WATER AND WASTE OPERATORS
ASSOCIATION OF MD, DE, AND DC

# 73rd ANNUAL SHORT COURSES FOR WATER & WASTEWATER OPERATORS

## June 5 – 10, 2022

HELD
AT

WASHINGTON COLLEGE
300 WASHINGTON AVE,
CHESTERTOWN, MARYLAND

*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)*

## 73rd SHORT COURSE PROGRAM & SCHEDULE

***All attendees must be a minimum of 18 years old and must provide proof of Covid-19 vaccination or a negative PCR test with the last 72-hours to attend. Face masks must be worn when inside, except when eating or drinking. Please check our website frequently as Covid restrictions are subject to change!***

***Important note to all overnight attendees: It is <u>your responsibility to provide your own pillow, sheets, blanket, towels, and wash cloths.</u>**
Note: The beds are Twin-XL (extra-long).

Important Reminder: A refundable $10.00 cash key deposit will be collected at the time of room registration. However, students will be billed $35.00 for lost keys.

**<u>Sunday, June 5, 2022</u>**

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|---|---|
| 4:00 to 6:00 p.m. | Registration and Room Assignments located in the Roy Kirby, Jr. Stadium Skybox (for campus map click the following link) https://www.washcoll.edu/about/campus-map.php |
| 6:00 to 11:00 p.m. | The Short Courses will begin with a Buffet Dinner at 6 p.m. in the Main Dining Room located on the second floor of Hodson Hall, followed by a Meet and Greet beginning at 7:30 p.m. located downstairs from the Dining Room. |

**<u>Monday, June 6 through Thursday, June 9, 2022</u>**

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|---|---|
| 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 |

**<u>Friday, June 10, 2022</u>**

| | |
|---|---|
| 7:00 to 8:00 a.m. | Check-out, Key Return, Breakfast for Non-commuters |
| 8:00 to 11:00 a.m. | Final Short Courses Exams |
| | **OR** |
| 9:00 a.m. to 1:00 p.m. | Maryland Board of Water and Waste Systems Operators Certification Exams for those scheduled through MDE* in the Hodson Hall cafeteria |

## Purpose

The Short Courses for Water and Wastewater Operators offer 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.

## Questions/Problems

If there are any questions not answered in this brochure or problems encountered prior to registration, you can contact Jay Price at James.Price@wsscwater.com, or Rachel Ellis at info@wwoShortCourses.org.

## Non-Discrimination Statement

The WWO Short Courses 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 Courses 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 Courses and offends the organization's core values which include a commitment to equal opportunity and inclusion. All Short Courses Committee Members instructors, students, and staff members are expected to join with and uphold this commitment.

## Washington College

The College's only function is to provide facilities for the courses. The College **should not** be contacted regarding registration or arrangements. All questions should be directed to the individuals listed above or Short Courses Committee members. Washington College is located in historic Chestertown, Maryland on Maryland's Eastern Shore north of Centreville on U.S. 213. The College is on the west side of the highway and is well marked. Directional signs to the Short Courses registration will be provided.

## *Maryland State Operator Certification Exam

This year the Maryland Board of Water and Waste Systems Operators will hold operator certification exams for all classes at the conclusion of the Short Courses on Friday, June 10, 2022 from 9 a.m. to 1 p.m. in Hodson 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 Courses. **Payment to attend the Short Courses 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 by May 27, 2022. **No more than 220 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:
http://mde.maryland.gov/programs/Permits/EnvironmentalBoards/Documents/MDE-WMA-BWW-EXM.pdf

Mail completed applications to:

Board of Waterworks & Waste Systems Operators
P.O. Box 2257
Baltimore, MD 21223

Any questions regarding the Certification Exam may be referred directly to Board staff at 1(800) 633-6101, ext. 3167 or (410) 537-3167.

## Sponsorship/Scholarships

The Annual Water and Wastewater Operators Short Courses are sponsored by the Short Courses 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 to attend the Short Courses are offered through each organization. Members of each organization are eligible per the selection process of the organization. For additional information, please see the following websites:

*One AWWA Short Courses Scholarship - www.csawwa.org*
*WWOA Short Courses Scholarship – www.wwoa.net*
*CWEA/Stanley Kappe Short Courses Scholarship – www.chesapeakewea.org*

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 one of the Short Courses Staff.

