

Environmental Training



Corporate and Community Programs

**Fall 2009
PROGRAMS INSIDE!**



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Environmental Training at Delaware Tech. . .

The mission of the Environmental Training Center (ETC) at the Owens Campus of Delaware Technical & Community College is to provide applicable classroom training and technical assistance to Delaware's environmental workforce.

Classroom training consists of credit and non-credit programs for onsite technicians, well drillers, and water and wastewater operators. Included in the non-credit programs are courses that prepare operators to successfully complete the state's rigorous licensing examination. After operators receive their licensure, the ETC provides on-going continuing education classes and seminars.

Credit and Non Credit Courses!

Delaware Technical & Community College

Corporate and Community Programs

Jack F. Owens Campus

P.O. Box 610

Georgetown, DE 19947

302-855-5900

www.dtcc.edu/owens/ccp

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On the Cover: *Instructor Mike Harrington, CET, seated left, works with students in the Basic Microscopy class.*

Regulatory Course Approvals

Courses approved as indicated for the state of Delaware.

Check course descriptions for Md., N.J., Pa., Va. licensing approvals, Del. Onsite licensee approval, Del. Wastewater/Water Operator's approval.

	Hours	Water	Wastewater	Well	Onsite
21st Century Drinking Water Corrosion Control-17	7	•			
21st Century Principles of Water/Wastewater Liquid Chlorination and De-Chlorination-34	7	•	•		
21st Century Ultra Violet Disinfection-35	7	•	•		•
Asset Management Program Basics-29	4	•	•		
Base Level Water Operators Course-32	57	•		•	
Basic Electricity for Operators-17	7	•	•	•	•
Basic Microscopy for Wastewater Operators-14	7		•		•
Biological Nutrient Removal & ENR-24	7		•		•
Biosolids Responsibility-30	7		•		•
Budgeting for Small Utilities-16	4	•	•		
Capital Improvements Planning/Long Term Water & Sewer Capacity-24	4	•	•		
Care and Feeding of Septic Systems-13	3.5		•		•
Chasing the Thermal Demons-22	7	•	•		
Chlorination Disinfection Science-31	7	•	•		•
Chlorination Technology-34	7	•	•	•	•
Chlorine Dioxide Disinfection in the Water/Wastewater Process-25	7	•	•		
Collection Systems Short Course-11	14		•		•
Collection System Troubleshooting-13	7		•		•
Customer Relations for Environmental Technicians-27	7	•			•
Delaware's Hydrogeology and Rocks and Fossils of the Mid-Atlantic-26	7	•		•	•
Disinfection Operations for Water & Wastewater Systems-34	14	•	•		•
DOT Regs Review for Pumpers -20	3				•
Effective Water Distribution System Flushing-22	7	•		•	
Electrical Blueprint Reading for Operators-30	7	•	•	•	•
Electrical Safety and NFPA70E-12	7	•	•		•
Electrical Troubleshooting for Operators-21	7	•	•	•	•
Evaluating Financial Capacity-12	4	•			
Excavation-18	6	•	•		•
Fire Hydrant Operation & Maintenance-15	7	•			
Fundamentals of Septic Filtration and STEP Systems-20	7		•		•
Global Positioning Systems-16	7	•	•	•	•

Regulatory Course Approvals

Courses approved as indicated for the state of Delaware.

Check course descriptions for Md., N.J., Pa., Va. licensing

approvals, Del. Onsite licensee approval, Del. Wastewater/Water

Operator's approval.

	Hours	Water	Wastewater	Well	Onsite
Innovative & Alternative Onsite Systems–29	7		•		•
Inspection Onsite WW Systems–25	7		•		•
Instrumentation and Pumping–6	48		•		•
Intro to Environmental Science & Tech–6	48		•		•
Intro to Mapping and GIS for Operators–28	7	•	•		•
Intro to SCADA–25	7	•	•		•
Intro to Variable Frequency Drives (VFD)–15	7	•	•		•
Math Review for the Maryland & Virginia Wastewater Exam–28	7				
Math Review for the Maryland & Virginia Water Exam–26	7				
Math Review for Wastewater Operators–30	6		•	•	•
Math Review for Water Operators–29	6	•		•	•
NFPA 70E 2009 Standard for Electrical Safety in the Workplace–18	7	•	•		•
NICET Water & Sewer Pipeline Certification Course–9	35	•	•		
Onsite 101–28	7		•		•
Onsite Control Systems–30	7		•		•
Onsite Disposal System Hydraulics–14	7		•	•	•
Onsite License Preparation Course (H)–7	21				•
Onsite Wastewater Treatment and Disposal Systems–28	3		•		•
Operation & Maintenance of the American Manufacturing “DRIP” Irrigation System–11	3		•		•
Operation & Maintenance of the Bio-Microbics FAST Treatment Unit–15	3		•		•
OSHA (1926) Construction Safety Course–9	12	•	•		•
Preparation for Delaware Pump Installers & Well Drillers Exam–10	7	•		•	
Programmable Logic Controllers–8	36	•	•		•
Pump Fundamentals for Well Drillers–8	7	•		•	
Pump Hydraulics–23	7	•	•		•
Pumps: Installation, Maintenance & Repair–26	7	•	•	•	•
Pumps: Motors & Controls–13	6	•	•	•	•
Replacement Onsite Systems–31	4		•		•
Respirator Usage/Lockout-Tagout Procedures/Permit Confined Space Entry–18	8	•	•		•
Reverse Osmosis Fluoridation–12	7	•			

Regulatory Course Approvals

Courses approved as indicated for the state of Delaware.

Check course descriptions for Md., N.J., Pa., Va. licensing approvals, Del. Onsite licensee approval, Del. Wastewater/Water Operator's approval.

	Hours	Water	Wastewater	Well	Onsite
Risers, Baffles and Filters - Installation & Repair-16	4		•		•
Soils-23	7		•		•
Soils Based Approach to Siting Wastewater Disposal-29	4		•		•
State Wastewater Exam "Hurricane" Review Level I-35	7		•		
State Wastewater Exam "Hurricane" Review Levels II, III & IV-36	7		•		
Submersible Pumps-19	7	•	•		•
Surface Water Treatment-33	7	•	•		•
Team Building-26	7	•			•
Ten Little-Known Water/Wastewater Operators' Secrets-33	7	•	•		
Three-Phase AC Power Workshop-20	7	•	•		•
Time and Project Management-24	7	•	•		•
Tips & Tools for 21st Century Water/Wastewater Process Monitoring-27	6	•	•		•
Train the Trainer Designed for Collateral Duty Safety Personnel-19	7	•	•		•
Trenching/Shoring Safety-16	7	•	•		•
Troubleshooting Pumps-22	7.5	•	•	•	•
True Confessions of a Water/Wastewater Operator-23	7	•	•		
Utility Rate Setting & Cost Recovery-20	4	•			
Valves-19	7	•	•		
Verifying the Water, Wastewater Process-33	7	•	•		
Wastewater Math 101-8	14		•		•
Wastewater Operator Certification Review, Level I-7, 32	48		•		•
Wastewater Operator Certification Review, Level II & III-7, 32	48		•		•
Wastewater Systems & Solids Handling-6	48		•		•
Water Operator Certification Disinfection Course-10	30	•			
Water Operator Filtration Endorsement Course for Sand/Greensand Filtration, Reverse Osmosis, Ion Exchange, Activated Carbon-10	30	•			
Water Supply Hydrology, Sources & Water Conservation-21	7	•			
Water Treatment & Chlorine Safety-31	7	•			•
Water/Wastewater Operations for Elected/Appointed Public Officials-14	5	•			
Well Construction Techniques-9	7	•		•	

CREDIT

What is an Associate of Applied Science Degree in Water or Wastewater Technology?

This degree is an in-depth education designed to produce experts and future managers for the professional environmental fields. An intensive program of study combines science and applied technology specific to the field of water and wastewater treatment and management. For more information on credit courses, please call 302-855-5900. You must register in person for credit courses.

Wastewater Systems & Solids Handling

Basic understanding of wastewater systems including primary sedimentation, disinfection, aerobic/anaerobic sludge digestion, oxidation ponds, biofilters/bioreactors, solids handling disposal management, centrifugation, gravity concentration, gravity thickening, filter presses, vacuum presses, incineration, land fill and land application. Laboratory control procedures and sludge conditioning also covered.

Instructor: Sam Schlegel

- ▶ **Approved WW Ops-D. MDE Approved #1498-97-02, 48 (1.5x), P. Approved DE onsite lic. A, B, C, D, E, F, H.**
- ▶ 8/25-12/8, Tuesday, 6-10pm, 16 sessions. ENV 292 251

Intro to Environmental Science & Technology

Introduces environmental science, pollution control and environmental technology. Provides the basic understanding of the normal ecology of the planet and the risks associated with polluting the environment. Environmental pollution and control technology topics include safe drinking water, wastewater treatment, air pollution, solid waste and hazardous waste management.

