76TH ANNUAL SHORT COURSES FOR WATER & WASTEWATER OPERATORS

June 1st – June 6th, 2025

HELD
AT

MOUNT ST. MARY'S UNIVERSITY
16300 Old Emmitsburg Rd.
Emmitsburg, MD 21727

Sponsored
By

Chesapeake Section, American Water Works Association (CSAWWA)

Chesapeake Water Environment Association (CWEA)

Water and Waste Operators Association of
Maryland, Delaware and the District of Columbia (WWOA)

76th SHORT COURSE PROGRAM & SCHEDULE

***<u>Important note to all overnight attendees</u>: Mount St. Mary's University no longer furnishes: linens, pillows, or towels therefore attendees are responsible for bringing their own. Repeat: it is <u>your responsibility to provide your own pillow, sheets, blanket, towels, and wash cloths.</u>** Note: The beds are Twin-XL (XL = extra-long).

Important Reminder: A refundable $10.00 key cash deposit will be collected at the time of registration. However, students will be billed $75.00 for lost keys.

Sunday, June 1st, 2025

3:00 p.m. to 6:00 p.m.	Check-in and Room Assignments
6:00 p.m. to 11:00 p.m.	The Short Course will begin with a Buffet Dinner at 6 p.m. in the Main Dining Room located in Patriot Hall followed by a Meet & Greet beginning at 7:30 p.m. in the PAC.

Monday, June 2nd through Thursday, June 5th, 2025

7:00 to 8:00 a.m.	Breakfast for non-commuters
8:00 a.m. to Noon	Training Sessions
Noon to 1:00 p.m.	Lunch for all Attendees and Trainers
1:00 to 5:00 p.m.	Training Sessions
5:00 to 6:00 p.m.	Dinner for Non-commuters (Mon, Tues, & Thurs)
5:00 to 8:00 p.m.	Picnic Dinner for Non-commuters (Wed)

Friday, June 6th, 2025

7:00 to 8:00 a.m.	Check-out, Key Return, Breakfast for Non-commuters
8:00 to 11:00 a.m.	Final Short Course Exams
	OR
8:30 a.m. to Noon	Maryland Board of Water and Waste Systems Operators Certification Exams for those scheduled*

Purpose

The Short Course for Water and Wastewater Operators offers training, information, and insights that will enable the water and wastewater systems personnel to operate their facilities in a more effective, safe, and economical manner. The courses offer new ideas and serve as a "refresher" for existing operators.

Non-Discrimination Statement

The WWO Short Course Committee does not discriminate in its educational programs or activities on the basis of race, color, national or ethnic origin, ancestry, age religion or religious creed, disability or handicap, sex or gender. The Short Course will comply with state and federal laws such as M.G.L.c.151B, Title IX, Title VI and Title VII of the Civil Rights Acts, the Americans with Disabilities Act, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination in Employment Act, and other similar laws that prohibit discrimination.

Unlawful discrimination has no place at the Short Course and offends the organization's core values which include a commitment to equal opportunity and inclusion. All Short Course Committee members, instructors, students, and staff members are expected to join with and uphold this commitment.

Questions/Problems

If there are any questions not answered in this brochure or problems encountered prior to registration, you can contact John Luu at John.Luu@wsscwater.com, or Lauren Thompson at help@wwoshortcourse.com.

The College should Not be contacted regarding registration or arrangements! The University's only function is to provide facilities for the courses. All questions must be directed at the above-named individuals or Short Committee members.

Directions to Mount St. Mary's University

Mount St. Mary's University is located at 16300 Old Emmitsburg Rd, Emmitsburg, MD 21727 which is located north of Frederick just off U.S. Route 15. The University facility is on the west side of the highway and is well marked. Directional signs to the Short Course will be provided.

*Maryland State Operator Certification Exam

This year the Maryland Board of Water and Waste Systems Operators will hold State operator certification exams for all classes at the conclusion of the Short Course on Friday June 6th, 2025, from 8:30 a.m. - Noon in Patriot Hall. This exam is not part of the actual Short Courses and is separate from the TRE credit exam given by each session of the Short Course. **Payment to attend the Short Course does not include the cost, nor entitle you to take the Maryland Certification Exam! *You must apply separately to the Maryland Board of Waterworks and Waste Systems Operators to sit for the Maryland Certification Exam.**

The Board must receive the application for those wishing to take the Certification Exam at Mount St. Mary's University by May 10th, 2025. **No more than 200 applications will be accepted for this exam**. It is suggested that you register early for the State exam. The exam application form can be found at:

https://mde.maryland.gov/programs/Permits/EnvironmentalBoards/Pages/BWW.aspx

Mail completed applications to:

Board of Waterworks & Waste Systems Operators
P.O. Box 2057
Baltimore, MD 21230-1708

Any questions regarding the Certification Exams may be referred directly to Board staff at 1(800) 633-6101, ext. 3167 or (410) 537-3167 or martin.fuhr@maryland.gov.

Sponsorship/Scholarships

The Annual Water and Wastewater Operators Short Course is sponsored by the Short Course Committee, a group made up of representatives from the Water and Wastewater Operators of Maryland, Delaware, and the District of Columbia (WWOA), the Chesapeake Section, American Water Works Association (CSAWWA), and the Chesapeake Water Environment Association (CWEA). Scholarships may be offered through each organization to attend the Short Course. Members of each organization are eligible per the selection process of the organization. ***In addition, this year the Short Courses Committee will be offering 15 scholarships based on need. See the Short Courses website (wwoshortcourse.com) for additional information. Small system operators are encouraged to apply!**

This training effort is sponsored by the professional membership organizations and the employers of the water and wastewater operating professionals. It is a volunteer organization. Should you wish to become a member please contact a member of the Short Course Committee.

Conduct of Participants

Throughout the history of the Short Course most participants have conducted themselves in a most reasonable manner and are credit to our profession. This is a reminder that all participants will act responsibly. Undesirable conduct will not be tolerated and will result in your removal from the site by campus police without a refund. Notification to your employer and the cause for removal will follow.

In addition, anyone found unduly under the influence of alcohol, anyone found buying, selling, consuming, or possessing illegal narcotics and drugs will be required to leave this year's Short Course immediately and will be banned from all future Short Courses. Unduly under the influence will be in the judgment of any Short Course Committee member or university official.

Attendance and Training Credit Hours Earned

The policy of the Short Course Committee is that a student must attend at least 80% of the training (Short Course examination being included in the total time – the State examination does not count as class attendance) to receive credit for full attendance. All courses are subject to approval by the Maryland Board of Waterworks and Waste System Operators. Also, 80% or better attendance along with a passing grade on the final examination, results in 1.5 times the full attendance credit. Attendees with less than 80% attendance or single-day attendees will receive a certificate of attendance for the actual hours attended. The Short Course Committee does not submit individual classes for TRE credits except for the Superintendent course. Attendees have the option to submit the hours for approval.