## Conduct of Participants

Throughout the history of the Short Courses most participants have conducted themselves in a most reasonable manner and are a 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 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 Courses immediately and will be banned from all future Short Courses. Unduly under the influence will be in the judgment of any Short Courses Committee member or university official.

## Attendance and Training Credit Hours Earned

The policy of the Short Courses Committee is that a student must attend at least 80% of the training (Short Courses final exams included in the total time). The State examination does not count towards class attendance as part of the Short Courses. 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 with the actual hours attended. The Short Courses Committee does not submit individual classes for TRE credits with the exception of the Superintendent Course. Attendees have the option to submit classes for individual approval.

If you are taking a State Certification exam on Friday, June 10th, and you are also interested in taking the Short Courses final exam, you may do so Thursday evening. Only individuals taking the State Certification exam will be eligible for this option. You must make arrangements with the course coordinator by Tuesday, June 7th. **All participants must sign their own name to the attendance sheets during the class to receive credit. NO EXCEPTIONS.**

## Delaware Operator License Holders

Certified Delaware Operators can submit MDE approved courses for credit with Delaware.

**Short Courses 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 and number (none, CSAWWA, CWEA, WWOA)
    b. Scholarship Winner (yes/no)
    c. Type of registration (Full week or single day)
    d. Attending the Sunday buffet (yes/no)
    e. Attendee information: First Name, Last Name, Email Address, Phone #, Emergency contact phone #, Organization/Company name, Address, Gender, Age (**must be 18 to attend**)
    f. Which course you the attendee plans to attend: Intro to Water, Water 3&4, Advanced Water, Water Distribution, Advanced Water Distribution, Introduction/Intermediate Wastewater, Advanced Wastewater, Industrial Wastewater, Wastewater Collection, or Superintendent

    Connect to our online registration system by visiting : https://wwoshortcourses.regfox.com/73rd-annual-short-courses or go through the Short Courses website at www.WWOShortCourses.org

2. Complete individual or group registration(s)
3. Pay – see prices below
4. Print your invoice – **No invoice will be mailed to you!**
5. For help with registration, send email to info@wwoshortcourses.org

## Course Registration

The registration link is now live! **Registration ends at midnight on May 21, 2022. There will be no onsite registration! Please be aware that class sizes are limited, so please register early.**

| Registration Packages | **Members** April 1st - May 7th | **Non-Members** April 1st - May 7th | **Members** May 8th – 21st | **Non-Members** May 8th - 21st |
|---|---|---|---|---|
| Full Week–Complete Pkg. (classes, meals, lodging) | $600 | $625 | $650 | $675 |
| Full Week–Classes & lunch only | $325 | $350 | $375 | $400 |
| Single Day - Classes & 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 |

**Payment**

- Pay online using debit/credit card - you can register a group of attendees using one debit/credit card. CHECK PAYMENTS ARE NO LONGER ACCEPTED.
- Cancellations will be assessed a fee of $25.00. No refunds will be issued May 31 – June 5, 2022.

**NOTE: Certificates of attendance will be issued approximately two weeks after the event to the email provided at registration.**

## 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 (410)778-7810. Messages will be taken, and every attempt will be made to contact you. The 24-hour lockout/guest assistance number is 443-694-9867.

## On-Site Help

If you are a single day or late registrant, an instructor, or if you have any questions/problems during the week, you can find help in the Short Courses Headquarters in Room #108 of Daly Hall from 7 a.m. to 5 p.m. The phone number is 410-778-7206, during the hours of 7 a.m. to 5 p.m., or you can ask a Short Courses Committee member to assist you. After hours, please call Short Courses Chairperson, Jay Price at (240)521-3297.

## Overnight Room Accommodations

Overnight accommodations 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 5th and must be vacated by 8 a.m. on Friday, June 10th. **A refundable $10.00 cash key deposit will be collected at the time of registration. However, students will be billed $35.00 for lost keys.** Room and board costs include the standard cafeteria meals (breakfast and dinner) served in Hodson Hall. Lunch is included in the registration cost for all attendees.
**REMINDER: NO LINENS WILL BE PROVIDED.** The beds are Twin-XL (extra-long).

