

ABOUT THE PROGRAM

The Environmental Engineering—Waste & Water Technology program prepares learners to maintain the quality of water, air, waste, and other materials through testing, analysis, and monitoring to keep the environment and community healthy and safe. This program will meet a need for environmental engineering technicians in northeast Wisconsin.

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.

ADMISSIONS STEPS

- Work with 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/Counselor to Discuss Program Details

APPROXIMATE COSTS

- \$132 per credit (resident)
- \$198 per credit (out-of-state resident)
- Other fees vary by program (books, supplies, materials, tools, uniforms, health-related exams, etc.) Visit gotoltc.edu/payingforcollege for details.

PLACEMENT SCORES

Accuplacer/ACT scores will be used to develop your educational plan. Contact your program advisor/counselor for details.

SPECIAL NOTE

Northeast Wisconsin Technical College (NWTC) offers its Environmental Engineering—Waste & Water Technology program in cooperation with LTC.

CAREER & EDUCATION ADVANCEMENT OPPORTUNITIES

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

CONTACT

NWTC:
Alana Eder, Academic Advisor
920.498.5616 • alana.eder@nwtc.edu

LTC:
Jenny Beltran, Admissions Specialist
920.693.1127 • jenny.beltran@gotoltc.edu

Catalog No.	Class Title	Credit(s)
Term 1		
10506146	Intro to Environmental Science **	3
10506147	Environmental Biology **	4
10804118	Intern Algebra w/ Apps	4
10806134	General Chemistry	4
10801197	Technical Reporting	3
		18
Term 2		
10506149	Intro to Environ. Compliance **	3
10506148	Environmental Chem Analysis **	4
10620138	Programmable Cntrlrs-Allen Bradley	3
10620157	Hydraulics-Industrial	2
10801195	Written Communications	3
10809195	Economics	3
		18
Term 3		
10506150	Environmental Microbiology **	3
10506151	Wastewater Treatment & Analysis **	4
10506152	Ind. Safety & Emerg. Response **	3
10620130	Mechanisms, Mechanics Intro	3
10413100	Basic Electricity for Trades	3
10413102	Electrical Controls for the Trades	1
		17
Term 4		
10506153	Solid and Hazardous Waste **	4
10506154	Air Pollution Control Systems **	3
10506155	Water Treatment & Analysis **	4
10809172	Intro to Diversity Studies	3
10809198	Intro to Psychology	3
		17
		Total 70

** = Classes held at NWTC
Term 1 & 2: NWTC classes are held on Tuesdays & Thursdays
Term 3 & 4: NWTC classes are held on Mondays & Wednesdays
All other classes are scheduled at LTC

Curriculum and Program Acceptance requirements are subject to change.
Program start dates vary; check with your advisor/counselor for details.



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.

BASIC ELECTRICITY FOR THE TRADES ...provides practical DC/AC concepts to introduce various components, electrical quantities, and measuring values in DC and AC circuits. Circuit measurement of voltage, current and resistance will be taken with analog and digital meters applying basic concepts. The student will learn about electrical theory, electrical safety, basic circuit design, measuring equipment, general wiring practices, motors, and transformers.

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 Accuplacer Reading score of 74 or 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

ENVIRONMENTAL CHEMICAL ANALYSIS ...laboratory techniques are performed to determine the suitability of supply sources and purification processes in the water and wastewater industries. PREREQUISITE: 10-806-134, General Chemistry

ENVIRONMENTAL MICROBIOLOGY ...is 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: 10-506-174, Environmental Biology

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. PREREQUISITE: 10804196 or 10804113 College Tech Math 1A or 10804109 Alg for Gen Chem or 10804121 Tech Math I or 10804195 College Tech Math 1 or 10804115 College Tech Math 1 or equiv or 10834110 Elem Algebra and 10838105 Intro Rdg & Study Skills or equiv

HYDRAULICS INDUSTRIAL ...prepares the learner to identify hydraulic 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 circuits; analyze meter-in, meter-out, and bypass flow control circuits; evaluate the characteristics of hydraulic pumps, motors; directional and control valves; identify basic hydraulic control valves; and assemble hydraulic circuits. PREREQUISITES: Math equivalency requirements met or 31457318 Trades Math Industrial Maint and 31457318T1 Trades Math Industrial Maint 1, 31457318T2 Trades Math Industrial Maint 2 or 10804118 Intern College Algebra or COREQUISITE: 10804114 Tech Math 1B

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.