If you are taking a State Certification exam on Friday, June 6th, and you are also interested in taking the Short Course final exam, you may do so on Thursday evening. Only individuals taking the State Certification exam will be eligible for this option. You must make arrangements with your course coordinator by Tuesday, June 3rd. **All participants must sign their own name to the attendance sheets during the class to receive credit. NO EXCEPTIONS.**

Short Course registration is now PAPERLESS! Mail-in registration will NOT be accepted.

How to Register:

1. Gather all required information for each attendee being registered:
    a. Membership status (CSAWWA, CWEA, WWOA, none)
    b. Membership # (if applicable)
    c. Scholarship Winner (yes/no)
    d. If a scholarship winner, which scholarship
    e. Type of registration (Full week or single day)
    f. Attending Sunday buffet (yes/no)
    g. Attendee information: First Name, Last Name, Email Address, Phone #, Emergency contact name and phone #, Organization/Company name, Address, Gender
    h. Which Course the attendee plans to attend: (Introduction to Water, Water 3&4, Advanced Water, Water Distribution, Advanced Water Distribution, Introduction/Intermediate Wastewater, Advanced Wastewater, Industrial Wastewater, Wastewater Collection, or Superintendent)
    i. Include any requests for accommodations. The Short Course Committee will do its best to provide any reasonable accommodations.

Connect to our online registration system by visiting https://wwoshortcourses.regfox.com/76th-annual-short-courses or go through the Short Course website at www.wwoshortcourse.com

2. Complete individual or group registration(s)
3. Pay – see prices below
4. Print your invoice – **No invoice will be mailed to you!**

Course Registration

Registration Packages	**Members** Apr. 1 – May 3, 2025	**Non-Members** Apr. 1 – May 3, 2025	**Members** May 4 - 17, 2025	**Non-Members** May 4 - 17, 2025
Full Week – Complete Pkg. (classes, meals, lodging)	$600	$625	$650	$675
Full Week – Classes & lunch only	$325	$350	$375	$400
Single Day (includes lunch)	$85	$95	$95	$105
Breakfast & Dinner only	$120/week $30/day	$120/week, $30/day	$120/week $30/day	$120/week $30/day
Lodging only	$50/night	$50/night	$50/night	$50/night

No registrations will be accepted after 11:59 p.m. on May 17, 2025

Payment

- Pay online using credit card or EFT - you can register a group of attendees using one credit card.

Cancellations will be charged a fee of $25.00. No refunds will be issued after May 25th, 2025.

Emergencies

If there is an **emergency** at home or work while you are staying at the College and you must be reached, the 24-hour Public Safety number is (301) 447-5357. A message will be taken, and every attempt will be made to contact you.

On-Site Help

If you are a single day attendee or an instructor, or should you have any questions/problems during the week, you can find help in the Short Courses Headquarters in Room 127 of the Knott Academic Center from 7 a.m. to 5 p.m. Please call Short Course Chairperson John Luu at (910) 233-3056 should you need help.

Overnight Room Accommodations

Overnight accommodation will be available at a cost of $50.00 per person per night. This fee includes an air-conditioned room. The rooms will be available from 4:00 p.m. Sunday, June 1st and must be vacated by 8 a.m. on Friday, June 6th. **A refundable $10.00 cash key deposit will be collected at the time of registration. However, students will be billed $75.00 for lost keys.** Room and board costs include the standard cafeteria meals (breakfast and dinner) served in Patriot Hall. Lunch is included in the registration cost for all attendees.

NO LINENS WILL BE PROVIDED.

Meals for on-site accommodation begin with the buffet dinner on Sunday evening, June 1st, and end with breakfast on Friday morning, June 6th. The serving times are:

Breakfast – 7:00 a.m. to 8:00 a.m.
Lunch – Noon to 1:00 p.m.
Dinner – 5:00 – 6:00 p.m. (except Wednesday 5:00 - 8:00 p.m.)

All bedrooms are private however you will be sharing an apartment with other attendees. We will make every effort to help you stay with someone you know, but there are no guarantees. If you would like to share an apartment with another attendee(s), you can pay their key deposit when paying yours, and they will receive their key after checking in. Please coordinate with them so they are aware that you have already signed up for a room for them. If you choose not to reserve their room(s), you will be paired up with other attendees on a first-come, first-served basis.

Should you prefer to stay off campus, there are several motels nearby. Reservations must be made by you at your own expense. If you wish to eat breakfast and/or dinner on campus, you must purchase a meal plan.

Parking

Please observe all parking restrictions at the college. All vehicles improperly parked on grass or prohibited areas will be given a ticket and/or towed. Short Course participants are only authorized to park in lots 7, 8, and 10!

Smoking

Smoking and/or vaping is prohibited in all college buildings including residential halls, and outdoors within 15 feet of all college buildings. **Violations may result in fines which will be the responsibility of the person smoking**. Repeat violations may result in the loss of campus housing and/or campus visitation privileges.

Sunday Evening Meet & Greet

On Sunday, June 1st, 2025, the Short Course will begin with a Buffet Dinner and Meet and Greet. The buffet will be served from 6:00 - 7:30 p.m. in Patriot Hall, and the Meet & Greet to follow until 11:00 p.m. in the PAC.

Evening Recreational Activities

Monday 7:00 - 11 p.m. Pizza Night, Trivia Contest and Televised Sports
Tuesday 7:00 - 11 p.m. Wings Night, Meter Madness/Pipe Cutting Contests &Televised Sports
Wednesday 5:00 - 11 p.m. Picnic Night, Corn Hole Contest, Live Music, and Televised Sports
Thursday - Study Night No Activities Scheduled

SESSION LISTINGS

Disclaimer

The Introductory Water is designed for those people just entering the field and people holding temporary operator licenses. Attendance at this course in no way implies a guarantee that those participating in the sessions are assured of passing the State Certification exam. However, the information covered in the sessions should be helpful with some parts of the certification exam. Fully certified operators should take the more advanced sessions for re-certification credit however all sessions are submitted for Maryland TRE credits.

Delaware Operator License Holders

Certified Delaware Operators are welcome to submit MDE approved courses for credit with the State of Delaware.

Introductory Water Course

Course Coordinator: Robert Nally

The curriculum involves applied mathematics; basic concepts in water production and treatment, as well as maintenance and safety aspects associated with water treatment systems. This course has been submitted to the Maryland Board of Waterworks and Waste Systems Operators for TRE approval.