Instructor: Ann Hobbs

- ▶ **Approved DE WW Ops-D. MDE Approved # 1375-96-06, ALL, 48 (1.5x) Approved DE onsite lic. A, B, C, D, E, F, H.**
- ▶ 8/26-12/9, Wednesday, 6-9pm, 16 sessions. ENV 190 251

Instrumentation and Pumping

Introduction of the instrumentation and pumping process used to monitor and control contemporary water and wastewater treatment

facilities. Discussion topics: Measurement of temperature, pressure, liquid level, flow and the transmission and controller for these parameters, theory, operation and maintenance of pumps.

Instructor: Jim Mooney

- ▶ **Approved DE WW Ops-D. MDE Approved TRE# 1496-97-02, ALL, 48 (1.5x). Approved DE onsite lic. B, C, E, F**
- ▶ 8/27-12/10, Thursday, 6-9pm, 16 sessions. ENV 298 251 251

CERTIFICATION: OWENS CAMPUS

Wastewater Operator Certification Review, Level I

Designed as preparation for state licensing exam. An entry-level course designed for wastewater operators or individuals interested in water quality. Expert instructor utilizes textbook and videos. Text available in bookstore.

Instructor: Jeff Deats

- ▶ **Approved DE WW Ops-D. MDE Approved #1372-96-06, WW 1-6, S; IW 1-5, 7. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-040608-20. Approved VA WWOPS. 48 hrs, 4.8 CEUs.**
- ▶ 8/24-12/14, Monday, 6:30-9:30pm, 16 sessions. \$249. EYI 200 231

Wastewater Operator Certification Review, Level II & III

Prepares students at a more advanced level for state exam.

Excellent instructor. Text available in bookstore.

Instructor: Mark Kondelis

- ▶ **Approved DE WW Ops-D. MDE Approved #1395-96-07 (1.5x) WW 1-6,S; IW 2-5.. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-040609-20. Approved VA WWOPS. 48 hrs, 4.8 CEUs**
- ▶ 8/24-12/14, Monday, 6-9pm, 16 sessions. \$249. EYI 201 231

Onsite License Preparation Course (H)

Prepares an individual to pass the licensing examination for onsite class B (designer), E (installer) and F (hauler). Covers the siting, designing, installation, operation, maintenance and inspection of onsite wastewater treatment systems for Delaware.

Instructor: Hilary Moore

- ▶ **Approved DE onsite lic. A, B, C, D, E, F, H. 21 hrs, 2.1CEUs**
- ▶ 9/2-10/14, Wednesday, 6-9pm, 7 sessions. \$159. EYI 285 231

Wastewater Math 101

Conducted one-hour prior to start of Level I Review. Course teaches all math skills needed to successfully complete the state Level I test. Textbook available in bookstore.

Instructor: Staff

- ▶ ***Approved DE WW Ops-D. MDE Approved #1394-96-07, (1.5x) ALL. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-040611-20. Approved VA WWOPS. 14 hrs, 1.4 CEUs***
- ▶ 9/14-12/14, Monday, 5:30-6:30pm, 14 sessions. \$119. EYI 202 231

Pump Fundamentals for Well Drillers

Topics include: jet pumps, submersible pumps, centrifugal pumps up to 5 hp and how to size/install/troubleshoot them. If you pass this course and Well Construction Techniques and Preparation for the Delaware Pump Installers and Well Drillers Exam course, the instructor will provide his signature needed for state certification.

Instructor: Eric Sackett

- ▶ ***Approved DE Water Ops. Approved MD/DE well drillers. NJ-07-040629-30. 7 hrs, .7 CEUs***
- ▶ 9/17, Thursday, 8:30am-4:30pm, 1 session. \$119. EYI 256 201

Programmable Logic Controllers

Begins with the basics of what a PLC is and does and the fundamentals of programming the device. The course will cover ladder logic theory, PLC programming, Functions-Timer-Counter-Math-Logic-Sequencer, PLC Networks Troubleshooting and Servicing the PLC System. Course is lecture and hands-on using PLCs simulator. Text available in bookstore.

Instructor: Sam Allen

- ▶ ***Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved # 2622-02-09 (1.5x) ALL, NP. Approved DE onsite lic. C, E, F. DE Approval #070518. DE/EE Approved for 10 CE hrs. NJ-07-040619-30. Approved VA WWOPS. 36 hrs, 3.6 CEUs***
- ▶ 9/22-12/8, Tuesday, 6-9pm, 12 sessions. \$275. EYY 216 231

OSHA (1926) Construction Safety Course

This is the 12-hour OSHA Construction Safety Outreach Program. Many large companies in Delaware recognize this training as meeting their safety requirements. An OSHA card is issued upon successful completion.

Instructor: David Eppelheimer

- ▶ *Approved DE WW Ops-I. Approved DE Water Ops. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-050797-31. 12 hrs, 1.2 CEUs*
- ▶ 10/15-10/29, Thursday, 5:30-9:30pm, 3 sessions. \$125. EYI 565 231

Well Construction Techniques

Training for entry-level drillers, apprentices, or water service personnel for well construction and sanitary principles. Topics include: well components, construction methods and unconsolidated formulation. If you pass this course, Pump Fundamentals and Preparation for the DE Pump Installers and Well Drillers Exam, instructor will provide his signature needed for state certification.

Instructor: Eric Sackett

- ▶ *Approved DE Water Ops. Approved MD/DE well drillers. NJ-07-040628-10. 7 hrs, .7 CEUs*
- ▶ 10/20, Tuesday, 8:30am-4:30pm, 1 session. \$119. EYI 257 201

NICET Water & Sewer Pipeline Certification Course **New!**

Prepares students to take the National Institute of Certified Engineering Technicians test to inspect new infrastructure installation for water/wastewater systems. Book given in class. Test conducted at DTCC once every quarter.

Instructor: Dick Eubank

- ▶ *Approved DE Water Ops. Approved DE WW Ops-I. 35 hrs, 3.5 CEUs*
- ▶ 10/26-10/30, Monday- Friday, 8:30am-4:30pm, 5 sessions. \$399. EYI 585 201

How do I determine if a course is approved for water, wastewater, well or onsite?

A chart that lists each of our course offerings is included on pages 3, 4 and 5. Courses are approved as indicated for the state of Delaware. Check course descriptions for Md., N.J., Pa., Va. licensing approvals, Del. Onsite licensee approval, Del. Wastewater/Water Operator's approval.

Water Operator Filtration Endorsement Course for Sand/Greensand Filtration, Reverse Osmosis, Ion Exchange, Activated Carbon

Intermediate level course that prepares students for the State of Delaware Water Operator Certification Exam for filtration systems. Covers the operation of the following filtration related topics: sand filtration, diatomaceous earth, cartridge filtration, micro-filtration, ultra-filtration, reverse osmosis, greensand filters, ion exchange, activated carbon and activated alumina.

Instructor: John Hanley, P.E., P.L.S.

- ▶ ***Approved DE Water Ops. NJ-07-040615-10. 30 hrs, 3.0 CEUs***
- ▶ 10/27-11/24, Tuesday, 9am-3pm, 5 sessions. \$249. EYI 276 201

Water Operator Certification Disinfection Course

Intermediate level course that prepares the student for the State of Delaware Water Operator Certification Examination regarding disinfection systems. Topics include: chlorine gas, hypochlorination, chloramines, ozone, chlorine dioxide, UV, bromine, iodine and regulations.

Instructor: John Hanley, P.E., P.L.S.

- ▶ ***Approved DE Water Ops. NJ-07-040617-10. 30 hrs, 3.0 CEUs***
- ▶ 10/29-12/13, Thursday, 9am-3pm, 5 sessions. \$249. EYI 527 201

Preparation for Delaware Pump Installers & Well Drillers Exam

(Includes preparation for NGWA Exam.) This course is designed to prepare anyone to take the Delaware exam. Topics include: review of all examination topics, Del. regulations and a discussion of industry standards and practices. If you pass this course and the Pump Fundamentals and Well Construction courses, instructor will provide his signature needed for state certification.

Instructor: Eric Sackett

- ▶ ***Approved DE Water Ops. Approved DE onsite lic. A, B, C, D, E, F, H. 7 hrs, .7 CEUs***
- ▶ 11/6, Friday, 8:30am-4:30pm, 1 session. \$119. EYI 259 201

RECERTIFICATION-OWENS CAMPUS

Free Courses This Semester!