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 other attendee(s), you can pay his/her key deposit at time of check-in, and they will receive their key upon completion of their check-in. Please coordinate with that person(s) so they are aware that you have already reserved a room for them. If you chose 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 with the motel. If you wish to eat breakfast and/or dinner on campus, you must purchase a meal plan during registration.

Meals for on-site accommodations begin with the buffet dinner on Sunday evening and end with breakfast on Friday morning. The serving times are:

Breakfast – 7:00 to 8:00 a.m.
Lunch – Noon to 1:00 p.m.
Dinner – 5:00 to 6:00 p.m.

## 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.

## No Smoking

Smoking is prohibited in all college buildings including residential halls, and outdoors within 25 feet of all college buildings. **Violations will result in a $250 fine which will be the responsibility of the person smoking**. Repeat violations may result in the loss of campus housing and/or campus visitation privileges.

## Evening Recreational Activities @ Hodson Hall Game Room

Sunday 6:00 – 11:00 p.m. Buffet Dinner, Meet & Greet to follow.
Monday 7:00 – 11:00 p.m. Nacho Grande Night, Televised Sports
Tuesday 7:00 – 11:00 p.m. Pizza Night, Water/Wastewater Trivia Contest & Televised Sports
Wednesday 7:00 – 11:00 p.m. Wing Night, Karaoke and Televised Sports
Thursday - Study Night, No Activities Scheduled

## Disclaimer

Several Short Courses curriculums are designed for those persons just entering the field and/or persons holding Operator-in-Training certificates. Attendance at these classes in no way implies a guarantee that those participating in the sessions are assured of passing the State Certification exam. However, over the long history of the Short Courses, MDE exam results indicate that the courses have proven helpful. Fully certified operators should take the more advanced sessions for re-certification credit however, all sessions are submitted for TRE credits.

# SESSION LISTINGS

## Introductory Water

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 approved for Maryland TRE credits (7250-22-3). Course Coordinator: Rob Nally

### MONDAY

8:00 – 8:30 a.m. **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 Class 1 or 2 State Certification Exam for Water Treatment.

8:30 a.m. – Noon **Well Systems –** Instructor, Edward Cope - Anne Arundel County DPW
This course is intended for superintendents and operators of public water systems that utilize groundwater wells as a source of supply. Topics to be covered include groundwater hydrogeology; types of wells and drilling techniques; well pumps, motors, and control systems; well pump station design; operational strategies; well maintenance and rehabilitation alternatives; water quality monitoring; performance monitoring and troubleshooting; and sanitary risks and protection.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Coagulation, Flocculation & Sedimentation –** Instructor, Edward Cope – Anne Arundel County DPW
Session will cover the first three steps of conventional water treatment process; including rapid mixing, types of flocculation, and sedimentation will be discussed.

## TUESDAY.

8:00 a.m. – Noon **Water Treatment Processes** – Instructor, Perry Violet, WSSC Water
This course 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. **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.

## WEDNESDAY

8:00 – 10:00 a.m. **Fluoridation in Drinking Water –** Edward Cope – Anne Arundel County DPW
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.

10:00 a.m. – Noon **pH Control in Drinking Water –** Edward Cope – Anne Arundel County DPW
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.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **PLC Systems for Water Operators** – Instructor, Augustus Davies, 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.

## THURSDAY

8:00 a.m. – Noon **Applied Mathematics** – Instructor, Perry Violet – WSSC Water
This session will focus on basic mathematics and applications fundamental to the 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 – 5:00 p.m. **Centrifugal Pumps and Distribution Systems** – Instructor, Billy Dove – Baltimore City DPW
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.

## FRIDAY

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

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## Water 3 & 4 Course

The Water Treatment 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 approved for Maryland TRE credits (7251-22-3, Process, All T/D Operators). Course Coordinator: Dinesh Bahadursingh

## 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, Terry Bradley, City of Bowie
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, 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.

## TUESDAY

8 a.m. – Noon **Water Treatment Processes** – Instructor, Perry Violet, WSSC Water
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, and Jay Price, WSSC Water. 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.

## WEDNESDAY

8:00 a.m. – Noon **Centrifugal Pumps and Distribution Systems** – Instructor, Billy Dove, Baltimore City DPW
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**

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**PLC Systems for Water Operators** – Instructor, Augustus Davies, 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.