MONDAY

8:00 – 8:30 a.m.	**Course Overview -** Course Coordinator, Robert Nally Jr. – WSSC Water An overview of the Introductory Water program will be presented and course objectives discussed. TRE requirements will be outlined. This course will cover material which will be helpful to students new to the water industry as well as those who will be taking the State Certification Exam for Water Treatment.
8:30 a.m. – Noon	**Source Water Protection –** Instructors, Edward Cope and Justin Akers – Anne Arundel County DPW This course is intended for public water systems that utilize groundwater wells and surface water as a source of supply. Topics to be covered include groundwater hydrogeology; types of surface water, types of wells and drilling techniques; well pumps, motors, and control systems; pump station design; operational strategies; maintenance and rehabilitation alternatives; water quality monitoring; performance monitoring and troubleshooting; and sanitary risks and source water protection.
Noon – 1:00 p.m.	**Lunch**

1:00 – 5:00 p.m. **Coagulation, Flocculation & Sedimentation –** Instructor, Scott Harmon – Maryland Rural Water
Session will cover the first three steps of conventional water treatment process; including rapid mixing, types of flocculation, and sedimentation will be discussed.

5:00 – 6:00 p.m. **Dinner**

TUESDAY.

8:00 a.m. – Noon **Filtration and Disinfection** – Instructor, Christopher Bruno Sr, U. S. Army Corp of Engineers
This course will cover various types of Filtration and Disinfection processes used in water treatment. Commonly used filters and filter media will be discussed. Commonly used disinfection chemicals and feed equipment will also be discussed.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Pump Maintenance** – Instructor, Steve Justice - Geiger Pumps
An overview of mechanical maintenance on motors and pumps in the workplace is provided. Packing pumps, motor replacements and other topics will be discussed thoroughly.

5:00 – 6:00 p.m. **Dinner**

WEDNESDAY

8:00 a.m. – Noon **Distribution System Processes** – Instructor, Billy Dove – Hazen and Sawyer
This course will discuss water distribution systems. Among the topics discussed will be various types of water storage, hydraulic concepts of pressure and force, pressure reducing valves, booster pumps, the importance of tank turnover, chlorination, and disinfection byproducts, and routine maintenance.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **PLC Systems for Water Operators** – Instructor, Monica Cortez - WSSC Water
This course will focus on Programmable Logic Controller (PLC) systems in the water treatment industry. Among the topics discussed will be the history of PLC systems, basic electrical and PLC terminology, the components of a PLC, Basic Ladder Logic, PLC communications, Discrete and Analog devices, and troubleshooting techniques. Attendees should leave this course with a more thorough understanding of how PLCs function in their plant.

5:00 – 8:00 p.m. **Dinner**

THURSDAY

8:00 a.m. – Noon **Applied Mathematics** – Instructors, Scott Harmon – Rural Community Assistance Partnership (RCAP)
This session will focus on basic mathematics and applications fundamental to water treatment. Upon completion of this course, personnel should be able to perform calculations needed to verify various plant processes. Examples include chemical dosing, detention time, pressure calculations, backwash flow rates, and temperature conversions.

Noon – 1:00 p.m. **Lunch**

1:00 – 3:00 p.m. **Fluoridation in Drinking Water –** Robert Nally – WSSC Water
Fluoridation is an important process in drinking water that helps communities prevent tooth decay. This course will focus on the history of Fluoridation, how Fluoride is used and monitored in drinking water, and the benefits as well as the potential.

3:00 – 5:00 p.m. **pH Control in Drinking Water –** Robert Nally – WSSC Water
Maintaining an optimum pH in a plant's finished water is vital for preventing scaling or corrosion in the distribution system. This course will discuss various chemicals and methods used to control pH, the regulations regarding pH such as the LCCR, and the ramifications if a system's pH is out of range.

5:00 – 6:00 p.m. **Dinner**

FRIDAY

8:00 – 11:00 a.m. **Final Introductory Water Short Course Exam**

WATER 3&4 COURSE

The Water 3&4 course is designed for those who operate water treatment plants. Among the treatment processes to be covered are disinfection, pH control, coagulation, flocculation, sedimentation, filtration, iron removal utilizing ion exchange, contact oxidation processes, fluoridation, aeration, and complex iron removal. This course has been submitted to the Maryland Board of Waterworks and Waste Systems Operators for TRE approval. This course has been submitted to the Maryland Board of Waterworks and Waste Systems Operators for TRE approval.

MONDAY

8:00 – 8:30 a.m. **Overview** - Course Coordinator, Dinesh Bahadursingh – WSSC Water
An overview of the Water 3 & 4 course will be presented; course objectives and TRE requirements will be discussed.

8:30 a.m. – Noon **Chlorination Technology** – Instructor, Mark Proctor - WSSC Water
This session will cover the use and safe handling of chlorine. Included in this discussion will be waterborne diseases, water-chlorine chemistry, disinfection methods, and operational factors that affect the disinfection process. Also included will be inspection of equipment, personal safety, health precautions, and emergency procedures.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Coagulation, Flocculation & Sedimentation** – Instructor, Scott Harmon– Rural Community Assistance Partnership (RCAP)
Session will cover the first three steps of conventional water treatment process; including rapid mixing, types of flocculation, and sedimentation will be discussed.

5:00 – 6:00 p.m. **Dinner**

TUESDAY

8 a.m. – Noon **Water Treatment Processes** – Instructor, Eddie Cope - Anne Arundel County DPW
This session will cover various water treatment processes including coagulation, sedimentation, disinfection, fluoridation, iron and manganese removal, softening, taste and odor control, and corrosion control. Water sources, chemicals used in water treatment and plant operations will also be discussed.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Water Examination Review** – Instructors, Dinesh Bahadursingh & Robert Nally – WSSC Water, Jay Price – Hazen & Sawyer
This session is designed to review topics that may help those taking the State examinations.

Or

Pump Maintenance – Instructor, Steve Justice - Geiger Pumps
An overview of mechanical maintenance on motors and pumps in the workplace is provided. Packing pumps, motor replacements and other topics will be discussed thoroughly.

5:00 – 6:00 p.m. **Dinner**

WEDNESDAY

8:00 a.m. – Noon **Distribution System Processes** – Instructor, Billy Dove – Hazen & Sawyer
This course will discuss water distribution systems. Among the topics discussed will be various types of water storage, hydraulic concepts of pressure and force, pressure reducing valves, booster pumps, the importance of tank turnover, chlorination, and disinfection byproducts, and routine maintenance.

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This session is designed to review topics that may help those taking the State examinations.

Or

PLC Systems for Water Operators – Instructor, Monica Cortez - WSSC Water
This course will focus on Programmable Logic Controller (PLC) systems in the water treatment industry. Among the topics discussed will be the history of PLC systems, basic electrical and PLC terminology, the components of a PLC, Basic Ladder Logic, PLC communications, Discrete and Analog devices, and troubleshooting techniques. Attendees should leave this course with a more thorough understanding of how PLCs function in their plant.

