and biological sciences and environmental systems, summarize effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal/recycling in the U.S., and analyze approaches used by your community. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**SITE ANALYSIS AND STORMWATER MANAGEMENT**...guides students through site surveys and the inventory and evaluation of physical, biological, water, and cultural resources to determine landscape development potentials and sensitivities to use-impact. Data gathering methods and analysis techniques with stormwater retention, detention, and harvesting projects at various landscape scales from backyard to regional watersheds are employed. Environmental regulations, best management, and design approaches are utilized in project installations. COREQUISITE: 10001121 Landscape Design Studio or CONDITION: 190013 Management of Sust Landscapes or 190014 Design of Sust Landscapes

**SUSTAINABLE HORTICULTURE CAPSTONE**...undertakes independent and group study across the field of horticulture. The learner implements knowledge and skills, and analyzes progress and results. Proposal scope must be approved by the instructor. PREREQUISITES: 10001140 Advanced Concepts in Horticulture or 10001140C2 Adv Concepts in Horticulture and COREQUISITE: 10001147 Advanced Greenhouse and Nursery Management or CONDITION: 190014 Design of Sustainable Landscapes admissions requirements met

**SUSTAINABLE LANDSCAPE MANAGEMENT**...approaches sustainable landscape management from a practical goal-based outlook and implements management and supervisory strategies for "triple bottom-line" sustainability (Environment, Economic, and Social). Extensive project based management opportunities will enable students to employ best management practices. COREQUISITE: 10001172 Landscape Maintenance or CONDITION: 190013 Management of Sustainable Landscapes

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

## Program Number 10-499-5 Associate Degree in Applied Science • Varies

### ABOUT THE DEGREE

In response to requests for academic recognition of registered apprenticeship training in the state of Wisconsin, the Wisconsin Technical College System provides a Technical Studies—Journeyworker Associate Degree in Applied Science. The Technical Studies—Journeyworker degree is designed to support lifelong learning and accelerate the achievement of individual career goals. Transferability of the Technical Studies portion of this 60-credit associate degree to four-year institutions will be based on the accepting institution's policies.

### ABOUT APPRENTICESHIP

Apprenticeships are employer-sponsored training programs. You must have a contract before being invited to school. A special application process is used for these programs. Please contact the Apprenticeship Office for the proper forms. Apprenticeship means you earn while you learn. If you want a career in a skilled trade, apprenticeship is the best way to get there. You'll combine on-the-job training with on-campus learning—you'll have the best of both worlds when it comes to learning the skills you need to get ahead. And even better, you'll earn a paycheck while you learn those skills.

### ADVANCEMENT AS A JOURNEYWORKER

As people embark on the path to Journeyworker status in a skilled trade, they often consider the attainment of that card the culmination of their career training. In many cases, this may very well be true. However, in other cases, the holder of a journeyworker card may ask, "What's next?" They may be interested in becoming a business owner or expanding their studies to the bachelor's degree level. There are any number of possible options as one builds a career in the skilled trades. If your career path takes you on a route where a degree beyond the journeyworker card is necessary, then this degree is designed for you.

### DEGREE COMPLETION REQUIREMENTS

- Possess a Wisconsin Apprenticeship Completion Certificate issued by the Department of Workforce Development—Bureau of Apprenticeship Standards.
- Complete all WTCS apprentice-related technical instruction. Possession of the DWD—BAS Wisconsin Apprentice Completion Certificate AND successful completion of all coursework fulfills the 39-credit minimum technical studies requirement of the Technical Studies—Journeyworker Associate Degree in Applied Science.
- Meet the WTCS Associate Degree in Applied Science requirement for a minimum of 21 credits of General Education.
- Successful completion of Accuplacer test.

### CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### APPROXIMATE COSTS

• \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### CONTACT

Don Geiger, Advisor  
920.693.1378 • [donald.geiger@gotoltc.edu](mailto:donald.geiger@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Occupational Specific</b>		
10499100	BAS/BAT Apprenticeship Completion	39
<b>General Education (21 Credits)</b>		
	Communication: 6 Credits Required	6
	Social Science: 3 Credits Required	3
	Behavioral Science: 3 Credits Required	3
	Math OR Science: 3 Credits Required	3
	General Education Electives: 6 Credits Required	6
		<b>TOTAL 60</b>

LTC students must earn a grade of C (2.0) or better in each course and a minimum 2.5 grade point average to receive the certificate.

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**BAS/BAT APPRENTICESHIP COMPLETION**...requires the completion of a BAS approved apprenticeship which includes a minimum of 400 hours of paid related instruction.

Program Number 50-439-3

5-Year Contract

Work Hours (including related instruction): 10,000

Related Instruction Hours: 576 • Night School Hours: 8

### ABOUT APPRENTICESHIP

Apprenticeships are employer-sponsored training programs. You must have a contract before being invited to school. A special application process is used for these programs. Please contact the Apprenticeship Office for the proper forms. Apprenticeship means you earn while you learn. If you want a career in a skilled trade, apprenticeship is the best way to get there. You'll combine on-the-job training with on-campus learning—you'll have the best of both worlds when it comes to learning the skills you need to get ahead. And even better, you'll earn a paycheck while you learn those skills.

### ABOUT THE CAREER

Tool and die makers are vital to the metal-working industry because they produce the tools, dies, and special grinding and holding devices used in mass production. The Tool and Die Apprenticeship program is an employer-sponsored, hands-on training program. If you like working with mechanical technology/ manufacturing processes and you value and can work with exacting precision, your talents fit perfectly with a career as a journey-level tool and die maker.

### CAREERS

Graduates of LTC's Tool and Die Apprenticeship program work as journey-level tool and die makers in a variety of manufacturing/industrial settings.

### INDUSTRIAL APPRENTICE ACCEPTANCE REQUIREMENTS

- Determined by employer
- Wisconsin Apprentice Contract

### PROGRAM OUTCOMES

- Apply basic safety practices in the machine shop.
- Interpret industrial/engineering drawings.
- Apply precision measuring methods to part inspection.
- Perform basic machine tool equipment setup and operation.
- Perform programming, setup, and operation of CNC machine tools.
- Design jigs and fixtures.
- Summarize practices to produce dies for a variety of operations.

### APPROXIMATE COSTS

Contact the LTC Apprenticeship office or visit [www.gotoltc.edu/apprenticeship](http://www.gotoltc.edu/apprenticeship) for detailed information.

### SPECIAL NOTE

You must have a sponsoring employer and a contract before attending school.

### CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
50420714	Engineering Drawings for Machine Trades Apprentice 1	1
50420713	Precision Measurement for Machine Tool Trades	1
<b>2</b>		
<b>Term 2</b>		
50420734	Mathematics for Machinist Apprentice 1	1
50420715	Mechanical Hardware and Hand Tools for Machine Trades Apprentice	0.5
50420720	Materials and Cut-Off Machines for Machine Trades	0.5
<b>2</b>		
<b>Term 3</b>		
50420721	Math for Machine Trades 2	0.5
50420722	Engineering Drawings for Machine Trades 2	0.5
50420718	Drilling Machines for Machine Trades Apprentice	0.5
50420717	Milling Machines for Machine Trades Apprentice	0.5
<b>2</b>		
<b>Term 4</b>		
50420724	CNC Programming and Planning for Machine Trades	1
50420716	Turning Machines for Machine Trades Apprentice	0.5
50420723	Intro to CAM for Machine Trades Apprentice	0.5
<b>2</b>		
<b>Term 5</b>		
50420725	Basic CAD/CAM for Machine Trades Apprentice	1
50420726	Jig and Fixture Design for Machine Trades Apprentice	0.5
50420719	Grinding Machines for Machine Trades Apprentice	0.5
<b>2</b>		
<b>Term 6</b>		
50420733	CNC Operations for Machine Tool Trades Apprentice	1
50420727	Geometric Design and Tolerancing for Machine Trades	0.5
50420731	Metallurgy for Machine Trades Apprentice	0.5
<b>2</b>		
<b>Term 7</b>		
50420732	Electrical Discharge Machining for Machine Trades	1
50420728	Basic Stamping Diemaking for Machine Trades	1
<b>2</b>		
<b>Term 8</b>		
50420730	Stamping Die Design Applications for Machine Trades Apprentice	1
50420729	Mold Making for Machine Trades Apprentices	1
<b>2</b>		

**TOTAL 16**

**BASIC CAD/CAM FOR MACHINE TRADES APPRENTICE...** is designed to provide concepts and techniques used in computer-aided design (CAD) and computer-aided manufacturing (CAM) as part of their related instruction. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**BASIC STAMPING DIEMAKING FOR MACHINE TRADES...** introduces the basics of stamping diemaking. Topics include basic terminology, blanking, piercing, bending and related basic operations. In addition, learners will discover the basics of the theory and background knowledge related to stamping diemaking. CONDITION: 504393 Tool and Die Apprentice Program Requirements Met

**CNC OPERATIONS FOR MACHINE TOOL TRADES APPRENTICE...** will examine CNC related operations and safety. Course competencies include classifying types of equipment, comparing CNC tooling, setup, and work holding operations. Additional CNC programming skill development is included in the course. CNC controls and communications are explored as well. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**CNC PROGRAMMING AND PLANNING FOR MACHINE TRADES...** is a classroom introduction to CNC programming for apprentices, with a focus on CNC turning and milling centers. Apprentices will create set up sheets, develop tool lists, calculate speeds and feeds, assign tool offsets and write CNC program. CONDITION: 504393 Tool & Die Apprentice or 504202 Machinist Apprentice Prog Requirements Met

**DRILLING MACHINES FOR MACHINE TRADES APPRENTICE...** focuses on the safety, terminology, construction and operations of drilling machines in the metal-working industry. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**ELECTRICAL DISCHARGE MACHINING FOR MACHINE...** is designed to give a basic understanding of the theory and process of sinker and wire EDM in toolmaking. This course uses the EDM Technical Manual distributed by POCO Graphite, Inc., which contains the most current information available in industry. CONDITION: 504393 Tool and Die Apprentice Program Requirements Met

**ENGINEERING DRAWINGS FOR MACH TRADES APPRENTICE 1...** will acquaint the apprentice with the interpretation of engineering prints and other technical and manufacturing documentation. The primary focus of the course will be on that part of manufacturing most closely related to machining and tooling. Background information is provided relative to the process used to create and finish the product or piece part on the prints being studied. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**ENGINEERING DRAWINGS FOR MACHINE TRADES 2...** prepares the learner to interpret manufacturing prints to extract detailed information about threads, sections, auxiliary views, fasteners, surface finishes, welding symbols, assembly, geometric location, and tolerances. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**GEOMETRIC DESIGN AND TOLERANCING FOR MACHINE TRADES...** will acquaint the apprentice with the skills to interpret the geometric dimensions and tolerances found on engineering drawings and in other industrial documents. Instruction concentrates on interpreting the symbols, identifying tolerance zones and determining ways to check parts for conformity to the specified geometric controls. Reference is made to ASME Y14.5M - 1994. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**GRINDING MACHINES FOR MACHINE TRADES APPRENTICE...** focuses on the safety, terminology, construction, and operation of grinding machines in the metal working industry. It instructs apprentices in the use of traditional grinding machines and the attachments and accessories frequently encountered in manufacturing operations that use the common grinding processes. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**INTRO TO CAM FOR MACHINE TOOLS TRADES APPRENTICE...** is widely used in industry for creating G&M code programs for CNC machines. In this course the learner will explore the Mastercam interface. You will be determining the proper post processors for the work being done. Create and edit basic geometry. Create and edit tool paths for basic operations. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**JIG AND FIXTURE DESIGN FOR MACHINE TRADE APPRENTICE...** introduces the apprentice to the concepts of jig and fixture design as part of their apprentice related instruction. Topics include the basic elements of tool design, jig and fixture application, and the actual design of tooling. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**MATERIALS AND CUTOFF MACHINES FOR MACHINE TRADES...** prepares the learner to identify metal composition and classification, follow cutoff machine tool safety rules, operate horizontal cutoff machine tools, and operate vertical machine tools. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**MATH FOR MACHINE TRADES 2...** prepares the learner to interpret symbols used in algebraic expressions, solve equations by the rearrangement of formulas, use formulas, solve unknown angles using angular principles, and solve for the angles and length of sides in right triangles. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**MATHEMATICS FOR MACHINIST APPRENTICE 1...** provides applied mathematics instruction from a review of basic arithmetic; basic algebra; applications based on geometry; right triangle trigonometry and oblique angle trigonometry; and compound angles. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice program requirements met

**MECHANICAL HARDWARE & HAND TOOLS FOR MACHINE TRADES APPRENTICE...** provides instruction for the apprentice in the recognition, selection, and operation of mechanical hardware and hand tools. Apprentices are taught to use outside sources to select correct component or tool sizes, characteristics, and operating parameters. Apprentices will sharpen drills and single point cutting tools. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**METALLURGY FOR MACHINE TRADES APPRENTICES...** prepares the learner to interpret the properties of ferrous and non-ferrous materials as well as how to heat treat and test the hardness of ferrous materials. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**MILLING MACHINES FOR MACHINE TRADES APPRENTICE...** will instruct apprentices on the basic principles of vertical and horizontal milling machines for the machine tool trade. Instruction includes safety, basic parts and functions of the machines, work holding devices, tooling requirements, and feeds and speeds. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**MOLD MAKING FOR MACHINE TRADES APPRENTICES...** introduces the apprentice to the basic mold die making process consisting of mold construction, components, and materials. CONDITION: 504393 Tool and Die Apprentice Program Requirements Met

**PRECISION MEASUREMENT FOR MACHINE TOOL TRADES...** is designed to acquaint the apprentice with the measurement systems and tools most frequently used in layout and machining processes. Learning outcomes relate to semi-precision through super-precision measuring tools and equipment combined with opportunities to investigate new technologies. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

**STAMPING DIE DESIGN APPLICATIONS FOR MACHINE TRADES APPRENTICE...** provides the stamping die maker apprentice with the opportunity to design from part specifications two elementary stamping dies. This course provides instruction for the tool and die, stamping die and mold makers apprenticeship. CONDITION: 504393 Tool and Die Apprentice Program Requirements Met

**TURNING MACHINES FOR MACHINE TRADES APPRENTICE...** will acquaint the apprentice with the terminology, methods, and operations for turning machines used in the metal-working industry. Apprentices will learn to perform calculations needed to operate turning machines including speed and feed calculations. Apprentices will make calculations necessary to setup a turning machine for screw threads and taper operations. CONDITION: 504393 Tool and Die Apprentice or 504202 Machinist Apprentice Program Requirements Met

## Program Number 31-442-1 Technical Diploma • One Term

### ABOUT THE PROGRAM

Evidence of welders' work is all around us—everything from battleships, cars, and piping to the amazing dome on the U.S. Capitol Building. If you like hands-on work, have solid math and reading skills, are dedicated to accuracy, and have an eye for detail, welding is the perfect career for you.