## THURSDAY

8:00 a.m. – Noon **Applied Mathematics** – Instructor, Scott Harmon – Maryland Rural Water.
This session will focus on basic mathematics and applications fundamental to the 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 Short Course final exam.

**FRIDAY**

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

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## Advanced Water Course

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. Persons taking this course should be a certified operator with approximately four years or more experience in water treatment technology and have completed basic introductory water courses. This course has been approved for Maryland TRE credits (7252-22-3, Non-Process, All T/D Operators & Superintendents). Course Coordinator: Rob Swann

**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 **Disaster Preparedness and Response for Public Works -** Instructor, Pete Steps, Anne Arundel County DPW (retired)
Topics discussed in this session will pertain to natural disasters, terrorist attacks and any other disaster that may affect daily operations. Covering topics like mitigation, preparedness, response and recovery. FEMA and Emergency operations

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

1:00 - 5:00 p.m. **Advanced Filtration Processes: Theory and Practices** Instructor, Patrick Foley, 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 four-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. 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

## TUESDAY

8:00 a.m. – Noon **ALICE (Alert, Lockdown, Inform, Counter, Evacuate) Training -** Instructors, Angela Ballard-Lander, James Lawrence, WSSC Water
Training is designed to educate individuals on how to prepare and plan for intruder threat/active shooter attack. The ALICE training method is very different than the traditional "lockdown only" approach. The goal of the training is to increase the odds of survival by taking a more proactive approach.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Understanding the Dangers of and Treatment Methods for PFAS Chemicals –** Instructor, TBD
This session will be covering 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.

## WEDNESDAY

8:00 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** – Instructor, Eddie Cope, 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.

## THURSDAY

8:00 - 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 have to 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. **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

**FRIDAY**

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

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## Water Distribution Course

The Water Distribution Systems Courses are designed for those who operate and maintain a water distribution system. They are for both the beginner and seasoned operator and will cover basic and advanced concepts. This course has been approved for Maryland TRE credits (7253-22-3, Non-Process, All T/D Operators). Course coordinator: David Wilkins

**MONDAY**

8:00 a.m. – Noon **Safety -** Instructor, Michael Lewis, 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 the Right to Know

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Water Treatment** – Instructor, Perry Violet, WSSC Water
The purpose of this Disinfection Strategies class is to provide the attendee with some disinfection strategies used in the water and wastewater industries. It will explain some physical and chemical disinfection strategies used in the water treatment and the effects on the water distribution system. It will also discuss advantages and disadvantages of the various treatment techniques as well as the benefits of multiple disinfection strategies approach.

**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 the area of distribution math as it relates to water calculations. You will learn how to compare ratios and proportion, solve 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)**

## WEDNESDAY

8:00 a.m. – Noon **Centrifugal Pumps and Distribution Systems** – Instructor, Billy Dove – Baltimore City DPW
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 Distribution Systems (continued)**

## THURSDAY

8:00 a.m. – Noon **Water Main Tapping, Fire Hydrants & Valves** – Instructor, Mark Snyder, Mueller Co. and Pat Burke, Ferguson Waterworks
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 – 3:00 p.m. **Valves and Hydrants** – Instructors, Mark Snyder, Mueller Co. & Pat Burke, Ferguson Waterworks
Instruction will include a detailed description of parts and repairs to include the disassembly and assembly of valves and fire hydrants.

3:00 – 5:00 p.m. **Session Review & Test Taking Techniques** – Instructor, David Wilkins, WSSC Water
This session will be a review of the week's material in preparation for Short Course and/or the State exam, along with some techniques on how to take an exam.

## FRIDAY

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

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**Advanced Water Distribution**

The Advanced Water Distribution courses are designed for veteran distribution operators that maintain and operate a water distribution system. This course will cover advanced topics and build off topics covered in the Water Distribution Course. Topics in this course include Backflow Prevention, Underground Tank Construction, Water Main Construction, Valve Repair, Centrifugal Pumps and Distribution Systems, Water Main Tapping, Valves, and Hydrants. Persons taking this course should be a certified operator or have completed the Water Distribution Course. This course has been approved for Maryland TRE credits (7254-22-3, Non-Process, All T/D Operators). Course coordinator: Clark Howells

## MONDAY

8:00 – 8:30 a.m. **Overview** – Course Coordinator, Clark Howells – Baltimore City DPW
An overview of the Advanced Water Distribution course will be presented, course objectives and TRE requirements will be discussed.