5:00 – 8:00 p.m. **Dinner**

THURSDAY

8:00 a.m. – Noon **Applied Mathematics** – Instructor, Scott Harmon – Rural Community Assistance Partnership (RCAP)
This session will focus on basic mathematics and applications fundamental to water treatment. Upon completion of this course, personnel should be able to perform calculations needed to verify various plant processes. Examples include chemical dosing, detention time, pressure calculations, backwash flow rates, and temperature conversions.

Noon – 1:00 p.m. **Lunch**

1:00 – 3:00 p.m. **Ozone Disinfection –** Instructor, Doug Grimes - Fairfax Water
This session is designed to introduce Operational and Maintenance personnel to the concept of using ozone to treat drinking water. Attendees will be briefed on the history of ozone usage. The entire ozone treatment process will be discussed, including storing liquid oxygen, generating ozone on site, measurement of ozone residual, calculation of disinfection credit, and destructing excess ozone. Various components of the ozone process will be identified, as well as operation and maintenance of the ozone process.

3:00 - 5:00 p.m. **Water 3&4 Course Review** – Instructor, Dinesh Bahadursingh – WSSC Water
This session will be a review of the week's material in preparation for the Short Course final exam.

5:00 – 6:00 p.m. **Dinner**

FRIDAY

8:00 – 11:00 a.m. **Final Water 3&4 Short Course Exam**

ADVANCED WATER COURSE

Course Coordinator: Rob Swann

The Advanced Water Topics curriculum is designed for water treatment plant operators. The course work is designed to investigate water treatment subjects and issues in greater detail than would be covered in introductory classes. People taking this course should be certified operators with approximately four years or more experience in water treatment technology and have completed basic introductory water courses. This course has been

submitted to the Maryland Board of Waterworks and Waste Systems Operators for TRE approval.

MONDAY

8:00 - 9:00 a.m. **Overview** - Instructor, Rob Swann – Anne Arundel County DPW
An overview of the Advanced Water program will be presented and course objectives discussed. Course materials will be distributed and TRE requirements will be discussed.

9:00 a.m. – Noon **Membrane Filtration and Reverse Osmosis Treatment Technologies** - Instructor, Ben Movahed - Watek Engineering
The theory and application behind operation and maintenance of Membrane Filtration and Reverse Osmosis Treatment systems. Problems associated with Membrane and Reverse Osmosis units will be discussed along with lab demonstrations which will be conducted.

Noon - 1:00 p.m. **Lunch**

1:00 - 5:00 p.m. **SDWA** – Instructors, Eddie Cope & Justin Akers – Anne Arundel County DPW
This course will introduce water supply system personnel to the most recent SDWA revisions, including Maryland regulations, and the National Primary Drinking Water Regulations. Additionally, participants will review the 1996 amendments which greatly enhanced the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. Information about updated monitoring requirements recordkeeping, emergency planning and response, and certification.

5:00 - 6:00 p.m. **Dinner**

TUESDAY

8:00 a.m. – Noon **Understanding the Dangers of and Treatment Methods for PFAS Chemicals –** Instructor, Scott Harmon – Rural Communities Assistance Partnership (RCAP)
This session will cover information and treatment methods for PFAS Chemicals including PFOA, PFOA and GenX chemicals. We will discuss the history, health effects and EPA's actions to address this issue and will explore the Best Available Treatment Techniques for treatment and mitigation.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **The Evolution of Disinfection in Water Treatment** - Robert Swann Sr – Anne Arundel County DPW
The methods used for the disinfection of public water systems have evolved over the years. Many water utilities are considering alternative disinfection options and moving away from chlorine gas. This class will closely examine the benefits and drawbacks to the use of various forms of disinfection from on-site sodium hypochlorite generation to UV, ozone and future disinfection options.

5:00 - 6:00 p.m. **Dinner**

WEDNESDAY

8:00 a.m. - Noon **Fluoride use in Community Water Systems** – Instructor, Scott Harmon - Rural Communities Assistance Partnership (RCAP)
This session will cover the use of Fluoride chemicals in Community Water Systems. The student will learn of the beneficial use of fluoride chemicals and some of the controversies surrounding its use. The students will explore different types of fluoride chemicals and equipment used during the fluoridation process. We will also discuss regulations regarding safe dosage and MCL levels of fluoride in drinking water.

Noon -1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Pumps** – Instructor, Irene Pais – Geiger Pumps
This course is designed to provide water professionals with a solid technical overview of hydraulics as well as a review of pump types, applications, advantages and disadvantages. Commonly used pumps for water treatment will be discussed. Issues surrounding mechanical seals and packing will also be covered.

5:00 - 8:00 p.m. **Dinner**

THURSDAY

8:00 a.m. - Noon **The Evolution of a Project: Water Treatment Plant Expansion, from Planning to Final Acceptance–** Instructor, Sharon Cole – Anne Arundel County
Operators sometimes aren't involved in the project development process until they must operate a new facility. That is typically too late to get the product that you want - and that is where operations staff make field modifications to suit their needs. This class will discuss the planning and document creation that leads to a desired construction. Language for special provisions, reading specifications, how to read project plans and the understanding of "or equal" will be highlighted. Other components that will be presented are training (how much and by whom), warranties, operation and maintenance manuals, acceptance/performance, project and construction management by engineers.

Noon – 1:00 p.m. **Lunch**

1:00 - 5:00 p.m. **Advanced Filtration Processes: Theory and Practices** Instructor, Andy Kreider - Sherwood Logan and Assoc.
With increased emphasis being placed on optimum filter performance by recent legislation, this session will cover all aspects of advanced filtration processes including granular media and gravity filtration. Included in this 4-hour session will be new design and rehabilitation of existing filters, media selection and design for particle removal, types of filter layouts, instrumentation and control, filter maintenance for optimum performance, and troubleshooting when operations are required. Comparisons will be made of different methods of backwashing and students will be able to observe cross sections of pilot filters during backwashing. Different types

of underdrains and filter media will be available for hands on demonstration.

5:00 - 6:00 p.m. **Dinner**

FRIDAY

8:00 - 11:00 a.m. **Final Advanced Water Short Course Examination**

Water Distribution Course

Course Coordinators: David Wilkins & Wanda Ketner

The Water Distribution Systems Course is designed for those who operate and maintain a water distribution system. It is for both the beginner and seasoned operator and will cover basic and advanced concepts. This course has been submitted to the Maryland Board of Waterworks and Waste Systems Operators for TRE approval.

MONDAY

8:00 – 8:30 a.m. **Orientation** – Course Coordinator, David Wilkins - WSSC Water
An overview of the Water Distribution program will be presented and course objective discussed, and TRE requirements will be discussed.