### PROGRAM OUTCOMES

- Demonstrate industry-recongnized safety practices.
- Interpret welding drawings.
- Produce shielded metal arc welds (SMAW).
- Produce gas metal arc welds (GMAW).
- Produce flux core welds.
- Produce gas tungsten arc welds (GTAW).
- Perform thermal cutting.

### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

### SPECIAL NOTE

This program is available in a part-time evening and full-time day offering. All classes meet the American Welding Society requirements.

### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
31442300	Welding Introduction	1
31442308	Welding Metallurgy	1
31442350	Welding Hand/Power Tools	1
31442351	Welding Measurement	1
31442310	Welding Shielded Metal Arc 1 (Stick)	1
31442312	Welding Shielded Metal Arc 2 (Stick)	1
31442314	Welding Shielded Metal Arc 3 (Stick)	1
31442316	Welding Shielded Metal Arc 4 (Stick)	1
31442320	Welding Gas Metal Arc 1 (Wire/Mig)	1
31442322	Welding Gas Metal Arc 2 (Wire/Mig)	1
31442324	Welding Gas Metal Arc 3 (Wire/Mig)	1
31442326	Welding Gas Metal Arc 4 (Wire/Mig)	1
31442304	Welding Submerged Arc (SAW)	1
31442330	Welding Gas Tungsten Arc 1 (Heli-Arc/TIG)	1
31442332	Welding Gas Tungsten Arc 2 (Heli-Arc/TIG)	1
31442334	Welding Gas Tungsten Arc 3 (Heli-Arc/TIG)	1
31442336	Welding Gas Tungsten Arc 4 (Heli-Arc/TIG)	1
31442318	Pipe Welding Fundamentals	1
31442382	Welding Math 1	1
31442385	Welding Print Reading	1
31442340	Welding Advance Process 1	1
31442342	Welding Advance Process 2	1
31442357	Welding Fabrication Introduction	2
10106116	Computer Essentials	1
31801359	Communication Skills for the Workplace	2

**TOTAL 27**

## *Curriculum Modifications Pending State Approval*

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



**COMMUNICATION SKILLS FOR THE WORKPLACE...**prepares the student to develop paper job-search tools and job-related writing skills to increase 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.

**COMPUTER ESSENTIALS...**covers computer technology and basic computer skills for the student who is just starting classes at LTC. This course will include topics related to uses of computer hardware and software, internet searching, e-mail, MyLTC, online courses, and an introduction to documents and presentations.

**PIPE WELDING FUNDAMENTALS...**demonstrates safe shop working practices. The learner will weld pipe to plate in the 2F, 5F and 6F positions while using the SMAW, GMAW, FCAW and GTAW welding processes. Students will weld pipe groove welds in the 1G, 2G, 5G and 6G positions while using the SMAW, GMAW, FCAW and GTAW welding processes. COREQUISITES: 31442326 Wldg Gas Metal Arc 4, 31442316 Wldg Shielded Metal Arc 4, and 31442336 Wldg Gas Tungsten Arc 4

**WELDING ADVANCE PROCESS 1...**is a student selected welding process. Student will begin to use that process to weld in all positions including pipe. Learner will prepare to become a certified welder. COREQUISITE: 31442326 Welding Gas Metal Arc 4 or 31442316 Welding Shielded Metal Arc 4 or 31442336 Welding Gas Tungsten Arc 4

**WELDING ADVANCE PROCESS 2...**is a student selected welding process. In it the student will learn to use that process to weld in all positions including pipe. The learner will have the opportunity to become a certified welder in the chosen welding process. COREQUISITE: 31442340 Welding Advance Process 1

**WELDING FABRICATION INTRODUCTION...**introduces the learner to various methods of steel fabrication. The learner will produce steel fabrications from drawings which includes the learner's ability to read and interpret drawings, sketches using appropriate welding symbols, follow written procedures, and cut parts to proper size. The learner will fit simple assemblies, and will pass workmanship tests using GMAW, FCAW and GTAW welding processes. COREQUISITE: 31442385 Welding Print Reading and 31442342 Welding Advance Process 2 or 31442342S3 Welding Advance Process 1B (Stick) or 31442342M3 Welding Advance Process 1B (Mig) or 31442342T3 Welding Advance Process 1B (Heli-Arc/Tig)

**WELDING GAS METAL ARC 1...**prepares the learner to demonstrate safe shop work practices; learners will perform set up and shut down of GMAW and FCAW equipment; weld mild steel using the GMAW and FCAW welding processes, and weld in all positions using the GMAW process. COREQUISITE: 31442300 Welding Intro or 31442346 Industrial Maint Welding Intro or 31442345 Auto Servicing Welding

**WELDING GAS METAL ARC 2...**will use safe shop work practices while producing 3/4" fillet welds using the FCAW and MCAW welding processes and 1/4" fillet welds while welding tube to plate in the horizontal position. Learners will produce V-groove weldments in all four positions, using .035 hard wire, .052 Flux Core and Metal electrode wires. COREQUISITE: 31442320 Welding Gas Metal Arc 1

**WELDING GAS METAL ARC 3...**will have learners demonstrate safe shop working practices while welding fillet welds in all positions using the FCAW and MCAW welding process. Learners will perform single bevel groove welds and V-groove welds in all positions using the multiple GMAW welding process, and will perform groove welds with and without backing material. COREQUISITE: 31442322 Welding Gas Metal Arc 2

**WELDING GAS METAL ARC 4...**demonstrates safe shop working practices, while welding fillet welds in all positions using the FCAW and MCAW welding process. Students will perform single bevel groove welds and V-groove welds in all positions using the multiple GMAW welding process. Students will weld pipe to plate in the 5 and 6F position using the FCAW welding process. COREQUISITE: 31442324 Welding Gas Metal Arc 3

**WELDING GAS TUNGSTEN ARC 1...**prepares the learner to demonstrate safe shop work practices, weld mild steel, stainless steel and aluminum in the flat position or horizontal positions using the GTAW process. COREQUISITE: 31442300 Welding Intro or 31442346 Industrial Maint Welding Intro or 31442345 Auto Servicing Welding

**WELDING GAS TUNGSTEN ARC 2...**prepares the learner to demonstrate safe shop work practices while welding mild steel, stainless steel and aluminum in the horizontal and vertical up positions using the GTAW process. The learner will be introduced to the GTAW Pulse welding process while welding mild steel in the 2F position. COREQUISITE: 31442330 Welding Gas Tungsten Arc 1

**WELDING GAS TUNGSTEN ARC 3...**demonstrates safe shop work practices while welding square butt joints on mild steel in the 2F, 3F and 4F positions; weld lap joints on mild steel in the 2F, 3F, and 4F positions using the; weld tee joints on mild steel in the 2F, 3F, and 4F positions using the GTAWP/GTAW process. The learner will also learn how to minimize oxidation in stainless steel during the welding process, welding thin SST in the 1G & 2G positions and proper food grade post weld cleanup to these joints. COREQUISITE: 31442332 Welding Gas Tungsten Arc 2

**WELDING GAS TUNGSTEN ARC 4...**prepares the learner to demonstrate safe shop work practices while welding V-grooves in all positions on 1/4" mild steel plate using either the GTAW or GTAWP welding processes. Learners will make 2-piece and 3-piece corner joints in the 1F, 2F and the 3F positions on 11 ga. HRS and 14 ga. SST. Learners will be introduced to a welding technique called "walking the cup" and will make fillet welds in the 1F position on 1/4" mild steel. COREQUISITE: 31442334 Welding Gas Tungsten Arc 3

**WELDING HAND/POWER TOOLS...**prepares the learner to communicate proper measurement terminology used in industry; will develop safety practices for the work place; proper use of measuring equipment and obtain measurement readings from measuring equipment; layout steel fabrication using hand measuring devices and layout equipment. The learner will inspect a variety of steel fabrications and how to classify industrial fasteners. Learners will have the opportunity to receive up to three NC3/Starrett measuring certifications. COREQUISITE: 31442351 Welding Measurement and 31442300 Welding Intro or 31442346 Industrial Maint Welding Intro or 31442345 Auto Servicing Welding

**WELDING INTRO...**introduces learner to the world of welding, weld shop safety practices, welding terminology, and welding machine setup to industry standards. Learners will be introduced to the 3 major welding processes: SMAW, GMAW, & GTAW and will build skills welding with each process in the flat, and horizontal positions while using the common welding joints found in industry. Learner will process material by using the two major hand held cutting processes-the Oxyfuel & PAC cutting processes.