8:30 a.m. – Noon **Backflow Prevention** – Instructor, Chip Matthews -WSSC
This course is designed to meet the needs of water/wastewater professionals by focusing on the essentials of developing and managing an effective cross-connection control program. Topics include legal authority, policies, record keeping, training and education, assembly standards, the elements of a good ordinance, and liabilities and responsibilities. In addition, this course will also touch on Methods, Devices and Assemblies used in Cross Connection Control and Ways to choose the proper containments of Isolations component.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Backflow Prevention** – Instructor, Chip Matthews -WSSC
This course is designed to meet the needs of water/wastewater professionals by focusing on the essentials of developing and managing an effective cross-connection control program. Topics include legal authority, policies, record keeping, training and education, assembly standards, the elements of a good ordinance, and liabilities and responsibilities. In addition, this course will also touch on Methods, Devices and Assemblies used in Cross Connection Control and Ways to choose the proper containments of Isolations component.

## TUESDAY

8:00 a.m. – Noon **Buried Reservoirs and Achieving LT2 Compliance –** Omar Morsy, Baltimore City
This course will shed light on the various phases of the ongoing Druid and Ashburton underground tank projects, as well as associated impacts on an existing water supply system serving 1.8 million customers. Both reservoirs were required to either be covered or undergo additional treatment, in order to achieve compliance with the EPA Long Term 2 Enhanced Surface Water Treatment Rule. Topics covered include design considerations, planning challenges, changes to system hydraulics/resilience and community outreach.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Water Distribution System Replacement Program and Operational Considerations –** Instructor, Hernan Guadalupe- Baltimore City DPW
This course will provide an overview of all aspects of the City's water main replacement program, from initial planning, prioritization and modeling of projects to design, construction, inspections, testing, and turnover to operations. The course will also cover operational and community aspects related to capital projects, including valve and hydrant management, required shut-downs, and community outreach.

## WEDNESDAY

8:00 a.m. – Noon **Centrifugal Pumps and Distribution Systems** – Instructor, Billy Dove – Baltimore City DPW
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. **Valve Repair** – Instructor, Tim Allen – WSSC
This session will be a discussion on valve repair and its importance in the distribution system. Repairing valves rather than just replacing them can have positive cost benefit as well as reduce the impact on distribution system that sometimes comes with valve replacement.

## THURSDAY

8:00 a.m. – Noon **Water Main Tapping, Valves, and Hydrants -** Instructors, Mark Snyder - Mueller Co. & Pat Burke - Ferguson Waterworks
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 – 3:00 p.m. **Water Quality Monitoring Within the Distribution System-** Instructor, Deborah Pitts – Baltimore City DPW
The course will cover the importance of the distribution system as a barrier for protecting public health. Identify water quality standards and regulations that impact the distribution system and to review sampling protocols for distribution system regulation compliance.

3:00 – 5:00 p.m. **Course Review** – Instructor, Clark Howells – Baltimore City DPW
This session will be a review of the week's material in preparation for the Short Course final exam.

## FRIDAY

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

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## Introductory/Intermediate Wastewater Course

The course is designed for the Operator-In-Training with basic wastewater skills. The operator taking this course will generally have one to three years of operating experience. Information covered in this session should be helpful with some parts of the certification exams, but in no way assures 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 approved for Maryland TRE credits (7255-22-3, Process, All W Operators). Course coordinator: Rob Kraus

## 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 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 waste water 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
The understanding of pumps and moving fluids through water and waste water treatment plant 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.

or

**Applied Mathematics** – Instructor, Don Sprinkle – Howard County (Retired)
This course will focus on basic mathematics and application fundamentals to the water treatment industry. Upon completion of this course, personnel should be able to perform calculations needed to verify various plant processes. Examples include chemical dosing, retention time, pressure backwash flow rates and horsepower pump rates.

## Tuesday

8:00 a.m. - Noon **Activated Sludge Process Control** – Instructor, Lenny Gold, LGA
This session will focus on activated sludge treatment of wastewater and the techniques for monitoring and controlling the process. 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. **Activated Sludge Process Control (continued)**

## 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. **Advanced Treatment (continued)**

## Thursday

8:00 a.m. - Noon **Chemicals -** Instructor, Andrew Rupprecht- 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.