8:30 a.m. – Noon **Safety** – Instructor, David Gill – WSSC Water
The purpose of this course is to refresh and/or improve your safety skills. This course will emphasize construction safety. Topics will include trenching safety and Right-To-Know.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Introduction to Cross-Connection Control and Cross-Connection Control Programs**, Instructor, Chip Matthews - WSSC Water
The purpose of this course is to provide the attendee with a basic understanding of backflow, the importance of a Cross-Connection Program, and the means and methods to prevent backflow. The course will provide industry terminology and definitions, identify cross-connection related regulations, introduce seven essential elements of a cross-connection control program, and introduce the varying types of non-testable backflow prevention devices and testable backflow prevention assemblies.

5:00 – 6:00 p.m. **Dinner**

TUESDAY

8:00 a.m. – Noon **Math Skills** – Instructor, Wanda Ketner - WSSC Water
The purpose of this course is to refresh and/or improve your math skills in distribution math as it relates to water calculations. You will learn how to compare ratios and proportions, solving for the unknown, and explore liner measurements, area and volume measurements.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Math Skills (continued)**

5:00 – 6:00 p.m. **Dinner**

WEDNESDAY

8:00 a.m. – Noon **Centrifugal Pumps and components –** Billy Dove - Hazen & Sawyer
This class will discuss water distribution systems. Among the topics discussed will be various types of water storage, hydraulic concepts of pressure and force, pressure reducing valves, booster pumps, the importance of tank turnover, chlorination, and disinfection byproducts, and routine maintenance.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Centrifugal Pumps and components (continued)**

5:00 - 8:00 p.m. **Dinner**

THURSDAY

8:00 a.m. – Noon **Water Main Tapping, Valves and Fire Hydrants** – Instructor - Mark Snyder, Mueller
The course will cover the safe operation and maintenance of fire hydrants and valves. We will also demonstrate how to tap a water main under pressure.

Noon – 1:00 p.m. **Lunch**

1:00 – 4:00 p.m. **Valves and Fire Hydrants** (continued)

4:00 – 5:00 p.m. **Session Review & Test Taking Skills** – Instructor, David Wilkins & Wanda Ketner - WSSC Water
This session will be a review of the week's material in preparation for the Short Course and/or the State test, along with some techniques on how to take a test.

5:00 – 6:00 p.m. **Dinner**

FRIDAY

8:00 – 11:00 a.m. **Final Water Distribution Short Course Exam**

Introductory/Intermediate Wastewater Course

Course Coordinator: Rob Kraus

The course is designed for Operators-In-Training with basic wastewater skills. The operator taking this course will generally have one to three years of operating experience. The information covered in this session should be helpful with some parts of the certification exams, but in no way will ensure one of passing. This course will make use of instructor handouts and note taking by the attendee. A course exam will be offered on Friday for those not taking the State Certification exam. This course has been submitted to the Maryland Board of Waterworks and Waste Systems Operators for TRE approval.

MONDAY

8:00 - 8:15 a.m. **Overview –** Course Coordinator, Rob Kraus - Anne Arundel County DPW
During this period Course materials will be distributed, the TRE requirements will be discussed and an overview of the curriculum outlined.

8:15 a.m. - Noon **Preliminary and Primary Treatment** – Instructor, Monty Simon - JMT
This session will focus on the need for adequate preliminary and primary treatment of wastewater to remove inert materials such as rags, grit and grease flowing into or received in waste treatment facilities flow measurement and removal of settleable suspended solids and the consequences of failure to do so.

Noon - 1:00 p.m. **Lunch**

1:00 - 5:00 p.m. **Pumps** – Instructor, John Weis - MM Engineering
Understanding of pumps and moving fluids through water and wastewater treatment plants is essential. This session will discuss the various types of pumps used as well as routine maintenance and troubleshooting, what causes cavitation and how to recognize and solve it.

5:00 – 6:00 p.m. **Dinner**

TUESDAY

8:00 a.m. - Noon **Activated Sludge Process Control** – Instructor, Chris Sanders - Hazen and Sawyer
This session will focus on activated sludge treatment of wastewater and the techniques for monitoring and controlling the process. This course will cover Sludge Age, MCRT and MLSS differences of control methods, Calculation of SVI, types of microorganisms to look for and the importance of sludge wasting.

Noon - 1:00 p.m. **Lunch**

1:00 - 5:00 p.m. **Wastewater Maintenance –** Instructor, TBD
This session will focus on the basic maintenance skills needed for the operations and maintenance of a wastewater treatment facility.

5:00 – 6:00 p.m. **Dinner**

WEDNESDAY

8:00 a.m. - Noon **Advanced Treatment** – Instructor, William Shreve – Charles County DPW, retired
This session will discuss methods of nutrient removal, sand filtration and other advanced treatment processes.

Noon - 1:00 p.m. **Lunch**

1:00 - 5:00 p.m. **Wastewater Math** – Instructor, Bill Shreve Jr. - MES
This session will focus on the basic math skills needed for the operation and maintenance of a wastewater treatment facility.

5:00 – 8:00 p.m. **Dinner**

THURSDAY

8:00 a.m. - Noon **Chemicals -** Instructors, Andrew Rupprecht/Nate Barnes- Premier Magnesia
This session will focus on the different chemicals and chemistries typically used in the treatment of wastewater. Pros and Cons of different chemicals and how using chemicals in one process can impact the associated processes will be discussed. Application, dosages and locations will be reviewed.

Noon - 1:00 p.m. **Lunch**

1:00 - 5:00 p.m. **Sludge Thickening and Digestion** – Instructor, Maia Tatinclaux- RK&K
Aerobic and Anaerobic digestion of wastewater sludge will be discussed including the advantages and disadvantages of each process, the necessity of pre-thickening of sludge in preparation for digestion and the various methods and equipment used will also be covered.

5:00 – 6:00 p.m. **Dinner**

FRIDAY

8:00 – 11:00 a.m. **Final Introductory/Intermediate Wastewater Short Course Exam**

Advanced Wastewater Course

Course Coordinator: Mike Marinelli

This session is designed for certified wastewater operators/superintendents. The person taking this class should have two or more years of experience. In addition, it serves as a refresher course for the seasoned veteran operator/superintendent. This course has been submitted to the Maryland Board of Waterworks and Waste Systems Operators for TRE approval. This course has been submitted to the Maryland Board of Waterworks and Waste Systems Operators for TRE approval.

Note: Experienced attendees taking the State certification exam should enroll in the Introduction/Intermediate Wastewater Course. Although some of these sessions are designed to review standard advanced wastewater processes, many of the sessions will discuss recent advancements in technology in an effort to expand the veteran operator's knowledge beyond his/her own facility.