*Asset Management
Program Basics*

*Budgeting for
Small Utilities*

*Capital Improvements
Planning/Long Term Water
& Sewer Capacity*

*Evaluating Financial
Capacity*

*Utility Rate Setting &
Cost Recovery*

*Water/Wastewater
Operations for
Elected/Appointed
Pubic Officials*

Collection Systems Short Course

Designed to give collection system operators/maintenance personnel the basic knowledge to operate/maintain wastewater collection systems.

Topics: safety, lateral connections, major system components, proper use and operation of equipment and tools utilized to maintain a system; customer service and terminology.

Instructor: Dick Eubank

▶ **Approved DE WW Ops-I. MDE Approved #4343-08-09, (1.5x) ALL, NP. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-0908104-30. 14 hrs, 1.4 CEUs**

▶ 9/3-9/4, Thursday & Friday, 8:30am-4:30pm, 2 sessions. \$185. EYI 579 201

Operation & Maintenance of the American Manufacturing "DRIP" Irrigation System

An interactive class providing an overview of drip irrigation system function and techniques for proper operation, maintenance, and troubleshooting.

Instructor: Eric Valentine

▶ **Approved DE WW Ops-D. Approved DE Onsite license A, B, C, D, E, F, H. 3 hrs, .3 CEUs**

▶ 9/9, Wednesday, 1-4pm, 1 session. \$49. EYI 542 201

Reverse Osmosis Fluoridation

Provides an in-depth look at reverse osmosis and fluoride.

Topics include applications, evaluation methods for determining performance and safe storage and handling techniques. Also covers membrane processes/parameters/operation/maintenance techniques.

Instructor: Ed Cope

- ▶ **Approved DE Water Ops. MDE Approved #3236-04-11, ALL, P. PADEP #2032. NJ-07-040650-30. 7 hrs, .7 CEUs**
- ▶ 9/10, Thursday, 8:30am-4:30pm, 1 session. \$115. EYI 504 201

Electrical Safety and NFPA 70E **New!**

Gain a basic understanding of NFPA 70E (Electrical Safety in Workplace Standards) and basic electrical safety. Topics include: wastewater/water laboratory electrical safety requirements, NFPA 70E requirements, electrical safety hazard compliance, ARC flash protection, AFCI and GFCI circuit protection devices, programmable logic controller safety.

Instructor: Sam Allen

- ▶ **Approved DE WW Ops-I. Approved DE Water Ops. MDE Approved #4437-09-04, 7 (1.5x) ALL: SUPERS, NP. Approved DE onsite lic. A, B, C, D, E, H. NJ-07-0409106-31. 7 hrs, .7 CEUs**
- ▶ 9/11, Friday, 8:30am-4:30pm, 1 session. \$125. EYI 586 201

Evaluating Financial Capacity **Free!**

An outline of the principles of sound financial capacity for small utilities. Learn steps to evaluate and measure financial capacity and the reasons each evaluation criterion is important. While most of the discussion pertains to water utilities, the majority of the methods and evaluations can be applied also to wastewater utilities.

Instructor: Jean Holloway

- ▶ **Approved DE Water Ops. MDE Approved #4160-08-02, Supers, ALL, NP. NJ-07-0908105-30. 4 hrs, .4 CEUs**
- ▶ 9/15, Tuesday, 8:30am-12:30pm, 1 session. FREE. EYI 580 201

Pumps: Motors & Controls

Review care/maintenance requirements for pumping systems, associated control panels and motors. Major emphasis on troubleshooting, both mechanical and electrical.

Instructor: Steve Elder

- ▶ *Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #430-89-05, 6 (1.5x) ALL, NP. Approved MD/DE well drillers. Approved DE onsite lic. B, C, E. PADEP #2033. NJ-07-040669-30. Approved VA WWOPS. 6 hrs, .6 CEUs*
- ▶ 9/16, Wednesday, 8:30am-3:30pm, 1 session. \$85. EYI 223 201

Care and Feeding of Septic Systems

For homeowners, covers the design, maintenance and basic troubleshooting for all basic systems.

Instructor: Steve Rohm, CET

- ▶ *Approved DE WW Ops-D. Approved DE onsite lic. A, B, C, D, E, F, H. 3.5 hrs, .35 CEUs*
- ▶ 9/17, Thursday, 6-9:30pm, 1 session. \$65. EYI 583 231

Collection System Troubleshooting

An overview of the techniques used to identify and repair the collection system defects which can result in sanitary sewer overflows (SSOs). Topics include: CMOM requirements, asset management, collection system cleaning and maintenance, flow monitoring, manhole inspections, smoke testing, building inspection, TV inspection, and rehabilitation techniques.

Instructor: Dick Eubank

- ▶ *Approved DE WW Ops-I. MDE Approved #1835-98-11, ALL (1.5x), NP. PADEP #1941. NJ-07-040688-30. Approved VA WWOPS. 7 hrs, .7 CEUs*
- ▶ 9/18, Friday, 8:30am-4:30pm, 1 session. \$119. EYI 204 201

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Basic Microscopy for Wastewater Operators

Beginner's workshop about the microscope. Reviews significant organisms which inhabit wastewater treatment processes and their roles in the stabilization of wastewater and sludge. (Workbook included)

Instructor: Mike Harrington, CET

- ▶ *Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #2276-01-04, 7 (1.5x) ALL, P. Approved DE onsite lic. A, B, C, D, E, F, H. PADEP #1938. NJ-07-040623-20. Approved VA WWOPS. 7 hrs, .7 CEUs*
- ▶ 9/22, Tuesday, 8:30am-4:30pm, 1 session. \$139. EYI 210 201

Water/Wastewater Operations for Elected/Appointed Public Officials **Free!**

Class covers everything that public officials need to know to oversee and manage their water and wastewater facilities. Students are provided with two excellent textbooks for reference.

Instructor: Kevin Burdette

- ▶ *Approved DE Water Ops. NJ-07-040651-30. Approved VA WWOPS. 5 hrs, .5 CEUs*
- ▶ 9/23, Wednesday, 9am-2pm, 1 session. FREE. EYI 265 201

Onsite Disposal System Hydraulics

Course gives on-site disposal system professionals (designer, installer, operator, inspector) or others (homeowner, soil scientist) a better understanding of the hydraulic principles involved in on-site disposal systems and their impact on system performance. Subjects include: buoyancy, gravity distribution, and pressurized distribution systems.

Instructor: Brian Carbaugh, P.E.

- ▶ *Approved DE WW Ops-D. Approved DE onsite lic. A, B, C, D, E, F, H. Approved MD well drillers. 7 hrs, .7 CEUs*
- ▶ 9/24, Thursday, 8:30am-4:30pm, 1 session. \$119. EYI 549 201

Earn hours for less money!

Earn your annual ten hours of training for \$95 to \$180 per year. For example - take "Time and Project Management" for \$95 and any one of our FREE, four-hour classes. Call 302-855-5900 for details.

Intro to Variable Frequency Drives (VFD)

Understand variable frequency drive uses, operations and maintenance. Topics: what are VFDs, why use them, how do they work, available features, troubleshooting and maintenance requirements. Learn about available features in hardware, control, and firmware available in drives.

Instructor: Sam Allen

- ▶ *Approved DE WW Ops-D. Approved DE Water Ops. Approved DE onsite lic. C, E. NJ-07-0608101-30. MDE Approved #4314-08-06, 7 (1.5x) ALL, NP, 7 hrs, .7 CEUs*
- ▶ 9/25, Friday, 8:30am-4:30pm, 1 session. \$125. EYI 573 201

Operation & Maintenance of the Bio-Microbics FAST Treatment Unit

Interactive class provides an in-depth view of the Bio-microbics FAST Treatment unit. Lessons cover tank/unit installation and basic treatment process. Learn to troubleshoot the system's controls and blower of the system, identify the proper preventive maintenance and cleaning. Tools will be provided for the hands-on work.

Instructor: Jim Williams

- ▶ *Approved DE WW Ops-D. Approved DE onsite lic. A, B, C, D, E, F, H. 3 hrs, .3 CEUs*
- ▶ 9/30, Wednesday, 8:30-11:30am, 1 session. \$49. EYI 541 201

Fire Hydrant Operation & Maintenance

In-depth survey of the processes, theory, application and operation of potable water treatment systems. Topics include: theory and operation of mixing systems, coagulation chemistry, monitoring optimization of chemical application, flocculation, sedimentation, water filtration, disinfection, water softening, ion exchange, membrane processes and treatment plant instrumentation and control.

Instructor: Mike Burkardt

- ▶ *Approved DE Water Ops. MDE Approved #1492-97-02, W All, WD, 7 (1.5x), P. NJ-07-040605-10. 7 hrs, .7 CEUs*
- ▶ 9/30, Wednesday, 8:30am-4:30pm, 1 session. \$125. EYI 267 201

Risers, Baffles and Filters - Installation & Repair

Focus on the replacement of inlet/outlet baffles (including retrofitting for filter installation), repair of the internal baffle, riser installation and selection and installation of effluent filters.