## Friday

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

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## Advanced Wastewater Course

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 approved for Maryland TRE credits (7256-22-3, Process, All W Operators). Course Coordinator: Mike Marinelli

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 these 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 **Pumps –** Instructor, John Weis, MM Engineering
The understanding of pumps and moving fluids through water and waste water treatment plant is essential. This session will discuss the various types of pumps use as well as routine maintenance and troubleshooting, what causes cavitation and how to recognize and solve it.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Sludge Thickening and Digestion -** Maia Tatinclaux, RK&K
Aerobic and Anaerobic digestion of waste water 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

## TUESDAY

8:00 a.m. – Noon **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.

Noon – 1:00 p.m. **Lunch**

1:00 - 5:00 p.m. **Sustainable Management of Water Systems**
Instructor, Bill Shreve, Charles County DPW (retired)
Participants will learn about and use the key management areas, the self-assessment process, and tools, tips, and measure for performance improvement. Objectives for the day are for ways to think about managing your system more sustainably and learn about self-assessment process that can be used in various settings to improve understanding about utility operating and capital requirements as well as build support for needed performance improvements.

## WEDNESDAY

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

## THURSDAY

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

Noon – 1:00 p.m. **LUNCH**

1:00 - 4:00 p.m. **An In-Depth Look at ENR (continued)** – Instructor, Marty Johnson - WSSC

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

## FRIDAY

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

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## Industrial Waste Treatment Course

The Industrial waste treatment course is designed to cover a broad range of topics in the field. Both biological and physical chemical treatment will be discussed. The technology discussed will apply to both direct industrial dischargers and indirect dischargers to the Publicly Owned Treatment Works (POTWs). The sessions will focus on topics requirements for the Industrial Waste water Works and Pretreatment Plants of Class-4, Biological lagoons, and Class-5, Activated Sludge. This course has been approved for Maryland TRE credits (7257-22-3, Process, All I Operators). Course coordinator: Bill Farrell

## Monday

8:00 - 9:00 a.m. **Course Objectives & Orientation** – Course Coordinator, Bill Farrell, Prostart
This session will provide an introduction to the course with an explanation of its objectives and attendance requirement. Each session covered in this course will be discussed along with the resources available for review of course material and the examination format.

9:00 a.m. - Noon **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 the consequences of being classified as a SIU and reporting requirements.

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

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 waste water discharge parameters.

## Tuesday

8:00 a.m. - Noon **Chemical Feed –** Instructor, Tim McComas, Coyne Chemical
This session covers the use of Chemicals in the treatment of waste water. Topics will include the 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. **Metals Precipitation/ Oil Water Separation, Thickening & Dewatering** – Wayne Ludwig, WSSC Water (retired)

## Wednesday

8:00 a.m. - Noon **Pumps** – Instructor -John Weis, MM Engineers
This 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 - 5:00 p.m. **Controls** – Instructor, Allan Rodgers, Omni Engineering
Automation and controls are becoming more a part of waste water treatment plants as costs for equipment and reliability of process meters and sensors has 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.

## Thursday

8:00 - 9:00 a.m. **Principles of Biological Treatment**- Chris Younger, Harford County DPW
This section will cover the wastewater characterization, an introduction to biological treatment systems, and basic microbiology.

9:00 - 10:00 a.m. **Anaerobic Treatment Processes**- Instructor- Chris Younger, Harford Co DPW
The principles of biological 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. An overview of the equipment layouts associated with anaerobic systems will be presented along with a discussion of the &O&M issues.

10:00 a.m. - Noon **Aerobic Treatment** I – Instructor- Chris Younger, Harford Co DPW
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. **Membrane Treatment** – Instructor Rob Kerschner, Kerschner Environmental Technologies
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.

3:00- 4:00 p.m. **Course Review**- Coordinator-Bill Farrell, Prostart

4:00- 5:00 p.m. **Course Final Exam**

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## Wastewater Collection Systems Course

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 approved for Maryland TRE credits (7258-22-3, Non-Process, W4/W5/C Operators). Course coordinators: Wayne Reed & Licette Villafane

**MONDAY**

8:00 – 8:30 a.m. **Overview** – Course Coordinators, Wayne E. Reed, Army Corps of Engineers, Washington Aqueduct and Licette Villafane of WSSC Water will provide an overview of the wastewater collection program will be presented, with course objectives and TRE requirements being discussed.