**WELDING MATH 1...**provides the learner with the necessary skills to solve problems involving whole numbers, fractions, and decimal numbers using pad and pencil and calculator. The course is designed for individualized student needs. This is credit one of the twomath credits need for the Welding program.

**WELDING MEASUREMENT...**prepares the learner to communicate proper measurement terminology used in industry; will develop safety practices for the work place; proper use of measuring equipment and obtain measurement readings from measuring equipment; layout steel fabrication using hand measuring devices and layout equipment. The learner will inspect a variety of steel fabrications and how to classify industrial fasteners. Learners will have the opportunity to receive up to three NC3/Starrett measuring certifications.

**WELDING METALLURGY.....**prepares learner to interpret properties of ferrous materials, heat treat ferrous metals; and test the hardness of ferrous materials. Learner will interpret weld discontinuities and how heat of the weld affects base metal properties.

**WELDING PRINT READING...**prepares the learner to apply orthographic projection principles and AWS welding symbols as they relate to welding fabrications. Students will learn the basics of print reading including alphabet lines, tolerances, bill of materials, title blocks, and revision blocks.

**WELDING SHIELDED METAL ARC 2...**will have the learner demonstrate safe shop work practices; make horizontal padding plate welds on 1/2" mild steel with E7018 electrode; 1/4", 3/8" and 3/4" fillet welds in the horizontal position, 1/4" fillet welds on round and square tubing; open root groove welds with a 3/32" root opening in mild steel in the 1G position; groove welds with 1/4" root opening and 1/4" backup bar on mild steel in the 2G position using E7018 electrode; padding plates and fillet welds in the vertical position. COREQUISITE: 31442310 Welding Shielded Metal Arc 1

**WELDING SHIELDED METAL ARC 3...**teaches the learner to use safe shop work practices; Students will experience the art of welding in the vertical and overhead position. To better understand the vertical and overhead positions, students will perform padding plate welds on mild steel with E7018 electrode; Perform fillet welds in the vertical and overhead positions; Groove welds will also be performed in the vertical and overhead position. Groove welds will be with and without backing.. COREQUISITE: 31442312 Welding Shielded Metal Arc 2

**WELDING SHIELDED METAL ARC 4...**prepares the learner to demonstrate safe shop work practices while making multi pass groove welds in the 1G, 3G, and 4G positions using E7018 electrodes. Students will make multi pass fillet welds to pipe to plate in the 2F, 5F and 6F positions, and will be introduced to pipe welding in the 1G position. COREQUISITE: 31442314 Welding Shielded Metal Arc 3

**WELDING SHIELDED METAL ARC I...**prepares the learner to demonstrate safe shop work practices; make bead on plate welds on mild steel; make padding plate welds on mild steel; make fillet welds in 3/8" mild steel plate in the flat and horizontal positions; and make groove welds in mild steel plate. COREQUISITE: 31442300 Welding Intro or 31442346 Industrial Maint Welding Intro or 31442345 Auto Servicing Welding

**WELDING SUBMERGED ARC (SAW)...**is a common arc welding process. It requires a continuously fed consumable electrode. The molten weld and the arc zone are protected from atmospheric contamination by being "submerged" under a blanket of granular fusible flux. The learner will interpret SAW terminology, setup and shut down of SAW equipment, SAW weld safety; and perform SAW welds in the flat position. COREQUISITES: 31442326 Welding Gas Metal Arc 2B and 31442300 Welding Intro or 31442346 Industrial Maint Welding Intro or 31442345 Auto Servicing Welding

## ABOUT THE PROGRAM

Develop the skills you need to pursue a great career in metal fabrication and welding. In this program, the learner will discover the wonderful world of welding and fabrication through the use of the three major electrical welding processes; Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), and Gas Tungsten Arc Welding (GTAW). Learners will weld in all positions preparing you for a career in many fields of work, including manufacturing, shipbuilding, custom fabrication and pipe welding. Learners will perfect their welding technique on mild steel, stainless steel and aluminum with a thickness range of 16 gauge up to one inch thick. Learners will perfect their weld quality techniques by using visual inspection and destructive testing. Throughout this program, the learner will apply math and print reading to today's industry standards. In this technical diploma, learners will set up, program, and use metal cutting and forming equipment to produce steel fabrication to industry specifications. Students will be introduced to Lean manufacturing by applying their welding and fabrication skills in an automated fabrication cell to include robotic welding.

## PROGRAM OUTCOMES

- Demonstrate industry recognized safety practices.
- Form materials to detailed drawings.
- Cut materials to detailed drawings.
- Join materials to detailed drawings.
- Layout components/assemblies.
- Inspect product.

## CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

## ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

## PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, and complete Program To Do's.

## APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

## FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

## CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
31442300	Welding Introduction	1
31442308	Welding Metallurgy	1
31442350	Welding Hand/Power Tools	1
31442351	Welding Measurement	1
31442310	Welding Shielded Metal Arc 1 (Stick)	1
31442312	Welding Shielded Metal Arc 2 (Stick)	1
31442314	Welding Shielded Metal Arc 3 (Stick)	1
31442316	Welding Shielded Metal Arc 4 (Stick)	1
31442320	Welding Gas Metal Arc 1 (Wire/Mig)	1
31442322	Welding Gas Metal Arc 2 (Wire/Mig)	1
31442324	Welding Gas Metal Arc 3 (Wire/Mig)	1
31442326	Welding Gas Metal Arc 4 (Wire/Mig)	1
31442304	Welding Submerged Arc (SAW)	1
31442330	Welding Gas Tungsten Arc 1 (Heli-Arc/TIG)	1
31442332	Welding Gas Tungsten Arc 2 (Heli-Arc/TIG)	1
31442334	Welding Gas Tungsten Arc 3 (Heli-Arc/TIG)	1
31442336	Welding Gas Tungsten Arc 4 (Heli-Arc/TIG)	1
31442318	Pipe Welding Fundamentals	1
31442382	Welding Math 1	1
31442385	Welding Print Reading	1
31442340	Welding Advance Process 1	1
31442342	Welding Advance Process 2	1
31442357	Welding Fabrication Introduction	2
10106116	Computer Essentials	1
31801359	Communication Skills for the Workplace	2
		<b>27</b>