MONDAY

8:00 - 8:15 a.m. **Overview –** Course Coordinator, Michael Marinelli - WSSC Water
An overview of the Advanced Wastewater program will be presented, and course objectives, logistics, and TRE requirements will be discussed.

8:15 a.m. – Noon **Biological Components of Wastewater –** Instructor, Cynthia Bland – PEER Consultants
This course will review the wide variety of pathogens that are present in wastewater, sludge, foam, compost, aerosols and contaminated surfaces and present potential and actual risks to wastewater personnel. Pathogens reviewed include viruses, bacteria, fungi, protozoa, and helminths (worms) as well as allergens, endotoxins, and exotoxins. Topics presented include: an overview of relevant history, hazards, and organisms; aerosols, compost, foam, and sludge; disease transmission and the body's defenses; removal, inactivation, and destruction of pathogens; hygiene measures, protective equipment and immunizations. The course will also cover organism identification and the effects of the presence, absence, mobility, and organism type on wastewater process control as well as microscopic features will be included as an overview of sampling.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Biological Components of Wastewater (continued)**

5:00 – 6:00 p.m. **Dinner**

TUESDAY

8:00 a.m. – Noon **Sludge Thickening and Digestion** – Instructor, Maia Tatinclaux – RK&K
Aerobic and Anaerobic digestion of wastewater sludges will be discussed, including the advantages and disadvantages of each process, the necessity of pre-thickening of sludge in preparation for digestion and the various methods and equipment used will also be covered.

Noon – 1:00 p.m. **Lunch**

1:00 - 5:00 p.m. **A Virtual Tour of an Advanced Wastewater Treatment Plant** – Instructor, Ronald Moler III – WSSC Water
In this class we will be taking a virtual tour of an advanced wastewater treatment plant. We will start at the plant's pump station and discuss the preliminary treatment processes. Then we will move onto secondary treatment, here we will discuss BNR, ENR, and Biological & Chemical phosphorus removal. We will follow the flow pattern and the purpose of each zone in an LME and 5-stage Bardenpho treatment process. Then we will move onto tertiary treatment where we will discuss filtration and disinfection. We will end the virtual tour at the plant's effluent outfall.

5:00 – 6:00 p.m. **Dinner**

WEDNESDAY

8:00 a.m. – Noon **An In-Depth Look at ENR –** Instructor, Marty Johnson – Retired WSSC Water and Anne Arundel County DPW
This 2-day course is designed to give the operator highly detailed training on the biology and chemistry behind Enhanced Nutrient Removal. Operation and control of various treatment plant processes will be discussed. Training will also include diagnosing plant performance and optimization through monitoring, testing, equipment changes, and

chemical addition. Interpretation of data and operational problems/remedies will also be presented.

Noon – 1:00 p.m. **Lunch**

1:00 - 5:00 p.m. **An In-Depth Look at ENR (continued)**

5:00 – 8:00 p.m. **Dinner**

THURSDAY

8:00 a.m. – Noon **An In-Depth Look at ENR (Day 2)** – Instructor, Marty Johnson–

Noon – 1:00 p.m. **Lunch**

1:00 - 4:00 p.m. **An In-Depth Look at ENR (continued)**

4:00 - 5:00 p.m. **Course Review –** Instructor, Michael Marinelli – WSSC Water

5:00 – 6:00 p.m. **Dinner**

FRIDAY

8:00 – 11:00 a.m. **Final Advanced Wastewater Short Course Examination**

Industrial Waste Treatment Course

Course Coordinators: Bill Farrell and Dwight Swann

The Industrial Waste Treatment Course is designed to cover a broad range of topics in the field. Review sessions for safety and chemistry are provided. The technology discussed will apply for both direct industrial waste dischargers and indirect dischargers to Publicly Owned Treatment Works (POTWs). The sessions during the first three days concentrate on chemical/physical processes and topics of general applicability. Thursday's sessions focus on biological treatment processes to address training requirements for Industrial Wastewater Works and Pretreatment Plants of Class-4, Biological Lagoons, and Class-5, Activated Sludge. This course has been submitted to the Maryland Board of Waterworks and Waste Systems Operators for TRE approval.

MONDAY

8:00 – 9:00 a.m. **Course Objectives & Orientation –** Course Coordinator, Bill Farrell - Prostart

This session will introduce the course with an explanation of its objectives and attendance requirements. Each session covered in this course will be discussed along with resources available for review of course materials, and the examination format.

9:00 a.m. – Noon **Pumps** – Instructor, Dwight Swann - Envirep

This will be a combined session with Intermediate Wastewater. The session will discuss the movement of water by pumping. Hydraulic principles of flow and pressure head, suction and discharge conditions, and cavitation. All types of pumps will be discussed, centrifugal, positive displacement, air lift, diaphragm that are used in water / waste treatment processes.

Noon – 1:00 p.m. **Lunch**

1:00 - 3:00 p.m. **Overview of Municipal/Industrial Pretreatment, Local Limit Development, Monitoring Requirements and Compliance Enforcement -** Instructor, Ed Williams - Prostart
This session will provide a brief overview of the regulations governing how pretreatment is implemented in the State of Maryland. Discussions will include general and specific prohibitions, standards, and consequences of being classified as an SIU and reporting requirements.

3:00 - 5:00 p.m. **Prevention and Response to Violations** – Instructor, Ed Williams - Prostart
This session will discuss the operator's role in responding and reporting violations of wastewater discharge parameters.

5:00 – 6:00 p.m. **Dinner**

TUESDAY

8:00 a.m. – Noon **Micro-Nuclear Power for Wastewater Facilities –** Instructor, Alan Rogers - Omni Engineering
The Clean Water Act of 1972 sparked the wastewater industry and converted a technological lagging industry into a front runner. Innovations in automation, energy use, conservation and process evolution have been the hallmark of the industry. Energy and environment are two sides of the same coin. It is the goal of this presentation to bring into focus the potential applications of Micro-nuclear power to this industry and the public.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Membrane Treatment** – Instructor, Rob Kerschner – Innovative Treatment Products
Membrane separation has been used in industrial applications for decades to separate materials from water based upon pore size and molecular weight. This session will discuss membranes from Micro to Ultra to Nano to RO and the pressures and reasons for each application in waste treatment. Discussions of proper screening and cleaning techniques will be covered as well as controls and expected membrane life.