8:30 - 9:30 a.m. **Force Main Inspection and Assessment** - Instructor, Ethan Vidal, Xylem Inc.
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. **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 the industry. Industry standards covering design life, product performance and acceptance testing will be reviewed to help ensure a successful manhole rehabilitation project.

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 and for pressure system's,Bernoulli's Principle will be

explained. Example problems 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. **Flow Monitoring** – Instructor, George Clark, WSSC Water
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.

2:00 – 3:00 p.m. **An Introduction to Asset Management** – Instructors-
Gian Cossa,Gregory Stephens and 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.

3:00 – 4:00 p.m. **SSES//Private Property I/I** – Instructor, Paul Sayan,
Louis BergerWater Services
The presentation will explain the purpose of the SSES investigations including flow monitoring, CCTV and manhole inspections, smoke and dye testing. The presentation will also discuss how SSES investigations are related to private property inflow/ infiltration and general guidance to develop and implement a private property I/I reduction problem.

4:00 – 5:00 p.m. **Wastewater Pumping and Operations** – Instructor, Wayne Reed, ArmyCorps of Engineers, Washington Aqueduct
Wastewater pumping and operations presentation will discuss wet well maintenance for settling, grease and odor control. Discussions will carry 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.

## 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 the water and wastewater treatment 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.

**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)**

**THURSDAY**

8:00 – Noon **OSHA Permit Required Confined Space; Lock out Tag out and Excavation and Trench in Safety -** Instructor, Michael Lewis, WSSC Water
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 – 5:00 p.m. **Exam Review -** Instructor, Wayne E. Reed - Army Corps of Engineers,Washington Aqueduct

**FRIDAY**

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

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## Superintendents Course

The Superintendents Course is designed for certified superintendents, managers, supervisors, and experienced operators who have taken basic and advanced courses. This course was designed to meet the needs of superintendent's recertification and may be approved for other operators' certification as well. Each of the four 4-hour classes have been approved for Maryland TRE credits.

- ALICE (Alert, Lockdown, Inform, Counter, Evacuate) (6532-19-3, NP, All Operators & Superintendents)
- Sustainable Management of Rural and Small Systems (6533-19-3, NP, Superintendents only)
- Incident Command System & National Incident Management (7259-22-3, NP, All Operators & All Superintendents)
- Compliance & Safety for Small Water Systems (7260-22-3, NP, All Operators & All Superintendents)

Course coordinators: Winfield McKell & Michael Lewis

## TUESDAY

8:00 a.m. – Noon **ALICE (Alert, Lockdown, Inform, Counter, Evacuate) Training -** Instructors, Angela Ballard-Landers & James Lawrence -- WSSC Water
ALICE is designed to educate individuals on how to prepare and plan for intruder threat/active shooter attack. The ALICE training method is very different than the traditional "lockdown only" approach. The goal of the training is to increase the odds of survival by taking a more proactive approach.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Sustainable Management of Rural and Small Systems Workshop –** Instructor, Bill Shreve (Charles County - retired)
Participants will learn about and use the key management areas, the self-assessment process, and tools, tips, and measures for performance improvement. The two overarching objectives for the day are for the participant to learn about ways to think about managing your system more sustainably and learn about a self-assessment process that can be used in various settings to improve understanding about utility operating and capital requirements and build support for needed performance improvements.

## WEDNESDAY

8:00 a.m. – Noon **Incident Command System and National Incident Management - System**
Instructor, David McDonough, J.D., WSSC Water
ICS 100 - Introduction to the Incident Command System, introduces the Incident Command System (ICS) and provides the foundation for higher level ICS training. This course describes the history, features and principles, and organizational structure of the Incident Command System. It also explains the relationship between ICS and the National Incident Management System (NIMS). At the completion of this course, you should be able to:

- Explain the principles and basic structure of the Incident Command System (ICS).
- Describe the NIMS management characteristics that are the foundation of the ICS.
- Describe the ICS functional areas and the roles of the Incident Commander and Command Staff.
- Describe the General Staff roles within ICS.