Instructor: Steve Rohm, CET

- ▶ **Approved DE WW Ops-D. Approved DE onsite lic. E, F, H. 4 hrs, .4 CEUs**
- ▶ 10/1, Thursday, 12:30-4:30pm, 1 session. \$65. EYI 508 201

Trenching/Shoring Safety

Digging of trenches is one of the most dangerous activities in the construction industry. Depth of the trench, conditions/activities around the job site all contribute to the hazards found on trenching jobs. Designed to familiarize anyone who performs trenching operations with the proper methods necessary to keep their job safe and in compliance with OSHA regulations.

Instructor: Dick Eubank

- ▶ **Approved DE WW Ops-I. Approved DE Water Ops. MDE Approved #1879-99-03, 7 (1.5x), ALL; SUPERS ALL, NP. Approved DE onsite lic. A, B, C, D, E, F, H. PADEP #1947. NJ-07-040671-31. Approved VA WWOPS. 7 hrs, .7CEUs**
- ▶ 10/2, Friday, 8:30am-4:30pm, 1 session. \$119. EYI 208 201

Global Positioning Systems

Develops a basic understanding of the Global Positioning System (GPS) including fundamental concepts, capabilities and limitations. Discuss hardware and software as it relates to the collection, use, and presentation of locational information associated with the water and wastewater industries.

Instructor: William Fischer, P.G.

- ▶ **Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #3624-05-12, 7.0 (1.5x) ALL; SUPERS ALL, NP. Approved MD/DE Well Drillers. Approved DE onsite lic. A, B, C, D, E, F, H. PADEP #1929. NJ-07-040672-30. Approved VA WWOPS. 7 hrs, .7 CEUs**
- ▶ 10/2, Friday, 8:30am-4:30pm, 1 session. \$119. EYI 524 201

Budgeting for Small Utilities **Free!**

Outline the basic steps to compile a water or wastewater budget, including methods of projecting revenue and expense with little or no historic data. Supervisors will learn techniques that contribute to a sound budgeting process; technical staff on first level of budget input will learn how to communicate their organizational needs.

Instructor: Jean Holloway

- ▶ **Approved DE WW Ops-I. Approved DE Water Ops. MDE Approved #3534-05-07 SUPERS ALL, NP. NJ-07-040685-30. Approved VA WWOPS. 4 hrs, .4 CEUs**
- ▶ 10/6, Tuesday, 8:30am-12:30pm, 1 session. FREE. EYI 532 201

Basic Electricity for Operators

Covers electrical subjects you need to know. Topics include fundamentals of electric motors, amperage, theory/measurement, continuity, basic circuits, hands-on electrical tests, connections and more.

Instructor: Bob Norcross

- ▶ **Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #1553-97-05, 7, ALL. Approved MD/DE Well Drillers. Approved DE onsite lic. C, E. PADEP #432. NJ-07-040622-30. Approved VA WWOPS. 7 hrs, .7 CEUs**
- ▶ 10/7, Wednesday, 8:30am-4:30pm, 1 session. \$155. EYI 205 201

21st Century Drinking Water Corrosion Control

Superb visuals and interactive lecture to define potable water corrosion and the benefit of corrosion indexes. Examine water quality issues (pH, temperature, hardness, alkalinity, TDS); learn about effective corrosion control. Integrating issues like disinfection, distribution piping, flushing schedules, coupon studies and electricity grounding can play a major role in corrosion control.

Instructor: Mike Harrington, CET

- ▶ **Approved DE Water Ops. MDE Approved #2720-03-03, 7 (1.5x) WT ALL; WD, P. PADEP #1937. NJ-07-040630-10. Approved VA WWOPS. 7 hrs, .7 CEUs**
- ▶ 10/8, Thursday, 8:30am-4:30pm, 1 session. \$125. EYI 274 201



Onsite systems at the Environmental Training Center.

NFPA 70E 2009 Standard for Electrical Safety in the Workplace

Defines the requirements for practices that workers should use to avoid injury from a release of electrical energy when performing tasks involving electrical power. Specific information enables the student to prevent or minimize exposure to all widely recognized electrical hazards and to better understand the importance of the relationship between OSHA and NFPA 70E.

Instructor: Sam Allen

- ▶ ***Approved DE WW Ops-I. DE Water Ops. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-0409107-31. 7 hrs, .7 CEUs***
- ▶ 10/9, Friday, 8:30am-4:30pm, 1 session. \$125. EYI 587 201

Excavation

Designed to provide trainees with an overview of OSHA 1926 Subpart P, OSHA excavation standard. Emphasis is on responsibilities of the competent person including: requirements of the standard, use of protective systems, and soil analysis. Other topics: causes of cave-ins, OSHA case studies, and emergency response planning.

Instructor: Bob Chrest, MPA, CET, CST

- ▶ ***Approved DE WW Ops-I. Approved DE Water Ops. Approved DE onsite lic. A, B, C, D, E, F, H. PADEP #1944. NJ-07-040680-31. Approved VA WWOPS. 6 hrs, .6 CEUs***
- ▶ 10/13, Tuesday, 8:30am-3:30pm, 1 session. \$85. EYI 529 201

Respirator Usage/Lockout-Tagout Procedures/ Permit Confined Space Entry

Explores three OSHA-mandated compliance regulations. Learn about the importance of proper respirator selection, usage, care/maintenance procedures, and contents of a written respirator program. Energy isolation procedures, devices, hazards, and control measures will be covered. Confined space topics include: atmospheric hazards and control measures, personnel roles/responsibilities, the permit system and rescue techniques.

Instructor: Bob Chrest, MPA, CET, CST

- ▶ ***Approved DE WW Ops-I. Approved DE Water Ops. MDE Approved #2220-00-12, 4. All. Approved DE onsite lic. C, E, F. PADEP #1930. NJ-07-040643-31. Approved VA WWOPS. 8 hrs, .8 CEUs***
- ▶ 10/14, Wednesday, 8:30am-5pm, 1 session. \$119. EYI 286 201

Train the Trainer Designed for Collateral Duty Safety Personnel

Designed to assist personnel with improving instructional strategies and skills. Facilitates trainees in conducting training programs for their organization. Learn basic OSHA safety training requirements including (1910.1200) hazard communication and (1910.132) personal protective equipment. Course explores instructional techniques/tips assisting with the adult learning process.

Instructor: Bob Chrest, MPA, CET, CST

- ▶ ***Approved DE WW Ops-I. Approved DE Water Ops. MDE Approved #2180-00-08, 3.5, (1.5x) and #2397-02-01, 4, (1.5x). Approved DE onsite lic. A, B, C, D, E, F, H. PADEP #2028. NJ-07-040642-31. Approved VA WWOPS. 7 hrs, .7 CEUs***
- ▶ 10/15, Thursday, 8:30am-4:30pm, 1 session. \$95. EYI 287 201

Submersible Pumps

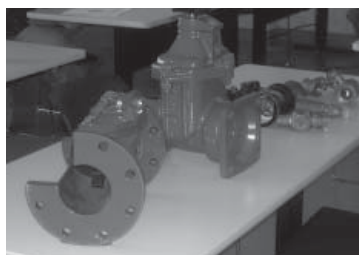
Teaches submersible pump troubleshooting, control panel troubleshooting, and theory and operation of submersible pumps. Selection and application of pump types will be discussed.

Instructor: Stan Siegfried

- ▶ ***Approved DE WW Ops-D. Approved DE Water Ops. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-040691-30. Approved VA WWOPS. 7 hrs, .7CEUs***
- ▶ 10/16, Friday, 8:30am-4:30pm, 1 session. \$145. EYI 545 201

Valves

Designed to give distribution system operators the basic knowledge necessary to identify and maintain valves used in water distribution system. Topics include different types of distribution system valves and their uses, proper valve operation methods, basic valve maintenance and troubleshooting and proper installation techniques.



Instructor: Tony Stockus

- ▶ ***Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #2188-00-10, ALL (1.5x). Approved DE onsite lic. E. PADEP #689. NJ-07-040638-30. Approved VA WWOPS. 7 hrs, .7 CEUs***
- ▶ 10/19, Monday, 8:30am-4:30pm, 1 session. \$125. EYI 245 201

DOT Regs Review for Pumpers

Review federal motor carrier safety regulations; emphasis on DOT out-of-service criteria. Includes book.