<b>Term 2</b>		
31442301	Advanced Pipe Welding 1	1
31442303	Advanced Pipe Welding 2	1
31442305	Advanced Pipe Welding 3	1
31442325	Advanced Pipe Welding Processes	1
31442307	Measurement for Fabricators	1
31420336	Machine Tool Drills	1
31420350	Machine Tool Mills 1A	1
31420340	Machine Tool Lathes 1A	1
31442309	Print Reading for Fabricators	1
31442311	CWI Prep 1	1
31442313	CWI Prep 2	1
31442315	CWI Prep 3	1
31442317	CWI Prep 4	1
31620333	Intro to Robotics 1	1
31620335	Intro to Robotics 2	1
31442327	Robotic Welding 1	1
31442329	Robotic Welding 2	1
31442331	Fabrication 1	2
31442333	Fabrication 2	2
31442335	Fabrication Design and Application	2
31449301	OSHA 30	1
31442384	Weld Math 2	1
10606101	Basic Mechanical Drafting	2
		<b>27</b>

**TOTAL 54**

## *Curriculum Modifications* *Pending State Approval*

*Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 rates and are subject to change prior to the start of the academic year.*



Please see *Industrial Welding for Term 1 course descriptions.*

**ADVANCED PIPE WELDING 1**...will have learners producing quality pipe welds in the flat and horizontal positions. Pipe to Pipe and Socket welds will be made by using Gas Metal Arc Welding, Shielded Metal Arc Welding and the Gas Tungsten Arc Welding processes. Learners will use WPS's (welding procedure specifications sheet) of pipe welding for mild steel in accordance with various welding codes. COREQUISITES: 31442326 Wldg Gas Metal Arc 4, 31442316 Wldg Shielded Metal Arc 4, and 31442336 Wldg Gas Tungsten Arc 4

**ADVANCED PIPE WELDING 2**...will have learners weld pipe to pipe and socket welds in the 4F, 5F, and 5G positions. Pipe to Pipe and Socket welds will be made by using the Flux Core Arc Welding, Shield Metal Arc Welding and the Gas Tungsten Arc Welding processes. Learners will use WPS's (welding procedure specifications sheet) of pipe welding for mild steel in accordance with various welding codes. COREQUISITE: 31442301 Advanced Pipe Welding 1

**ADVANCED PIPE WELDING 3**...will teach learners to weld pipe to pipe and socket welds in the 6F and 6G positions. Pipe to Pipe and Socket welds will be made by using the Flux Core Arc Welding, Shield Metal Arc Welding and the Gas Tungsten Arc Welding processes. Learners will use WPS's (welding procedure specifications sheet) of pipe welding for mild steel in accordance with various welding codes. COREQUISITE: 31442303 Advanced Pipe Welding 2

**ADVANCED PIPE WELDING PROCESSES**...instructs the learner to weld a piping spool project. They will layout, cut, grind, bevel, fit and pressure test. The spool project will be welded using the GTAW, SMAW, GMAW and the FCAW processes. The learner will have the opportunity to test for the state certification in the 6G pipe position. The learner will choose either the SMAW or the GMAW/FCAW welding processes. All welding will be completed using welding practices and will be in accordance with the AWS and ANSI steel code. COREQUISITE: 31442305 Adv Pipe Welding 3

**BASIC MECHANICAL DRAFTING USING AUTOCAD**...provides the learner with the skills to utilize AutoCAD's drawing editor, viewing commands; apply coordinate entry methods, AutoCAD file commands; utilize draw commands, modify commands; create and edit text, prints & plots; apply geometric construction to solve a drawing problem; utilize selection sets, duplicating modify commands, layers & objects properties, blocks; apply principles of orthographic and multi view projection.

**CWI PREP 1**...prepares the learner with information on nondestructive examination methods applicable to common welding processes. It will assist welding inspectors and welding educators with knowledge of welding and inspection fundamentals useful on the jobsite. It will prepare exam candidates for Part A (Fundamentals) of the AWS-CWI exam. Students will be exposed to safe practices, metric practices, and metal joining and cutting processes, terminology weld joint geometry, welding and inspection symbols.

**CWI PREP 2**...will teach the learner the application of documents governing welding inspection and qualification. Welding metallurgy, metal properties and destructive testing will be taught. The learner will demonstrate proper evaluation of weld and base metal discontinuities. The learner will be introduced to VT and other NDE methods. COREQUISITE: 31442311 CWI Prep 1

**CWI PREP 3**...provides hands-on training in the use of weld measurement tools and weld replicas to determine the sizes of various weld discontinuities and compare their findings to the codebook to determine the acceptability or rejection criteria; sample practical examination to prepare test candidates for Part B (Practical Applications) of the AWS-CWI exam; use inspection tools, ensure compliance with the code, proper documentation, and why visual inspection can be the most effective NDE techniques. COREQUISITE: 31442313 CWI Prep 2

**CWI PREP 4**...prepares the learner for proper navigation of the AWS D1.1 code, including qualification of welding procedures for welds containing filler-metal additions, design and preparation of the joint for production welding, nondestructive testing and acceptance standards, and automatic welding with and without filler-metal additions, attendees will practice open codebook testing under time constraints. COREQUISITE: 31442315 CWI Prep 3

**FABRICATION 1**...teaches the basics of metal fabrication safety, production, measuring, hand tools, and layout. Learn how to use shears, forming, press brakes, box and pan brakes, and slip rollers. Learners will demonstrate proficiency in metal fabrication through related projects. COREQUISITE: 31442307 Measurement for Fabricators and 31442309 Print Reading for Fabricators

**FABRICATION 2**...will teach the advanced process of forming product using automated and manual equipment. Demonstrate proficiency of forming by choice of tooling, calculations and sequence of forming. COREQUISITE: 31442331 Fabrication 1 Fabrication Design and Application...will have learners set-up, program, operate, weld, assemble, inspect, and finish/coat to complete metal fabrication projects and provide shop routings to demonstrate comprehension of process control in a manufacturing facility. Maintain safety in the shop for all operations with hand tools and machinery while providing written documentation for machine safety to prove comprehension. COREQUISITE: 31442333 Fabrication 2

**INTRODUCTION TO ROBOTICS 1**...prepares the learner to identify the component parts of a robot; describe teach pendant and robot functions; power up the robot control in proper sequence; jog in Joint and Cartesian movement; establish robot axis soft limits; identify axis movements; navigate the teach pendant to set up the robot for desired movement; demonstrate working knowledge of arm speed and inching control.

**INTRODUCTION TO ROBOTICS 2**...prepares the learner to define the Frames of reference used by the coordinate system; create multiple Tool Frames; create a program file; write a functional motion instruction; edit an existing program; demonstrate the use of a wait statement; demonstrate the use of a Call statement; demonstrate the use of an Output statement; and upload and download program memory files. COREQUISITE: 31620335 Introduction to Robotics 1

**MACHINE TOOL DRILLS**...prepares the learner to interpret the attributes of hole-producing tools, follow drilling machine tool safety rules, identify drilling machine tool components, and operate sensitive drilling machine tools. COREQUISITE: 31420310 Machine Tool Hand Tools or 31420394 Ind Mtnc Machine Tool Intro or 10420194 Machine Tool Introduction

**MACHINE TOOL LATHES 1A**...introduces the student to the characteristics and attributes of turning tools: follow engine lathe safety rules, identify engine lathe components, perform facing and center drilling operations, perform turning operations. COREQUISITE: 31420310 Machine Tool Hand Tools or 31420394 Ind Mtnc Machine Tool Introduction or 10420194 Machine Tool Introduction

**MACHINE TOOL MILLS 1A**...prepares the learner to identify vertical milling machine components, select cutting tools and workholding device(s), apply safety rules, set up the vertical milling machine, and mill square surfaces. COREQUISITE: 31420310 Machine Tool Hand Tools or 31420394 Ind Mtnc Machine Tool Intro or 10420194 Machine Tool Intro

**MEASUREMENT FOR FABRICATORS**...provides the learner with the skills to: Use precision hand held measuring tools and the use semi-precision measuring tools, use of layout and measurement tools to fabricate steel projects.