- Identify how NIMS management characteristics apply to ICS for a variety of roles and discipline areas.

IS-700, provides an overview of the National Incident Management System (NIMS). The National Incident Management System defines the comprehensive approach guiding the whole community - all levels of government, nongovernmental organizations (NGO), and the private sector - to work together seamlessly to prevent, protect against, mitigate, respond to, and recover from the effects of incidents. The course provides learners with a basic understanding of NIMS concepts, principles, and components. At the end of this course, students will be able to:

- Describe and identify the key concepts, principles, scope, and applicability underlying NIMS.
- Describe activities and methods for managing resources.
- Describe the NIMS Management Characteristics.
- Identify and describe Incident Command System (ICS) organizational structures.
- Explain Emergency Operations Center (EOC) functions, common models for staff organization, and activation levels.
- Explain the interconnectivity within the NIMS Management and Coordination structures: ICS, EOC, Joint Information System (JIS), and Multiagency Coordination Groups (MAC Groups).
- Identify and describe the characteristics of communications and information systems, effective communication, incident information, and communication standards and formats.

Noon – 1:00 p.m. **Lunch**

1:00 – 5:00 p.m. **Compliance & Safety for Small Water Systems**

Instructor, Scott W. Getchell, PO, GMB Architects/Engineers

Participants will learn a wide variety of compliance related topics such as the induction and compliance of the SDWA, proper sampling procedures and associated regulations, operator certification requirements, MDE permits and reporting, proper operator recordkeeping, OSHA and EPA requirements. These important topics were compiled for the beginning operator as well as the experienced operator/manager.

**Agenda**

1. Introductions and class objectives
2. Safe Drinking Water Act
3. Water Sampling
4. Operator Certification Requirements
5. MDE Regulations
6. Record Keeping
7. OSHA Regulation
8. Risk Management Plans
9. Process Safety Management

# 2022 Water & Wastewater Operators Short Courses Committees

| | |
|---|---|
| **Chairperson:** | Jay Price (WWOA/CSAWWA), WSSC Water |
| **Vice Chairperson:** | Rob Nally (CSAWWA), WSSC Water |
| **Treasurer:** | Clark Howells (CWEA), Baltimore City DPW |
| **Secretary/Assist Treas:** | John Luu (CWEA), WSSC Water |
| **Water Treatment:** | Rob Nally (CSAWWA), WSSC Water<br>Rob Swann (CSAWWA), Anne Arundel County DPW<br>Dinesh Bahadursingh (CSAWWA), WSSC Water |
| **Water Distribution:** | David Wilkins (CSAWWA), WSSC Water<br>Clark Howells (CWEA), Baltimore City DPW |
| **Wastewater Treatment:** | Rob Kraus, (WWOA), Anne Arundel County DPW<br>Mike Marinelli, (CWEA), WSSC Water |
| **Industrial Wastewater:** | Bill Farrell (CWEA/WWOA/CSAWWA), MEI/RTS/Prostart<br>Conrad Shows (WWOA), DCWater (Retired) |
| **Wastewater Collection:** | Wayne Reed (CWEA), ACE - Washington Aqueduct<br>Licette Villafane (CSAWWA), WSSC Water |
| **Superintendent**: | Winfield McKell (WWOA), WSSC Water<br>Michael Lewis (CSAWWA), WSSC Water |
| **College Liaison:** | Jim Timmons (WWOA), Baltimore City DPW (Retired) |
| **Admin. Coordinators:** | Noelle Anuszkiewicz (CWEA), Anne Arundel County DPW<br>Angela Ballard-Landers (CSAWWA), WSSC Water<br>Billy Dove, (CSAWWA), Baltimore City DPW<br>Scott Harmon (CWEA/CSAWWA/WWOA), MD Rural Water<br>Ivy Swann (WWOA), Anne Arundel County DPW<br>Maia Tatinclaux (CWEA), RK&K Engineering |

**Short Courses Instructors & their Employers**

We offer our sincere thanks to each instructor who is giving of their time and effort without monetary compensation 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 instructors and employers with the classes they are teaching.

A special thanks goes out to Rachel Ellis, President of Voda, for her work on registration and check-ins. Without her dedicated efforts, this event could not take place.