Instructor: Lee Derrickson

- ▶ **Approved DE onsite lic. F. Limit 25 students. 3 hrs, .3 CEUs**
- ▶ 10/19, Monday, 6:30-9:30pm, 1 session. \$65. EYI 575 231

Fundamentals of Septic Filtration and STEP Systems

In-depth examination of the types of onsite media filtration treatment utilized. Includes evaluation of the wastewater renovation capabilities of the most commonly used systems; details of filter construction, media used, distribution laterals employed, STEP systems and basic pump-sizing for STEP systems.

Instructor: Steve Rohm, CET

- ▶ **Approved DE WW Ops-D. Approved DE onsite lic. A, B, C, D, E, F, H. 7 hrs, .7 CEUs**
- ▶ 10/22, Thursday, 8:30am-4:30pm, 1 session. \$119. EYI 284 201

Three-Phase AC Power Workshop

Reviews typical electrical vocabulary and AC power theory. Participants will: compare single-to three-phase power; discuss common three-phase voltage and transformer configurations, operation of three phase motors; perform testing and troubleshooting methods on three-phase power and motors.

Instructor: Sam Allen

- ▶ **Approved DE WW Ops-D. Approved DE Water Ops. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-040689-30. Approved VA WWOPS. 7 hrs, .7 CEUs**
- ▶ 10/23, Friday, 8:30am-4:30pm, 1 session. \$119. EYI 543 201

Utility Rate Setting & Cost Recovery **Free!**

Designed to teach utility managers/clerks/elected officials the basics of sound rate-setting methods. Includes reserve calculations, general overhead allocation, financial forecasting and revenue projection based on customer, facility and budget data.

Instructor: Jean Holloway

- ▶ **Approved DE Water Ops. NJ-07-040621-30. Approved VA WWOPS. 4 hrs, .4 CEUs**
- ▶ 11/3, Tuesday, 8:30am-12:30pm, 1 session. FREE. EYI 249 201



Electrical Troubleshooting for Operators

Teaches the student how to troubleshoot common electrical problems encountered in water and wastewater facilities. Topics include: using schematics and technical drawings to help troubleshoot control circuits, combination starters, control devices, special controls, DC motors, AC motors and lighting.

Instructor: Bob Norcross

- ▶ ***Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #2025-99-09, 7 (1.5x) ALL. Approved MD/DE well drillers. Approved DE onsite lic. C, E. PADEP #438. NJ-07-040654-30. Approved VA WWOPS. 7 hrs, .7 CEUs***
- ▶ 11/4, Wednesday, 8:30am-4:30pm, 1 session. \$155. EYI 238 201

Water Supply Hydrology, Sources & Water Conservation

Introduction to many issues surrounding water sources and conservation, specifically groundwater and surface water sources. Topics include: facility options during emergency situations, alternative water sources; use and conservation of water and practical application of the information covered.

Instructor: Ed Cope



- ▶ ***Approved DE Water Ops. MDE Approved #2391-02-01, 7.5 (1.5x). PADEP #2027. NJ-07-040632-10. 7 hrs, .7 CEUs***
- ▶ 11/5, Thursday, 8:30am-4:30pm, 1 session. \$119. EYI 288 201

Effective Water Distribution System Flushing

Will familiarize the operator with the procedure necessary to design and perform a unidirectional flushing of the system. Topics include: distribution system hydraulics, flushing program objectives, tool and equipment requirements, valve and hydrant operation, flushing program design, data collection, customer relations and flushing problem solving. Bring a calculator.

Instructor: Dick Eubank

- ▶ **Approved DE Water Ops. MDE Approved #1885-99-04, 7 (1.5x) WT ALL; WD, NP PADEP #1943. Approved MD/DE Well Drillers. NJ-07-040665-10. 7 hrs, .7 CEUs**
- ▶ 11/6, Friday, 8:30am-4:30pm, 1 session. \$125. EYI 207 201

Chasing the Thermal Demons

21st century viewpoint about how temperature affects your water/wastewater process. Review the various water/wastewater processes; discuss the net effect temperature has on the plant; look at most common apparatus used to measure temperature; compare/contrast this apparatus to find the right measurement tool. Review common calibration protocol demonstrating the typical 0° C DI ice and 100° C DI boiling water calibration process; learn how important the NIST traceable reference is to accurate temperature measurements; find out why proper documentation is key to meeting regulatory requirements.

Instructor: Mike Harrington, CET

- ▶ **Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #3814-06-06, ALL, P. NJ-07-100602-30. 7 hrs, .7 CEUs**
- ▶ 11/10, Tuesday, 8:30am-4:30pm, 1 session. \$119. EYI 557 201

Troubleshooting Pumps

Learn the fundamental techniques of troubleshooting centrifugal pumps. Simple, effective tests for assessment of pump operational efficiencies and life expectancy.

Instructor: Steve Elder

- ▶ **Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #190-86-09, ALL, 7.5 (1.5x), NP Approved MD/DE well drillers. Approved DE onsite lic. E. PADEP #688. NJ-07-040668-30. Approved VA WWOPS. 7.5 hrs, .75 CEUs**
- ▶ 11/11, Wednesday, 8:30am-4:30pm, 1 session. \$125. EYI 230 201

True Confessions of a Water/Wastewater Operator

With superb interactive graphics and vibrant animated presentation, explore the most common chemical dosing mistakes. Lift the veil related to chemical feed; learn why chemical strength, pump calibration, product verification, and residual measurements are so important for process management and resource conservation.

Instructor: Mike Harrington, CET

- ▶ ***Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #3382-05-03, ALL; SUPERS ALL, P. NJ-07-100601-30. 7 hrs, .7 CEUs***

- ▶ 11/12, Thursday, 8:30am-4:30pm, 1 session. \$125. EYI 558 201

Soils

Basic discussion of textures, compaction, water movement and soil pollution. Designed to give installers, haulers and designers a general overview of how soils affect the operation of an onsite system.

Instructor: Lisa Wood

- ▶ ***Approved DE WW Ops-I. Approved DE onsite lic. A, B, C, E, F, H. Approved VA WWOPS. 7 hrs, .7 CEUs***

- ▶ 11/13, Friday, 8:30am-4:30pm, 1 session. \$119. EYI 294 201

Pump Hydraulics

Vital to anyone who must operate/maintain/troubleshoot pumping systems. Provides a basic understanding of the hydraulic principles related to centrifugal pumps. Topics include: hydraulic formulas and volumetric calculations, the properties of water at rest and in motion, and the hydraulic forces that exist in a pumping system. Bring a scientific calculator.

Instructor: Tony Stockus

- ▶ ***Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #4197-08-04, 7 (1.5x) ALL, NP. Approved DE onsite lic. A, B, C, D, E, F, H. PADEP #1932. NJ-07-040686-30. Approved VA WWOPS. 7 hrs, .7 CEUs***

- ▶ 11/13, Friday, 8:30am-4:30pm, 1 session. \$119. EYI 538 201

Capital Improvements Planning/Long Term **Free!** Water & Sewer Capacity

An overview of preparation of Capital Improvements Plan (CIP), how that plan relates to the sustainability of a water and/or sewer system and the capacity development issues associated with the Safe Drinking Water Act Amendments. Emphasizes why having a CIP is important, how to start preparing a CIP when a community has not had one, and the “how to” of building public support for the plan.

Instructor: Jean Holloway

- ▶ **Approved DE WW Ops-I. Approved DE Water Ops. MDE Approved #3139-04-08 SUPERS ALL, NP. NJ-07-040645-30. Approved VA WWOPS. 4 hrs, .4 CEUs**
- ▶ 11/17, Tuesday, 8:30am-12:30pm, 1 session. FREE. EYI 266 201

Time and Project Management

Learn multi-tasking skills to balance the demands of organization, employees, personal life. Learn strategies for time management; developing an action plan.

Instructor: John Kurjuweit

- ▶ **Approved DE WW Ops-I. Approved DE Water Ops. Approved DE onsite lic. A, B, C, D, E, F, H. PADEP #1946. NJ-07-040644-30. Approved VA WWOPS. 7 hrs, .7 CEUs**
- ▶ 11/17, Tuesday, 8:30am-4:30pm, 1 session. \$95. EYI 512 201

Biological Nutrient Removal & ENR

Designed as a review for experienced operators and to prepare entry level operators about key operating concepts of biological nutrient removal. Topics include: forms of nitrogen and phosphorous, biological nitrogen removal processes, biological phosphorous removal processes, key operating indicators, chemical phosphorous removal, process control overview, sampling techniques, advanced process control math problem-solving (i.e. food to mass, mean cell residence time, and wasting rates). Bring a scientific calculator to this class.