**OSHA 30**...gives a basic overview of OSHA's role in prevention and elimination of work-related illnesses and injuries. It includes information about employer and employee rights and responsibilities, and a brief look at safety on the job site in relation to cranes, electrical, excavation, fall protection, materials handling, personal protection equipment, stairs-ladders-scaffolds, and power tools.

**PRINT READING FOR FABRICATORS**...prepares the learner to recognize and use pipe welding symbols, dual dimensioning, analyze metric units and how they can impact print reading, Inspection and Testing by the use of destructive testing symbols, and non-destructive testing symbols, understanding the International Standards symbols for welding, interpret Geometric Dimensioning and Tolerancing characteristic and symbols.

**ROBOTIC WELDING 1**...prepares the learner to perform basic robotic welding skills on the five major joints used in industry, how to load weld programs for their welding joints, and demonstrate safety practices associated with robotic welding. COREQUISITE: 31620335 Introduction to Robotics 2

**ROBOTIC WELDING 2**...builds upon learner's knowledge and skill of the world of robotic welding. In this course, students will learn how to weld around pipe that is 2" in diameter and larger, V-grooves and creating fixtures for different welding joints that will be used during this credit. COREQUISITE: 31442327 Robotic Welding 1

**WELDING MATH 2**...prepares the learner with the necessary skills to use scientific calculators for the application of solving problems of ratio and proportion, precision, and accuracy in measurements, unit conversions, direct-length measurements, pre-algebra, and simple and complex equations using algebra concepts. The class is designed for individualized student needs. This is credit two of the two-credits needed for the Welding program. COREQUISITE: 31442382 Weld Math 1 or CONDITION: Welding Math 1 Testout or equivalent

#### ABOUT THE PROGRAM

The wind energy industry is the fastest growing segment of new energy production. The U.S. and Canadian wind industry is experiencing annual growth of 25%. Employers seek skilled technicians for operation and maintenance activities in wind farms. There is also a demand for advanced technicians with U.S. and international wind turbine manufacturers; these include: installation technicians, quality control technicians, and warranty and commissioning technicians. Operation and maintenance positions generally remain with a given wind farm location; other technicians travel extensively with the construction of new wind farms and repair/retrofitting of wind turbines around the world.

#### PROGRAM OUTCOMES

- Install, inspect, test, service, and repair wind turbine components.
- Wear proper Personal Protection Equipment, identify hazards, mitigate said hazards, and safely climb towers.
- Cognitively think and use deductive reasoning as well as manufacturer information while troubleshooting or maintaining a wind turbine.
- Clearly and responsibly communicate appropriate information with stakeholders under minimal supervision.
- Practice the basics of self-evaluation and rescue.

#### CAREER AND EDUCATION ADVANCEMENT OPPORTUNITIES

LTC credits transfer to over 30 universities. For more information visit [gotoltc.edu/future-students/transfer](http://gotoltc.edu/future-students/transfer).

#### ADMISSION TO DO'S

- Work with Career Coach to:
  - Submit application and \$30 fee.
  - Submit official transcripts (high school and other colleges).

#### PROGRAM TO DO'S

- Work with Academic Advisor to:
  - Complete an assessment for placement (Accuplacer or ACT).
  - Complete Functional Abilities Statement of Understanding form.
  - Meet to plan your first semester schedule, review your entire plan of study, discuss placement assessment results and complete any additional enrollment requirements.

#### APPROXIMATE COSTS

- \$134.20 per credit tuition (WI resident) plus \$7.38 per credit student activity fee. \$10 per credit online fee. Material fee varies depending on course. Other fees vary by program. Visit [gotoltc.edu/financial-aid/tuition-and-fees](http://gotoltc.edu/financial-aid/tuition-and-fees) for details.

#### FINANCIAL AID

This program is eligible for financial aid. Visit [gotoltc.edu/Financial-Aid](http://gotoltc.edu/Financial-Aid) or talk with your Career Coach about how to apply for aid.

#### SPECIAL NOTE

This program is an official shared program with students from FVTC, MPTC, and NWTC. Students attend electro-mechanical and general education classes at their local technical colleges. During the summer months, these students attend Wind Energy Technology specific courses at LTC in Cleveland and may graduate with both a degree from their respective colleges as well as a degree in Wind Energy Technology from LTC. Please note that a video conference Intro to Wind Systems course runs each fall and spring as a prerequisite to the summer term. LTC welcomes transfer students who are graduates of electro-mechanical and energy-related programs at LTC and other WTCS colleges. Interested transfer/dual-degree students are encouraged to contact the LTC program advisor at 920-693-1378 for more information and to determine eligibility to attend the summer program courses.

#### CONTACT

LTC Career Coach  
920.693.1162 • [CareerCoach@gotoltc.edu](mailto:CareerCoach@gotoltc.edu)

Catalog No.	Class Title	Credit(s)
<b>Term 1</b>		
10482101	Wind Systems Introduction	3
10482104	Wind Technician Tools and Lab 1**	2
10620122	Industrial Wiring	2
10620103	Fluid Power 1	2
10620105	DC Fundamentals	2
10804113	College Technical Mathematics 1A	3
		<b>14</b>
<b>Term 2</b>		
10482110	Energy Introduction	1
10482106	Wind Technician Safety and Lab 2**	3
10620104	Fluid Power 2	3
10620138	Programmable Controllers - Allen Bradley	3
10620110	AC Fundamentals	2
10620141	Industrial Controls & Motors	3
		<b>15</b>
<b>Summer Term</b>		
10482132	10482132 Turbine Maintenance ** OR	2
	10482103 Wind Farm Internship (2 cr) **	2
		<b>2</b>
<b>Term 3</b>		
10482124	Wind Technician 3 Lab **	1
10620130	Mechanical Drive Systems	3
10620164	Electromechanical Systems	2
10620193	NEC Codes	1
10482133	Wind Systems Networking	2
10806154	General Physics 1	4
10801195	Written Communication	3
		<b>16</b>
<b>Term 4</b>		
10482126	Wind Technician 4 **	3
10482128	Wind Technician 5 Lab **	2
10620192	Frequency Drives	1
10620195	Industrial Troubleshooting	1
10809195	Economics OR 10809196 Introduction to Sociology (3 cr)	3
10801196	Oral/Interpersonal Communication	3
10809198	Introduction to Psychology	3
		<b>16</b>
		<b>TOTAL 63</b>

\*\*These class dates and times may be rescheduled due to inclement weather. Students must be within safe-climbing, unequipped body weight of 100 to 275 pounds.

Curriculum and Program Acceptance requirements are subject to change. Program start dates vary; check with your advisor for details. The tuition and fees are approximate based on 2018-2019 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, apply the elements and properties of basic measuring circuits, and describe transformer characteristics.