INTERMEDIATE ALGEBRA WITH APPLICATIONS ...offers the learner algebra content with applications. Topics include properties of real numbers, order of operations, algebraic solution for linear equations and inequalities, operations with polynomial and rational expressions, operations with rational exponents and radicals, algebra of inverse, logarithmic and exponential functions. PREREQUISITES: Accuplacer Math score of 100 and Accuplacer Algebra score of 55 or equivalent or 10834110 Elementary Algebra w Apps and COREQUISITE: 10838105 Intro Reading and Study Skills or CONDITION: Reading accuplacer minimum score of 74 or equivalent

INTRO TO ENVIRONMENTAL COMPLIANCE ...is an introduction to regulatory concepts and requirements for compliance with environmental regulations by governmental and non-governmental entities.

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

INTRO TO PSYCHOLOGY ...introduces students to a survey of the multiple aspects of human behavior. It involves a survey of the theoretical foundations of human functioning in such areas as learning, motivation, emotions, personality, deviance and pathology, physiological factors, and social influences. It directs the student to an insightful understanding of the complexities of human relationships in personal, social, and vocational settings. COREQUISITE:10838105 Intro Reading and Study Skills or Accuplacer Reading score of 74 or equivalent

INTRODUCTION TO DIVERSITY STUDIES ...is a course that draws from several disciplines to reaffirm the basic American values of justice and equality by teaching a basic vocabulary, a history of immigration and conquest, principles of transcultural communication, legal liability and value of aesthetic production to increase the probability of respectful encounters among people. In addition to an analysis of majority/minority relations in a multicultural context, the topics of ageism, sexism, gender differences, sexual orientation, the disabled and the American Disability Act (ADA) are explored. Ethnic relations are studied in global and comparative perspectives. COREQUISITE:10838105 Intro Reading and Study Skills or Accuplacer Reading score of 74 or equivalent

MECHANISMS MECHANICS INTRODUCTION TO ...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.

PNEUMATICS INDUSTRIAL ...prepares the learner to identify pneumatic component symbols, examine the main parts of a pneumatic system; identify air conditioning and distributing equipment; evaluate the characteristics of physical laws that apply to pneumatics; identify the laws governing pneumatics; adjust pressure regulator to specified pressure; evaluate the general characteristics and terms of pressure drop versus flow relationship; evaluate the general characteristics and terms of vacuum generation. COREQUISITES: 10620157 Hydraulics-Industrial or 10620159 Hydraulics 1

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. PREREQUISITE: 10620138 Prog Cntrs/AB or 10620138C1 Prog Cntrs/AB (3 cr)

SOLID & 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.

TECHNICAL REPORTING ...provides students with the skills to prepare and present oral and written technical reports. Types of reports may include lab and field reports, proposals, technical letters and memos, technical research reports, and case studies. Designed as an advanced communication course for students who have completed at least the prerequisite introductory writing course. REREQUISITE:10831103 Intro to College Wrtg or CONDITION: Written Comm Prepared Learner (Accuplacer Wrtg min score of 86 or Equivalent) and COREQUISITE: 10838105 Intro Rdg & Study Skills or CONDITION: Reading Accuplacer min score of 74 or equivalent

WASTEWATER TREATMENT & ANALYSIS ...physical, chemical, and biological principles of operation of water and wastewater treatment systems are studied. The basic unit processes, control parameters, and mathematical problem-solving related to collection systems, treatment facilities, and distribution systems are introduced

WATER TREATMENT & ANALYSIS ...laboratory procedures and practices involved with operation of water and wastewater analysis and treatment including industrial waste treatment technologies. PREREQUISITE: 10-506-151, Water & Wastewater Oper & Mgmt

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 CONDITION: Written Comm Prepared Learner (Accuplacer Wrtg min score of 86 or Equivalent) and COREQUISITE: 10838105 Intro Rdg & Study Skills or CONDITION: Reading Accuplacer min score of 74 or equivalent