Instructor: Lenny Gold

- ▶ **Approved DE WW Ops-D. MDE Approved 2439-02-02, 8 (1.5x) WW A. Approved DE onsite lic. C, E, F. PADEP #1939. NJ-07-040683-20. Approved VA WWOPS. 7 hrs, .7 CEUs**
- ▶ 11/18, Wednesday, 8:30am-4:30pm, 1 session. \$119. EYI 295 201

Inspection Onsite WW Systems

Provides the knowledge and necessary protocol for inspecting onsite wastewater treatment systems. Prepares student for the Delaware Class H license examination. Provides the necessary guidelines for performing effective regulatory-approved onsite system inspection; familiarizes student with state inspection report completion; provides student with important information on inspecting alternative onsite systems.

Instructor: Jim Cassidy

- ▶ ***Approved DE WW Ops-D. Approved DE onsite lic. A, B, C, D, E, F, H. 7 hrs, .7 CEUs***
- ▶ 11/18, Wednesday, 8:30am-4:30pm, 1 session. \$159. EYI 533 201

Chlorine Dioxide Disinfection in the Water & Wastewater Process

Examines alternative disinfections, explores chlorine dioxide as a primary disinfection, compares and contrasts all forms of chlorine. Slide, graphics and verbal presentation. Explores why chlorine dioxide may be the choice in this century. Examines how chlorine dioxide is generated, used, and reacts in water and wastewaters.

Instructor: Mike Harrington, CET

- ▶ ***Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #4329-08-08 (1.5x) 7, ALL, P. NJ-07-0908103-30. 7 hrs, .7 CEUs***
- ▶ 11/19, Thursday, 8:30am-4:30pm, 1 session. \$125. EYI 578 201

Intro to SCADA

Review of typical vocabulary and symbols used in SCADA systems for water and wastewater systems. Learn SCADA basic operations and functions, how it improves operational control and monitoring, and common problems faced when using SCADA.

Instructor: Sam Allen

- ▶ ***Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #4436-09-04, 7 (1.5x) ALL, NP. Approved DE onsite lic. C, E. NJ-07-050795-30. 7 hrs, .7 CEUs***
- ▶ 11/20, Friday, 8:30am-4:30pm, 1 session. \$125. EYI 561 201

Delaware's Hydrogeology and Rocks and Fossils of the Mid-Atlantic

Provides an overview of the numerous geological formations comprising the state's thick sedimentary sequence. Topics include: plate tectonics and how this relates to geology, common rocks/fossils/prehistoric monsters of the region. Sediment, rock and fossil samples displayed/discussed. Hydrogeological topics including aquifer types, Delaware aquifer systems, yield potential, drawdown, ground-water contamination and sources, principles of groundwater flow, GW recharge and discharge, hydraulic head & salt water intrusion.

Instructor: Blair Venables, P.G.

- ▶ ***Approved DE Water Ops. Approved MD/DE well drillers. Approved DE onsite lic. A, B, C, D, E. NJ-07-040635-10. 7 hrs, .7 CEUs***
- ▶ 11/20, Friday, 8:30am-4:30pm, 1 session. \$119. EYI 502 201

Pumps: Installation, Maintenance & Repair

Hands-on course designed to give instruction on many different pumps. Topics include: assembly, disassembly, common operator errors and motor control operation. Hardcover textbook included. Instructor: Tony Stockus

- ▶ ***Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #1391-96-07, ALL 7.5. Approved MD/DE Well Drillers. Approved DE onsite lic. A, B, C, D, E, F, H. PADEP #433. NJ-07-040653-30. Approved VA WWOPS. 7 hrs, .7 CEUs***
- ▶ 11/23, Monday, 8:30am-4:30pm, 1 session. \$145. EYI 209 201

Team-Building

Explore methods of building a work team that is committed to accomplishing organizational goals. Topics include how to build a work team/reach decisions/enhance productivity through teamwork. Instructor: John Kurpjuweit

- ▶ ***Approved DE Water Ops. PADEP #2030. NJ-07-040649-30. Approved VA WWOPS. 7 hrs, .7CEUs***
- ▶ 11/24, Tuesday, 8:30am-4:30pm, 1 session. \$95. EYI 513 201

Math Review for the Maryland & Virginia Water Exam

First two hours: learn the basic math skills to solve math problems. Remainder of session: work sample problems you may encounter on the Maryland & Virginia water exams.

Instructor: Jerry Williams

- ▶ **Approved DE Water Ops. Bring a calculator. 7 hrs, .7 CEUs**
- ▶ 12/1, Tuesday, 8:30am-4:30pm, 1 session. \$149. EYI 581 201

Customer Relations for Environmental Technicians

Identify customer service expectations and build creative solutions to meet your needs. Learn how: to diffuse an irate customer over the phone or in person; your body language can enhance or discourage the process. Learn practical tools to listen effectively to customer feedback and take action to solve problems.

Instructor: John Kurjeweit

- ▶ **Approved DE Water Ops. Approved DE onsite lic. A, B, C, D, E, F, H. PADEP #1942. NJ-07-040626-30. Approved VA WWOPS. 7 hrs, .7 CEUs**
- ▶ 12/1, Tuesday, 8:30am-4:30pm, 1 session. \$95. EYI 503 201

Tips & Tools for 21st Century Water/Wastewater Process Monitoring

Unique workshop explores alkalinity & REDOX monitoring as a process control. With superb graphics and computer-based slides, learn why using these simple tests can lead to big process control dividends, significant time savings, reduce monitoring/disposal costs and afford real-time-right-now process data to make on-the-spot operations decisions.

Instructor: Mike Harrington, CET

- ▶ **Approved DE WW Ops-D. Approved DE Water Ops. Approved MDE Approved #2189-00-10, 7 (1.5x) ALL, P. Approved DE onsite lic. A, B, C, D, E, F, H. PADEP #2029. NJ-07-040624-30. Approved VA WWOPS. 6 hrs, .6 CEUs**
- ▶ 12/1, Tuesday, 8:30am-4:30pm, 1 session. \$125. EYI 250 201



Hands-on training at Delaware Tech's onsite lab.

Onsite 101

Follows the septic system from site evaluation through final inspection. Comprehensive class covers system layout, clearing, excavation, installation techniques, and all required paperwork.

Instructor: Jim Cassidy

- ▶ *Approved DE WW Ops-D. Approved DE onsite lic. A, B, C, D, E, F, H. Approved MD well drillers. 7 hrs, .7 CEUs.*
- ▶ 12/2, Wednesday, 8:30am-4:30pm, 1 session. \$119. EYI 547 201

Intro to Mapping and GIS for Operators

Introduces the concept of Geographic Information Systems (GIS), what constitutes a GIS, and how it is used in this industry. Topics include: database management, layering, projections and coordinate systems, data viewing/presentation/analysis.

Instructor: William Fischer, P.G.

- ▶ *Approved DE WW Ops-I. Approved DE Water Ops. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-040692-30. Approved VA WWOPS. 7 hrs, .7 CEUs.*
- ▶ 12/2, Wednesday, 8:30am-4:30pm, 1 session. \$119. EYI 553 201

Onsite Wastewater Treatment and Disposal Systems

Explains how the Regulations Governing the Design, Installation and Operation of OnSite Wastewater Treatment and Disposal Systems are used to create the policies (existing and proposed) and procedures used by DNREC.

Instructor: Dave Schepens

- ▶ *Approved DE WW Ops-D. Approved DE onsite lic. A, B, C, D, E, F, H. Approved MD well drillers. 3 hrs, .3 CEUs*
- ▶ 12/3, Thursday, 6:30-9:30pm, 1 session. \$49. EYI 540 231

Math Review for the Maryland & Virginia **New!** Wastewater Exam

First two hours: learn the basic math skills to solve math problems. Remainder of session: work sample problems you may encounter on the Maryland & Virginia wastewater exams. Bring a calculator.

Instructor: Jerry Williams

- ▶ *7 hrs, .7 CEUs*
- ▶ 12/3, Thursday, 8:30am-4:30pm, 1 session. \$149. EYI 584 201

Soils Based Approach to Siting Wastewater Disposal

Understand how soil physical properties impact the siting of onsite wastewater disposal in Del. Emphasis on site evaluation process: how to review/understand reports and application to septic design process. Other topics: preliminary review (feasibility studies), soil investigative reports for community disposal systems, percolation testing.

Instructor: Lisa Wood

- ▶ **Approved DE WW Ops-D. Approved DE onsite lic. A, B, C, D, E, F, H. 4 hrs, .4 CEUs**
- ▶ 12/4, Friday, 8:30am-12:30pm, 1 session. \$65. EYI 574 201

Math Review for Water Operators

Review basic math skills, problem-solving techniques and use of calculator for successful completion of the state exam. No text. Bring calculator, pencil, paper and RDP.