**COLLEGE TECHNICAL MATHEMATICS 1A...**prepares the student to solve linear, quadratic, and relational equations; graph; formula rearrangement; solve systems of equations; percent; proportions; and operations on polynomials. Emphasis will be on the application of skills to technical problems. PREREQUISITES: 10834110 Elementary Algebra w Apps or 10804107 College Mathematics or 31457318 Ind Mtnr Trades Math or 31420320 Machine Tool Math or math placement assessment equivalent

**DC FUNDAMENTALS...**prepares 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.

**ECONOMICS...**provides the participant with an overview of how a market-oriented economic system operates, and it surveys the factors which influence national economic policy. Basic concepts and analyses are illustrated by reference to a variety of contemporary problems and public policy issues. Concepts include scarcity, resources, alternative economic systems, growth, supply and demand, monetary and fiscal policy, inflation, unemployment and global economic issues. COREQUISITE: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent or CONDITION: 610062 Agribusiness/Financial Basic program admissions met

**ELECTROMECHANICAL SYSTEMS...**prepares the student to communicate with, tune, run, and troubleshoot Allen-Bradley servos; utilize electrical control of hydraulic systems, explore PID control of motor speed; and investigate open and closed loop control systems. PREREQUISITES: 10620104 Fluid Power 2 and 10660110 AC Fundamentals

**ENERGY INTRODUCTION...**provides the learner with an overview of electrical energy generation and distribution and their relationship to the Wind industry. Applications and tours include electricity from the following modes: wind, photovoltaic, coal-fired, hydro, and natural gas. Careers for wind maintenance techs and associated careers are explored.

**FLUID POWER 1...**prepares the learner to identify hydraulic and pneumatic component symbols; adjust a pressure relief valve; analyze the operation of a pilot operated relief valve; analyze Pascal's law; evaluate flow, velocity, work and power in industrial hydraulic and pneumatic circuits; analyze meter-in, meter-out, and bypass flow control circuits; identify basic hydraulic and pneumatic control valves; and assemble hydraulic circuits. COREQUISITES: 10804115 College Technical Math 1 or 10804114 College Tech Math 1A

**FLUID POWER 2...**enhances the learner's ability to read schematics containing fluid power component symbols; assemble systems using schematics; analyze system's operation using a schematic; evaluate the general characteristics and terms of fluids under pressure, fluid conditioning, conductors, reservoirs, accumulators, pressure control; and troubleshoot malfunctioning pressurized systems. PREREQUISITE: 10620103 Fluid Power 1 or 10620155 Industrial Maintenance Hydraulics and Pneumatics

**FREQUENCY DRIVES...**prepares learner to explain the function, construction and troubleshoot frequency drives as well as select and change parameters to meet operational characteristics for the drive application. PREREQ: 10620141 Ind Controls and Motors

**GENERAL PHYSICS 1...**presents the applications and theory of basic physics principles. This course emphasizes problem-solving, laboratory investigation, and applications. Topics include unit conversions and analysis, vectors, translational and rotational kinematics, translational and rotational dynamics, heat and temperature, and harmonic motion and waves. PREREQUISITE: 10804113 College Tech Math 1A, 10804115 College Tech Math 1, or 10804118 Interm Algebra, or Math placement assessment equivalent.

**INDUSTRIAL CONTROLS AND MOTORS...**prepares the learner to select control devices by function and operation; illustrate electrical circuits using symbols, diagrams, and abbreviations; explain the operation of magnetic solenoids and apply motor control techniques and introduces the student to three-phase power motor circuits for industrial applications. COREQUISITE: 10660110 AC Fundamentals and PREREQUISITE: 10620122 Industrial Wiring

**INDUSTRIAL TROUBLESHOOTING...**prepares the learner to conduct effective machine control troubleshooting techniques with an understanding of preventive maintenance methods designed to minimize motor and controls issues between preventive maintenance measures. PREREQUISITE: 10620141 Industrial Controls and Motors

**INDUSTRIAL WIRING...**prepares 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.

**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. PREREQUISITE: Reading placement assessment equivalent or COREQUISITE: 10838105 Intro to Reading and Study Skills

**MECHANICAL DRIVE SYSTEMS...**prepares the learner to use tools and fasteners safely; identify belt and chain drive components; install and adjust belt and chain drives; apply bearing and lubrication information; perform coupling alignment using straight edge, feeler gauge, and dial indicator and laser methods; identify various gear drives; calculate gear ratios; and analyze first-, second-, and third-class levers.

**NEC CODES...**introduces the student to National Electric Codes NFPA 70. Prepares the learner to apply NFPA 70 to motor and control installations and repairs. PREREQUISITE: 10620141 Industrial Controls and Motors

**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: 10838105 Intro Reading and Study Skills or Reading placement assessment equivalent

**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.

**TURBINE MAINTENANCE...**prepares learners to climb, inspect and service wind turbines; use torque fasteners; check gearbox lubrication; add grease to moving and exposed parts; verify good electrical connections; perform an overall "system check" and routine maintenance on a wind energy system; in addition to fault determination and troubleshooting. Students will incorporate wind industry best safety practices, must be prepared to climb multiple times in a day, and work full days outside in varying weather conditions. PREREQUISITES: 10620110 AC Fundamentals, 10620138 Programmable Controllers-Allen Bradley, 10620104 Fluid Power 2 and 10804113 College Tech Math 1A or 10804115 College Tech Math 1 or 10804114 College Tech Math 1B and COREQUISITE: 10482124 Wind Technician 3 Lab

**WIND SYSTEMS INTRODUCTION...**prepares the learner to assess the global energy picture, analyze the causes of wind flow and wind flow properties, write a site assessment, explore small, medium, and large wind turbine designs, assess the environmental effects of wind turbines, perform business assessments for wind energy projects, plan a wind energy project, evaluate the operation and maintenance requirements of wind turbines and their components, and analyze the future of wind energy.

**WIND SYSTEMS NETWORKING...**introduces the wind technician to the applications of SCADA, SCADA control processes, remote connections of generation assets, remote monitoring and remote control, IP addressing, installing and removing programs on PC's, downloading programs on PLC's, proper removal and replacement of communication and control components, as well as connecting to various components for troubleshooting, testing, and component addressing. PREREQUISITE: 10482124 Wind Technician 3 Lab and 10620138 Programmable Controllers - Allen Bradley

**WIND TECHNICIAN 3 LAB...**certifies learner in torque tool techniques with Snap-on tools. Students will apply safe and proper techniques while using various styles of torque wrenches and adapters including hand torque and hydraulic torque wrenches. Students will demonstrate proficiency in performing a variety of maintenance functions on the GE 1.5 nacelle including oil filter changes, generator brush maintenance, and brake pad replacement while following proper safety and LOTO procedures. COREQUISITE: 10482106 Wind Technician Safety and Lab 2

**WIND TECHNICIAN 4...**reviews arc flash requirements, power quality, power factor correction, transformer calculations, electrical distribution, and transmission systems. Student will learn the components and functions of a gearbox; how to inspect bearings and gears, troubleshoot the cooling system, and replace various gearbox components. Student will perform proper maintenance of the yaw system on the GE 1.5 nacelle, and will be responsible for completing troubleshooting/maintenance on the campus's wind turbines. PREREQUISITES: 10482124 Wind Tech 3, 10620141 Industrial Controls & Motors, 10620130 Mech Mech Intro, 10620138 Prog Cont-Allen Bradley and COREQUISITES: 10482132 Turbine Mtnr or 10482103 Wind Farm Intern and 10482128 Wind Tech 5 and 10620140 PLC Advanced

**WIND TECHNICIAN 5 LAB...**familiarizes the students with schematic reading and prepares the student to use schematics for troubleshooting and LOTO. The student will demonstrate proficiency in the use of a multi-meter for troubleshooting and LOTO. The student will demonstrate proficiency in troubleshooting motors and safely changing out motors. In this capstone course, students will responsibly perform troubleshooting and maintenance of the wind turbines on LTC's campus. COREQUISITE: 10482126 Wind Technician 4