5:00 – 6:00 p.m. **Dinner**

WEDNESDAY

8:00 a.m. – Noon **Chemical Feed** – Instructor, Tim McComas – Coyne Chemical
This session covers the use of Chemicals in the treatment of wastewater. Topics will include chemicals, application points, and calculating chemical dosages and feed rates. Jar Testing technique and Buchner funnel tests will be discussed for settling thickening and dewatering applications.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Controls –** Instructor, Allan Rodgers – Omni Engineering
Automation and controls are becoming more a part of wastewater treatment plants as costs for equipment and reliability of process meters and sensors have improved. The use of Programmable Logic Controllers (PLC) and Human Machine Interfaces (HMI) increases the operators' control over process and efficiency. Input, output, digital, and analog topics will be discussed.

5:00 - 8:00 p.m. **Dinner**

THURSDAY

8:00 – 10:00 a.m. **Principles of Biological Treatment** – Instructor, Larry Slattery - Harford County
This section will cover wastewater characterization, an introduction to biological treatment systems, and basic microbiology.

10:00 a.m. - Noon **Aerobic Treatment I** – Instructor, Larry Slattery – Harford County
The principles of aerobic treatment will be reviewed. This session will include a presentation of activated sludge theory, the reactor configurations; complete mix, plug flow and batch. Basic calculations specific to these systems will be covered. Also discussed will be fixed film, attached growth systems.

Noon – 1:00 p.m. **Lunch**

1:00 – 3:00 p.m. **Anaerobic Treatment Processes** – Instructor, Richard Castillo - Prostart
The principles of biologic treatment will be reviewed. This session will include a discussion of the different types of anaerobic treatment, selection criteria, and the advantages and disadvantages of each type. Basic calculations specific to these systems will be covered.

3:00 – 4:00 p.m. **Course Review**

4:00 – 5:00 p.m. **Final Industrial Wastewater Short Course Examination**

5:00 - 6:00 p.m. **Dinner**

Wastewater Collection Systems Course

Course Coordinators: Wayne Reed and Licette Villafane

The Wastewater Collection Systems Course is designed for those who operate and maintain a wastewater collection system. It is for both the beginner and seasoned operator and will cover basic and advanced concepts. This course has been submitted to the Maryland Board of Waterworks and Waste Systems Operators for TRE approval.

MONDAY

8:00 – 8:30 a.m. **Overview** – Course Coordinators, Wayne E. Reed - Army Corps of Engineers, Washington Aqueduct and Licette Villafane, WSSC Water

This session will provide an overview of the Wastewater Collection Course, with course objectives and TRE requirements being discussed.

8:30 - 9:30 a.m. **Force Main Inspection and Assessment -** Instructor, Jeremiah Fagan
The presentation will cover the risk-based approach for the evaluation of wastewater force mains using non-destructive techniques and technologies in addition to advanced analytical methods. These techniques have been used by numerous force main owners throughout North America including local utilities. Case studies and lessons learned will be presented.

9:30 – 10:30 a.m. **An Introduction to Asset Management** – Instructors, Gregory Stephens & Kendrick St Louis – DCWater
Asset Management is a comprehensive business program advocated by the US EPA and the utility industry to optimize infrastructure sustainability. It is essentially the practice of managing infrastructure capital assets to minimize the total cost of acquiring, operating and maintaining them, while improving service levels. The process involves incorporating detailed asset inventories, data management, related business processes and long-range financial planning to drive decision-making by optimizing the ability to prioritize capital program projects and preventive maintenance work.

10:30 – 11: 30 a.m. **Collection System Basic Hydraulics** – Instructor, Jemil Yesuf -Baltimore City DPW
Provide an overview of basic hydraulic principles that apply to gravity sewer flows as well as to pressure flows and pumping stations. For gravity systems, Manning's Equation will be discussed. For pressure systems, Bernoulli's Principle will be explained. Examples that require the application of these principles will be solved during the class.

11:30 a.m. – Noon **Review** – Instructor, Wayne Reed – Army Corps of Engineers, Washington Aqueduct

Noon – 1:00 p.m. **Lunch**

1:00 – 2:00 p.m. **What your Executives Expect** – Instructor, Paul Sayan – City of Baltimore, Dept. of Public Works
The objective is to explain to operators of any organization including worker safety, collaboration and customer satisfaction. Expectations have changed from customers and executive management. It is not enough to say that a problem has been fixed; rather, has the root cause be determined and the root cause fixed and did you involve other groups within the organization to confirm the problem and solution and ensure that there are no unanticipated outcomes.

2:00 – 3:00 p.m. **Flow Monitoring** – Instructor, George Clark
Elements of open channel flow measurements (area and velocity, flumes, weirs) and flows through force mains (magnetic meters, pumps running timers) will be presented as a basis to establish baseline infiltration and peak wet weather flows.

3:00 – 4:00 p.m. **Manhole Rehab** – Instructor, Ian Moore - Exeter Supply
Attendees will learn the significance of manhole frame – chimney leakage, other manhole leakage sources and how to identify them. Costs associated with treating excess flows, maintenance and other potential problems also will be covered. A variety of repair methods will be discussed, including the most recent technologies to enter industry. Industry standards covering design life, product performance and acceptance testing will be reviewed to help ensure a successful manhole rehabilitation project.

4:00 – 5:00 p.m. **Wastewater Pumping and Operations** – Instructor, Wayne Reed – Army Corps of Engineers, Washington Aqueduct
Wastewater pumping and operations presentation will discuss wet well maintenance for settling grease and odor control. Discussions will evolve into the different types of wastewater pumping stations from temporary can-type stations to more custom-built stations with mechanical and support equipment for the pumping and screening operations.

5:00 – 6:00 p.m. **Dinner**

TUESDAY

8:00 a.m. – Noon **Disinfection & Chemical Feed Applications** – Instructor, Paula Martin – retired
Effective chemical application is essential to the treatment of water and wastewater. This course will start with an open discussion of chemical feed applications in both water and wastewater fields.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Math Application** – Instructor, Paula Martin, retired
A workshop focusing on calculating chemical feed dosages will follow.The workshop includes calculating the capacity of tanks, flow rates, and chemical dosages for disinfection, de-chlorination, odor control, coagulation, and corrosion control. Students will progress at their own pace through multiple and progressively more difficult quizzes.

5:00 – 6:00 p.m. **Dinner**

WEDNESDAY

8:00 a.m. – Noon **Centrifugal Pumps and Components** – Instructor, Wayne E. Reed -Army Corps of Engineers, Washington Aqueduct
Topics presented in this session include hydraulics of pumps as applied tothe waterworks industry, pump operation and routine maintenance.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Centrifugal Pumps and Components (continued)**

5:00 – 8:00 p.m. **Dinner**

THURSDAY

8:00 a.m. – Noon **Basic Chlorine and Chlorine Cylinder Program** – Instructor, Michael Lewis, WSSC Water, retired
OSHA permit required confined space; lock out tag out, basic chlorine, chlorine cylinder program, excavation and trench in safety.