Instructor: Jerry Williams

- ▶ **Approved DE Water Ops. MDE Approved #1166-94-12, ALL, 6. Approved DE Well Drillers. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-040656-10. 6 hrs, .6 CEUs**
- ▶ 12/7, Monday, 8:30am-3:30pm, 1 session. \$89. EYI 243 201

Asset Management Program Basics **Free!**

Focus on basic steps to develop a systematic asset management program for public infrastructure assets/apparatus; includes overview of the reasons to establish a program and its relationship to regulatory requirements and guidance, such as GASB 34.

Instructor: Jean Holloway

- ▶ **Approved DE WW Ops-I. Approved DE Water Ops. MDE Approved #3056-04-05 ALL; SUPERS ALL, NP. NJ-07-040637-30. Approved VA WWOPS. 4 hrs, .4 CEUs**
- ▶ 12/8, Tuesday, 8:30am-12:30pm, 1 session. FREE. EYI 297 201

Innovative & Alternative Onsite Systems

Focus on application and use of technologically advanced onsite systems to save space and enhance ground water protection.

Instructor: Hilary Moore

- ▶ **Approved DE WW Ops-D. Approved DE onsite lic. A, B, C, D, E, F, H. 7 hrs, .7 CEUs**
- ▶ 12/8, Tuesday, 8:30am-4:30pm, 1 session. \$119. EYI 576 201

Electrical Blueprint Reading for Operators

Designed to enhance basic electrical troubleshooting skills by teaching interpretation of electrical blueprints. Learn the meanings of symbols and other information provided on typical electrical drawings.

Instructor: Steve Elder

- ▶ *Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #1156-94-12, ALL. Approved MD/DE well drillers. Approved DE onsite lic. C, E. PADEP #691. NJ-07-040663-30. Approved VA WWOPS. 7 hrs, .7 CEUs*
- ▶ 12/9, Wednesday, 8:30am-4:30pm, 1 session. \$125. EYI 225 201

Biosolids Responsibility

Covers operator responsibilities in working with biosolids; environmental health & safety; legal & permit aspect of biosolid responsibility; the responsibilities of the producer/hauler/applier of nutrients. Topics include how to use the Biosolid Data Management System for digital record-keeping.

Instructor: Mike Duffy, Ph.D., CET, CNC

- ▶ *Approved DE WW Ops-D. Approved DE onsite lic. C, E, F. Approved VA WWOPS. 7 hrs, .7 CEUs*
- ▶ 12/10, Thursday, 8:30am-4:30pm, 1 session. \$119. EYI 501 201

Math Review for Wastewater Operators

Review of basic math skills needed for successful completion of state exam. Flow problems, area, volume and review of problem-solving techniques and use of calculator. No text. Bring calculator, pencil, paper and Resource Booklet.

Instructor: Jerry Williams

- ▶ *Approved DE WW Ops-D. MDE Approved #1165-94-12, ALL, 6. Approved DE Well Drillers. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-040660-20. Approved VA WWOPS. 6 hrs, .6 CEUs*
- ▶ 12/10, Thursday, 8:30am-3:30pm, 1 session. \$89. EYI 217 201

Onsite Control Systems

Gain basic knowledge necessary to identify and maintain control systems used at onsite sewage systems. Topics include: types of control systems and uses, proper installation/operational methods/maintenance/troubleshooting techniques.

Instructor: Sam Allen

- ▶ *Approved DE WW Ops-D. Approved DE onsite lic. A, B, C, D, E, F, H. 7 hrs, .7 CEUs*
- ▶ 12/11, Friday, 8:30am-4:30pm, 1 session. \$125. EYI 567 201

Chlorination Disinfection Science

Review of the dosing technology for the three basic forms of chlorine disinfection; evaluates the pros and cons of each type of system. Topics: is switching from a gas-based chlorination process cost effective; examine hypochlorite strength/residual testing methods; are onsite generation systems appropriate/cost effective; simple ways to minimize disinfection byproducts. Superb computer visuals, expert commentary, demonstrations, and case histories.

Instructor: Mike Harrington, CET

- ▶ ***Approved DE WW Ops-D. Approved DE Water Ops. Approved DE on-site lic. C, E, H. PADEP #2023. NJ-07-040679-30. Approved VA WWOPS. 7 hrs, .7 CEUs***
- ▶ 12/15, Tuesday, 8:30am-4:30pm, 1 session. \$125. EYI 530 201

Replacement Onsite Systems

Examines siting and permitting differences between “replacement” and “new construction” onsite systems. Reviews and re-enforces the policies used in determining required isolation distances for system placement as well as use of innovative/alternative systems as replacements in difficult areas.

Instructor: Jim Cassidy

- ▶ ***Approved DE WW Ops-D. Approved DE onsite lic. A, B, C, D, E, F, H. 4 hrs, .4 CEUs***
- ▶ 12/16, Wednesday, 8:30am-12:30pm, 1 session. \$65. EYI 548 201

Water Treatment & Chlorine Safety

Examines various water treatment plant processes, chemicals used, and the basic principles of plant operations. In-depth examination of the disinfection process. Topics include: jar testing, chlorine analysis, chemicals used in the treatment process, safe handling of chlorine, and the safety features built into cylinders and feed equipment.

Instructor: Ed Cope

- ▶ ***Approved DE Water Ops. MDE Approved #1613-97-09, 7 (1.5x) WT ALL; WD, P. Approved DE onsite lic. C. PADEP #2026. NJ-07-040658-30. 7 hrs, .7 CEUs***
- ▶ 12/17, Thursday, 8:30am-4:30pm, 1 session. \$115. EYI 260 201

CERTIFICATION-STANTON CAMPUS

Wastewater Operator Certification Review, Level I

Designed as preparation for state licensing exam. An entry-level course designed for wastewater operators or individuals interested in water quality. Expert instructor utilizes textbook and videos. Text available in bookstore.

Instructor: Glenn Davis, CET

- ▶ *Approved DE WW Ops-D. MDE Approved #1372-96-06, WW 1-6, S; IW 1-5, 7. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-040608-20. Approved VA WWOPS. 48 hrs, 4.8 CEUs*
- ▶ 8/24-12/14, Monday, 6-9pm, 16 sessions. \$249. EYI 200 531

Wastewater Operator Certification Review, Level II & III

Prepares students at a more advanced level for state exam.

Excellent instructor. Text available in bookstore.

Instructor: Art Fagerstrom, P.E.

- ▶ *Approved DE WW Ops-D. MDE Approved #1395-96-07 (1.5x) WW 1-6,S; IW 2-5.. Approved DE onsite lic. A, B, C, D, E, F, H. NJ-07-040609-20. Approved VA WWOPS. 48 hrs, 4.8 CEUs*
- ▶ 8/24-12/14, Monday, 6-9pm, 16 sessions. \$249. EYI 201 531

Base Level Water Operators Course

Entry-level course prepares students for the state certification exam. It teaches basic water system operator responsibilities, water sources and treatment, math, pumps, disinfection, lab procedures, treatment plant operations and safety.

Instructor: Sheila Shannon

- ▶ *Approved DE Water Ops. MDE Approved #2451-02-03, 57 (1.5x) Approved DE Well Drillers. NJ-07-040612-10. 57 hrs, 5.7 CEUs*
- ▶ 9/8-12/8, Tuesday , 6-10pm, 14 sessions. \$295. EYI 237 531

RECERTIFICATION-STANTON CAMPUS

Verifying the Water, Wastewater Process

Combines interactive lecture and test method demonstration of water/wastewater testing for compliance and operational needs. Covers the basic calorimetric, titrimetric, nephelometric, electrometric, turbimetric testing protocol for operation needs. Designed to provide the water/wastewater professional and beginning operator the tools to choose the right test method. Instructor: Mike Harrington, CET

- ▶ *Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #4301-08-06, 7 (1.5x) ALL, P. PADEP #430. NJ-07-040633-30. Approved VA WWOPS. 7 hrs, .7 CEUs*
- ▶ 9/14, Monday, 8:30am-4:30pm, 1 session. \$125. EYI 233 501

Ten Little-Known Water/Wastewater Operators' Secrets

Explores little-known tools to achieve better operations in treatment, distribution, or collection. Learn importance of simple hypochlorite strength measurements; why portable ORP monitoring can yield big dividends; how refining lab tests for disinfection residuals, alkalinity, solids core-taking, nutrient and jar-testing can avoid violations. Instructor: Mike Harrington, CET

- ▶ *Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #1964-99-07, 7 (1.5x) ALL, NP. PADEP #434. NJ-07-040631-30. Approved VA WWOPS. 7 hrs, .7 CEUs*
- ▶ 9/23, Wednesday, 8:30am-4:30pm, 1 session. \$125. EYI 232 501

Surface Water Treatment

Covers concepts, treatment components, process control, and troubleshooting for the major components of a typical surface water treatment plant. Details of coagulation, flocculation, sedimentation, and filtration, including the "optimization goals" of each process. Instruction/practice in solving typical operational/mathematical problems. Bring a calculator. Instructor: Ed Cope

- ▶ *Approved DE WW Ops-I. Approved DE Water Ops. MDE Approved #3640-06-01, 7 (1.5x) WT ALL, P. Approved DE onsite lic. A, B, C, D, E, F, H. PADEP #1933. NJ-07-040693-10. 7 hrs, .7 CEUs*
- ▶ 10/8, Thursday, 8:30am-4:30pm, 1 session. \$115. EYI 550 501

Chlorination Technology

Designed to train water/wastewater operators in the principles of chlorination. Topics: review of various disinfection technologies and discussion of main types of chlorine application systems.