**WIND TECHNICIAN SAFETY AND LAB 2...**familiarizes learners with OSHA regulations related to the wind industry and proper methods to eliminate and control hazards. Students receive training in First Aid, CPR, rigging, and confined space and receive the 10-hour OSHA for General Industry and the Tools at Height certifications. Participants develop skills in repair and maintenance of commercial wind turbines. Industry standards, training manuals, and field experience are course standards. COREQUISITE: 10482104 Wind Technician Tools & Lab 1

**WIND TECHNICIAN TOOLS AND LAB 1...**prepares students for work at height and to perform equipment inspections on climbing and fall arrest gear; wear required PPE, PFPE, and apparel while working on wind turbine systems. Students will be SAFER certified in safe tower access, climbing, rescue, and confined space rescue, and will demonstrate proper knot tying and display professionalism and safe working habits during all tasks. Students are trained in the use of hand tools and torque tools. COREQUISITE: 10482101 Wind Systems Introduction

**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. PREREQUISITE: 10831103 Intro to College Wrtg or Writing placement assessment equivalent and COREQUISITE: 10838105 Intro Rdg & Study Skills or Reading placement assessment equivalent

You've got lots of choices when it comes to finding the career that's right for you. LTC's Certificate programs allow you to study a concentrated area with just a few courses and a limited time commitment.

## Accounting

- Tax Preparer

## Advanced Manufacturing

- Advanced Fabrication
- Advanced Pipe Welding
- Certified Welding Inspector (CWI) Prep
- Industrial Networking
- Introduction to Electro Mechanical Technology
- Introduction to Machine Tool(61-420-1)
- Introduction to Maintenance
- Industrial Technician Intermediate - Industry Automation
- Industrial Technician-Automation
- Introduction to Industrial Welding
- Robotic Weld Technician

## Agriculture & Horticulture

- Advanced Dairy Herd Management
- Agribusiness Agronomy Management
- Agribusiness Crops and Soil - Basic
- Agribusiness Livestock Basic
- Agribusiness / Financial Basic
- Dairy Worker Training Certificate
- Design of Sustainable Landscapes
- Agribusiness Management
- Farm Operator
- Farm Operator - Management
- Farm Operator - Production
- Greenhouse and Nursery Basics
- Horticulture Basics
- Management of Sustainable Landscapes

## Business Management & Administration

- Compensation & Benefits
- Employee Selection & Development
- Entrepreneurship & Business
- Human Resources Basics
- ISO 9001 Internal Auditor
- Logistics & Distribution
- Materials Management
- Project Management
- Purchasing
- Lean Six Sigma for Black Belt Certification
- Lean Six Sigma for Green Belt Certification
- Office Technology
- Supervisory Essentials
- Early Childhood Education
- Childcare Professional
- Preschool

## Energy

- Radiation Safety Technician
- Radiation Safety Technician- Basic
- Radiation Safety Technician- Intermediate
- Radiation Safety Technician- Advanced

## Healthcare

- Community Retail Pharmacy Technician
- Employed Pharmacy Technician
- Patient Services Specialist

## Hospitality & Culinary Arts

- Baking
- Hospitality Management Professional
- Hospitality Service
- Restaurant Service Essentials

## Information Technology

- Industrial Networking
- Servers & Networking
- Service Center Technician

## Legal

- Paralegal Post Baccalaureate

## Marketing & Graphic Design

- Customer Service Skills
- Sales Fundamentals Certificate

## Software Learning Center

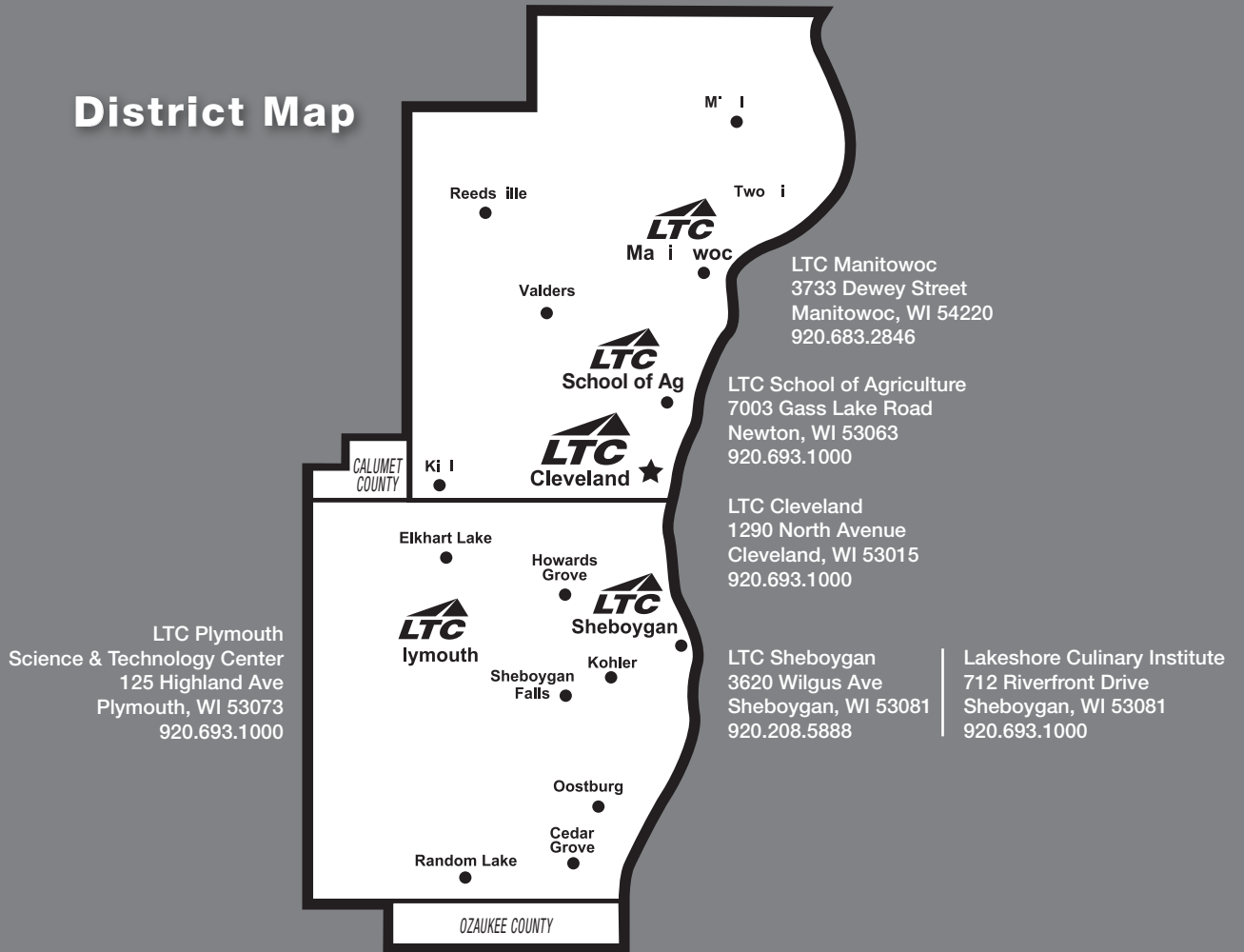
- Microsoft Office Integration
- Microsoft Office Intermediate

## Public Safety

- Critical Care Transport Paramedic
- Registered Nurse to EMT



## District Map



### LAKESHORE TECHNICAL COLLEGE

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