Noon – 1:00 p.m. **Lunch**

1:00 – 3:00 p.m. **OSHA Permit Required Confined Space; Lock out Tag out and Excavation and Trench in Safety** – Instructor, Michael Lewis –WSSC Water, retired

3:00 - 5:00 p.m. **Exam Review** – Instructor, Wayne E. Reed - Army Corps of Engineers,Washington Aqueduct

5:00 – 6:00 p.m. **Dinner**

FRIDAY

8:00 – 11:00 a.m. **Final Wastewater Collections Short Course Examination**

Superintendent Course

Course Coordinator: Noelle Anuszkiewicz

The Superintendents Course is designed for certified water and wastewater superintendents, managers, supervisors and experienced operators who have previously taken basic and advanced courses. This course was designed to meet the needs of superintendents for re-certification and may be approved for other operators' certification as well. Each individual class has been submitted to the Maryland Board of Waterworks and Waste Systems Operators for TRE approval.

TUESDAY

8:00 a.m. – Noon **MOSH Inspections: Strategies for Success** – Instructor, Jessica Nines - Howard County DPW
This course will explain MOSH's role and its enforcement authority in workplace safety. Common triggers for inspections and key phases of a MOSH inspection will be discussed. Attendees will learn about the most

frequently cited violations and learn how to implement preventive measures to avoid them. Attendees will learn the importance of internal inspections and proper documentation. Attendees will learn how to interpret citations, classifications, and coordinate a corrective action plan. In addition, attendees will learn the importance of continual safety training and exercises to reinforce and enhance a culture of safety.

Noon – 1:00 p.m. **Lunch**

1:00 - 5:00 p.m. **Leadership Training: Strengthening Team Trust & Accountability** – Instructor, Christine Springer – Rising Culture Group
As utilities across the region look to strengthen team performance, adopt changes, and retain employees, they must support the development of leadership capabilities within their staff. This training will give attendees the practical tools they need to strengthen trust and improve the accountability of their teams to help achieve mission critical goals.

WEDNESDAY

8:00 a.m. – Noon **How to Survive an EPA Audit** – Instructor, Eddie Cope – Anne Arundel County DPW
The three basic phases of an EPA Audit/Inspection (Pre-audit, the Actual audit, Closing Conference/post audit) will be discussed. Pre-audit items include proper housekeeping, importance of SMEs, equipment tagging, and preparation of documents for the inspector(s). The actual audit process will be discussed including having the correct people available, proper communication, record keeping, and the inspection walkthrough. Closing Conference/Post audit items such as primary concerns, next steps, and the final report will be discussed to help attendees better prepare for an EPA Audit/Inspection.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Project Management for Lead Service Line Replacement & Funding Sources** – Instructor, Scott Harmon - Rural Communities Assistance Partnership (RCAP)
This class on Project Management for Lead Service Line Replacements is tailored specifically for water and wastewater systems, providing participants with practical tools and strategies to successfully plan, execute, and complete projects within budget and on time. While the course focuses on managing lead service line replacement initiatives, it also equips attendees with versatile project management principles and resources that can be applied to any project in water or wastewater systems. From stakeholder engagement and regulatory compliance to risk management and resource allocation, this class empowers water professionals to navigate complex challenges and deliver impactful results for their communities.

THURSDAY

8:00 – 10:00 a.m. **Leading an Effective Meeting** – Instructor, Allison Dyott – Anne Arundel County DPW

Supervisors in the water and wastewater industry are made up of first-time supervisors, mid-level managers, and seasoned leaders. This course will give leaders at every stage of professional development the skills and awareness necessary to participate in and plan their own productive meetings of all types – whether they are one-on-one, small group meetings with their staff or peers, interdepartmental meetings, or meetings with outside groups.

10:00 a.m. – Noon **The Top 10 Utility Complaints and How to Overcome Them** – Instructor, Allison Dyott – Anne Arundel County DPW

No matter how strong the water/wastewater utility is, customer complaints are inevitable. Most complaints originate from the customer's lack of understanding or a breakdown in communication. This course will identify the most common customer complaints and equip supervisors with the skills necessary to quickly and compassionately resolve them.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Advanced Filtration Processes: Theory and Practices** Instructor, Andy Kreider - Sherwood Logan and Assoc.

With increased emphasis being placed on optimum filter performance by recent legislation, this session will cover all aspects of advanced filtration processes including granular media and gravity filtration. Included in this 4-hour session will be new design and rehabilitation of existing filters, media selection and design for particle removal, types of filter layouts, instrumentation and control, filter maintenance for optimum performance, and troubleshooting when operations require help. Comparisons will be made of different methods of backwashing and students will be able to observe cross sections of pilot filters during backwashing. Different types of underdrains and filter media will be available for hands-on demonstrations.

2025 Water & Wastewater Operators Short Course Committee Members

Chairperson	John Luu (CWEA), WSSC Water
Vice Chairperson	Ivy Swann (WWOA), Anne Arundel County DPW
Treasurer:	Mark Proctor (CSAWWA), WSSC Water
Secretary/Assist Treasurer:	Maia Tatinclaux (CWEA), RK&K
Intro to Water:	Rob Nally (CSAWWA), WSSC Water
Water 3 & 4:	Dinesh Bahadursingh (CSAWWA), WSSC Water
Advanced Water:	Rob Swann (CSAWWA), Anne Arundel County DPW
Water Distribution:	David Wilkins (CSAWWA), WSSC Water
	Wanda Ketner (CSAWWA), WSSC Water
Intro/Inter Wastewater:	Rob Kraus, (WWOA), Anne Arundel County DPW
Advanced Wastewater:	Mike Marinelli, (CWEA), WSSC Water
Industrial Wastewater:	Bill Farrell (CWEA), Prostart
Wastewater Collection:	Wayne Reed (CWEA), ACE - Washington Aqueduct
	Licette Villafane (WWOA), WSSC Water
Superintendents:	Noelle Anuszkiewicz (CWEA), Anne Arundel County DPW
Admin. Coordinators:	Jay Price (WWOA/CSAWWA), Hazen & Sawyer
	Scott Harmon (CWEA/CSAWWA), RCAP
	Conrad Shows (WWOA), DCWater, Retired
	Clark Howells (CWEA), WSSC Water
	Billy Dove (CSAWWA), Hazen and Sawyer
	Doug Abbott (CSAWWA/CWEA/WWOA), Easton Utilities
	Tim Porcella (WWOA), Baltimore County Utilities
	Tom McGrath (WWOA), I.C.E. Consultants

Short Course Instructors

We offer our thanks to each instructor who volunteers his/her time and effort to convey this beneficial information to the respective students. Also, thanks to their employers who have allowed the instructors time to participate in the Short Courses. You will find the names of individual instructors listed with classes they are teaching.