Instructor: Steve Elder

- ▶ ***Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #1094-94-10, ALL, 7 (1.5x), P. Approved for MD/DE well drillers. Approved DE on-site lic. C, E. PADEP #2022. NJ-07-040667-30. 7 hrs, .7 CEUs***
- ▶ 10/21, Wednesday , 8:30am-4:30pm, 1 session. \$125. EYI 226 501

21st Century Principles of Water/Wastewater Liquid Chlorination and De-Chlorination

Examines common mistakes made using Hypochlorite and liquid based de-chlorinating agents; compares/contrasts onsite generation, high/low strength hypochlorite. Topics include: sulfite de-chlorination, vitamin C, hydrogen peroxide, and other de-chlorinating methodologies. Examines importance of measuring delivered hypochlorite/de-chlorinating agent strength and rates of deterioration, pump calculations, settings; handling, storing and using liquid-based compounds.

Instructor: Mike Harrington, CET

- ▶ ***Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #4320-08-07, 7 (1.5x) ALL, P. NJ-07-0908102-30. 7 hrs, .7 CEUs***
- ▶ 11/18, Wednesday , 8:30am-4:30pm, 1 session. \$125. EYI 577 501

Disinfection Operations for Water & Wastewater Systems

Designed to teach the small system operator about chlorine and its alternatives for disinfection of drinking water and treated wastewater. Topics include: disinfectant selection, including cost, safety, maintainability, control and monitoring considerations; pros/cons of chlorine dioxide and chloramine; the benefits and features of other alternative disinfectants; various lab methods to determine residuals/demonstrations of simplified test protocols. Hands-on practice included.

Instructor: Mike Harrington, CET

- ▶ **Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #1842-98-12, 14 (1.5x) ALL, P. Approved DE onsite lic. C, E. PADEP#2021. NJ-07-040634-30. Approved VA WWOPS. 14 hrs, 1.4 CEUs**
- ▶ 12/2-12/3, Wednesday Thursday , 8:30am-4:30pm, 2 sessions. \$185. EYI 231 501

RECERTIFICATION-TERRY CAMPUS

21st Century Ultra Violet Disinfection

Investigates the latest UV disinfection techniques and applications for both potable water and wastewater. Operations personnel explore the advantages of UV systems compared to typical chemical disinfection systems. Learn why research suggests low-dose UV may be very effective at controlling giardia and cryptosporidium in potable waters, define and examine what UV is, how it differs from other typical disinfection systems, understand the disadvantages.

Instructor: Mike Harrington, CET

- ▶ **Approved DE WW Ops-D. Approved DE Water Ops. MDE Approved #3889-06-11, 7 (1.5x) ALL, P. Approved DE onsite lic. A, B, C, D, E, F, H. PADEP#3587. NJ-07-050794-30. 7 hrs, .7 CEUs**
- ▶ 11/17, Tuesday , 8:30am-4:30pm, 1 session. \$125. EYI 560 601

State Wastewater Exam “Hurricane” Review Level I New!

Prerequisite - EYI 200: Level I is part of a two-course review series designed for individuals who want a structured review course prior to the state exam. Will reinforce knowledge the student already possesses. Review course only! Level I review course may be taken alone by Level I operators. For Level II, III, & IV operators, it is a prerequisite course that must be completed prior to entry in the State Wastewater Exam “Hurricane” Review Levels II, III, and IV course. No exceptions. No text. Bring calculator, pencil, paper and RDP.

Instructor: Joe Mulrooney

- ▶ **Approved DE WW Ops-D. 7 hrs, .7 CEUs**
- ▶ 1/5, Tuesday , 8:30am-4:30pm, 1 session. \$95. EYI 282 601

State Wastewater Exam "Hurricane" Review **New!** Levels II, III & IV

Prerequisites: EYI 200, 201, & 582 - Levels II, III, & IV, cannot be taken independently of the State Wastewater Exam "Hurricane" Review Level I course. It is the final portion of a two-course series designed for individuals who want a structured high level review course prior to the state exam. Will reinforce knowledge the student already possesses. Review course only for Level II, III, & IV operators. Registered students will be required to verify that prerequisite course requirements have been met. No exceptions. No text. Bring calculator, pencil, paper and RDP.

Instructor: Joe Mulrooney

- ▶ **Approved DE WW Ops-D. 7 hrs, .7 CEUs**
- ▶ 1/6, Wednesday , 8:30am-4:30pm, 1 session. \$95. EYI 283 601



Jordanian Water/Wastewater Working Group, Amaan, Jordan.

ANNOUNCEMENT

Announcement of Change to ETC Tuition Waiver Program

Municipal Grant Continues

Thanks to the efforts of the Delaware League of Local Governments, all Delaware municipal, county and state employees (licensed or unlicensed water operators, licensed or unlicensed wastewater operators, and licensed or unlicensed associated support staff*) may continue to attend job-related ETC non-credit courses FREE of charge, with a "Municipal Grant Waiver."

Attention Licensed Water Operators and Operators in Training employed by small water systems (private and public) in Delaware and the Eastern Shore of Maryland:

Currently, two water operator grants are pending award to the Environmental Training Center. If awarded, these grants will pay tuition costs for non-credit courses, approved by the licensing state, offered on the Owens Campus. These are temporary scholarships. Funding will be distributed to qualifying students through the period of endowment or until funding is exhausted, whichever comes first. For more information, please call (302) 855-5900.

Scholarships

Donor-sponsored scholarships for our associate degree program are still available.

*Associated support staff includes people holding related positions, such as pump mechanics, maintenance personnel, supervisors and administrative staff.

REGISTRATION INFO

How do I register for Credit Courses?

Call 302-855-5900 for enrollment and scholarship information for credit courses at the Jack F. Owens Campus in Georgetown, Delaware.

How do I register for courses held at the Jack F. Owens Campus in Georgetown?

Call 302-855-1617 or fill out the registration form on page 39 to register for certification and recertification courses at the Jack F. Owens Campus in Georgetown, Delaware.

How do I register for courses held at the Terry Campus in Dover?

Call 302-857-1406 to register for certification and recertification courses at the Terry Campus in Dover, Delaware.

How do I register for courses held at the Stanton Campus in Newark?

Call 302-453-3000 to register for certification and recertification courses at the Stanton Campus in Newark, Delaware.

How do I determine if a course is approved for water, wastewater, well or onsite?

A chart that lists each of our course offerings is included on pages 3, 4 and 5. This chart indicates what each course is approved for in the State of Delaware. Check course descriptions for Md., N.J., Pa., Va. licensing approvals, Del. onsite licensee approval, and Del. Wastewater/Water Operator's approval. If you have questions or are unsure of whether a course is for you, please call 302-855-5900 for appropriate information.

Visit www.dtcc.edu/owens/ccp/environmental for more information!

REGISTRATION FORM

Date of Birth _____

Name (Last, First) _____

Address _____

City/State/ZIP _____

Phone (Day) _____ (Evening) _____

E-mail Address _____

Would you like to receive course information via e-mail? Yes No

Four Easy Ways to Register			
Telephone Call 302-855-1617	Course #	Course Title	Cost
Fax Dial 302-858-5456			
In Person <i>Corporate and Community Programs, (Jason Technology Center, Rm. 109)</i>			
Mail <i>Delaware Tech Attn: Registration P.O. Box 610 Georgetown, DE 19947</i>	Total Due		
Method of Payment <input type="checkbox"/> Check payable to Delaware Tech <input type="checkbox"/> Cash (In person only) <input type="checkbox"/> Credit Card (Phone, fax) Charge my: <input type="checkbox"/> Visa <input type="checkbox"/> Discover <input type="checkbox"/> MasterCard Card# _____ Exp. Date _____ Card Verification Code (Last three digits on back of card) Authorized Signature _____			

How did you find out about us? Course Booklet Postcard News Article

Advertisement Word of Mouth Other: _____

Gender: Female Male

Ethnic Origin: African-American Caucasian
 Native American/Alaskan Asian or Pacific Islander
 Hispanic/Latino Choose not to indicate



FALL 2009



Jack F. Owens Campus
P. O. Box 610
Georgetown, DE 19947



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