

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 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.

CONTACT

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

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 Mtn 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, Intern 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, Intern 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, Intern 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