

Program Number 10-506-2

Associate Degree in Applied Science • Four Terms

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 receive a BS in Environmental Engineering Technology.

PROGRAM OUTCOMES

- Create environmental reports in accordance with applicable standards.
- Perform safe work practices.
- Examine the effects of pollution.
- Evaluate environmental hazards.
- Utilize problem solving skills for DNR certification.

ADMISSION TO DO'S

- Work with NWTC Admissions Specialist to:
 - Submit application and \$30 fee to NWTC.
 - Complete the online Student Success Questionnaire.
- Meet with NWTC program advisor to discuss program details.
- Meet with LTC program counselor to discuss program details.

FUTURE SEMESTER ENROLLMENT STEPS

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

APPROXIMATE COSTS

- \$143.45 per credit tuition (WI resident) plus \$8.61 per credit student activity fee. Material fee varies depending on course. Other fees vary by program. Visit gotoltc.edu/financial-aid/tuition-and-fees for details.

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 20 credits at the LTC Cleveland campus and the remainder of the credits 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

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Catalog No.	Class Title	Credit(s)
Term 1		
10890101	College 101 <i>(Held at NWTC)</i>	1
10506146	Intro to Environmental Science <i>(Held at NWTC)</i>	3
10506147	Environmental Biology <i>(Held at NWTC)</i>	4
10103121	Excel - Level 1	1
10804113	College Technical Math 1A	3
10806134	General Chemistry	4
		16
Term 2		
10506148	Environmental Chemical Analysis <i>(Held at NWTC)</i>	4
10506168	Intro to GIS <i>(Held at NWTC)</i>	2
10506161	Hydraulics and Hydrology <i>(Held at NWTC)</i>	3
10607105	AutoCAD & Civil 3D <i>(Held at NWTC)</i>	2
10804114	College Tech Math 1B <i>(Held at NWTC)</i>	2
10801195	Written Communications	3
		16
Term 3		
10506175	Wastewater Treatment-Liquid <i>(Held at NWTC)</i>	3
10620220	Pumps: Fluid Moving Devices <i>(Held at NWTC)</i>	1
10506169	Environmental Engineering Internship <i>(Held at NWTC)</i> OR 10481114 Intro to Energy Mgmt (3 cr) OR 10093350 Nutrient Mgmt Planning/Compliance (3 cr)	3
10506176	Wastewater Treatment-Solids & Adv. <i>(Held at NWTC)</i>	3
10801196	Oral/Interpersonal Communications	3
10809198	Introduction to Psychology	3
		16
Term 4		
10506152	Industrial Safety & Emergency Response <i>(Held at NWTC)</i>	3
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
		16
		TOTAL 64

Term 1 & 2: NWTC classes are held on Tuesdays & Thursdays
 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 2022-2023 rates and are subject to change prior to the start of the academic year.

AIR POLLUTION CONTROL SYSTEMS...identifies air quality problems, federal & state regulatory mechanisms, and 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 Technology program

COLLEGE 101...students will utilize digital tools and resources to assess, explore, practice, apply, and evaluate both employability and learning skills. By establishing NWTC cultural values as hallmarks of success in academic, career, and personal settings the course encourages reflective, personalized development of a growth mindset and emphasizes the importance of making wise choices. To maximize the return on investment, students should take this course in their first semester as it identifies key expectations (hidden rules) of higher learning and professional employment.

COLLEGE TECHNICAL MATH 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

COLLEGE TECHNICAL MATH 1B...is a continuation of College Technical Math 1A. Topics include: measurement systems; computational geometry; right and oblique triangle trigonometry; and trigonometric functions on the unit circle. Emphasis will be on the application of skills to technical problems. PREREQUISITE: 10804196 College Tech Math 1A or 10804113 College Tech Math 1A or Math placement assessment equivalent or COREQUISITE: 10804118 Intermediate Algebra with Applications

ENVIRONMENTAL BIOLOGY...examines environmental problems 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 CHEMICAL ANALYSIS...engages students in performing laboratory techniques 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 ENGINEERING INTERNSHIP...provides supervised on-the-job training in the application of theory, skills, and techniques in the Environmental Engineering profession. The internship earns three associate degree credits when 180 hours of work experience has been completed. Minimum instructor approval required.

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 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. PREREQUISITES: 10804113 Col Tech Math 1A, 10804107 Col Math, or 10834110 Elem Algebra or equivalent and COREQUISITES: 10838105 Intro Reading & Study Skills or equivalent

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

HYDRAULICS AND HYDROLOGY...instructs the learner in hydrostatic pressure, continuity of flow, conservation of energy, flow in pipes under pressure, open channel flow, sewer design, rainfall, urban and agricultural runoff. PREREQUISITE: 10804113, College Technical Math 1A with a "C" or better

INDUSTRIAL SAFETY & EMERGENCY RESPONSE...emphasizes 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 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.

INTRO TO ENVIRONMENTAL SCIENCE...is 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...instructs learner in the terminology, software operation and interface, the creation and analysis of digital maps, and explores 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

NUTRIENT MANAGEMENT PLANNING AND COMPLIANCE...prepares student to be proficient in basic soil fertility and fertilizers with an emphasis on manure. This includes a basic understanding of crop fertility requirements and soil pH impacts. Soil lab analysis and field mapping will be integrated through the use of SNAP Plus as an industry standard in nutrient management planning software. Students will be prepared to complete the CCA certified crop advisor exam allowing them to write nutrient management plans. PREREQUISITE: 10090302 Basic Soils

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

PUMPS: INTRO TO FLUID MOVING DEVICES...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...identifies 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, as well as the 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-LIQUID...provides the learner with the physical, chemical, and biological principles associated with treating liquid flow streams in municipal and industrial wastewater treatment facilities. The basic unit processes, control parameters, hydraulics and mathematical problem-solving related to collection systems and treatment facilities are introduced. Laboratory procedures and practices involved with operation of liquid treatment processes. PREREQUISITE: 10506148 Environmental Chem Analysis

WASTEWATER TREATMENT-SOLIDS AND ADVANCED...provides the learner with the physical, chemical, and biological principles associated with advanced treatment of liquid flow streams and treatment of residual solids in municipal and industrial wastewater treatment facilities. The basic unit processes, control parameters, hydraulics and mathematical problem-solving related to advanced liquid and solids treatment facilities are introduced. Laboratory procedures and practices involved with operation of advanced liquid and solids treatment processes. PREREQUISITE: 10506175 Wastewater Treatment-Liquid

WRITTEN COMMUNICATIONS...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