

COURSE DESCRIPTIONS

WATER TRAINING

Advanced Water Treatment (48 contact hours)

This course is conducted in two 24-hour segments (**Advanced Water I and Advanced Water II**) and is designed for experienced operators preparing to take the Class II and Class I Certification Exams. Conventional water treatment, groundwater plant operations, advanced math, rules and regulations, laboratory procedures, supervisory practices, etc. will be emphasized.

Basic Water Treatment (40 contact hours)

This training helps prepare new operators for the Class III Certification Exam. Topics include rules and regulations, surface and groundwater sources, unit process control, basic math, simple laboratory control tests, safety and maintenance.

Small Water System Class IV Training (6 contact hours)

The Georgia Board of Examiners for Certification of Water and Wastewater Treatment Plant Operators and Laboratory Analysts has developed training and certification requirements for public ground water systems serving populations less than 1000. This training helps prepare operators for the Class IV Certification Exam.

Water Distribution Systems (27 contact hours)

This training helps prepare students for the certification exam focusing on a variety of subjects including piping material and specifications, construction procedures, storage facilities, disinfection, repairs, backflow prevention, meters, pumps, valves, basic math, safety, etc.

Water Laboratory for Analysts and Operators (27 contact hours)

This laboratory course is an in depth study of the basic introduction and theory of the chemistry and microbiological analysis of water. The twenty seven (27) hour course is designed to train the personnel in the proper and safe use of laboratory apparatus and equipment necessary to perform tests required to provide safe drinking water. The course will cover all need to know material required to prepare reagents, take samples, and perform process, quality control, and compliance testing.

BACKFLOW TRAINING

Backflow Prevention Assembly Testers' Certification Training (32 contact hours)

This training session meets all State of Georgia and American Backflow Prevention Association (ABPA) Standards and *prepares* students with information, training and hands-on practice opportunities to become a Certified Backflow Prevention Assembly Tester. The Manual of Cross Connection Control, Ninth Edition, handout supplements and visual aids are used. The course focuses on the hazards of cross-connections, operating fundamentals of tested devices, basics of cross-connection inspections, customer relations and legal aspects of backflow assembly testing. The certification and renewal is administered for EPD by GAWP. For exam schedule, registration and renewal forms see www.gawp.org.

Backflow Testers' Review and Update (12 contact hours)

This session is provided to provide testers' knowledge in the most current approved testing procedures, regulatory concerns, while fulfilling backflow specific recertification training requirements for Backflow Testers' Certification Renewals.

WASTEWATER TRAINING

Our “Advanced Courses” have been modified into 24 hour modules, in effort to better accommodate your requests. This will allow your course selections, as you prepare for Certifications, to more effectively reflect your specific training needs and interests. Courses below, not designated as Basic or Advanced, are also offered for your professional enrichment and to aid in fulfilling recertification point requirements. All Course Curricula reflect latest available “Needs-to-Know,” distributed through our Georgia State Certification Board.

Basic Wastewater (40 contact hours) *Basic*

This course is designed to give the entry level operator exposure to a variety of treatment systems. Course topics include: basic math, nature of solids, collection system design and usage, biology of wastewater treatment, secondary treatment, disinfections, solids handling, basic process control, maintenance and pumps.

Wastewater Collection Systems (27 contact hours) *Basic*

This training helps prepare operators for the certification exam. Topics include design, types of system design, types of collection systems, the nature of wastewater, maintenance of the collection system, inspection procedures (video testing, lamping testing, smoke testing, and pressure testing), pumps, lift stations and basic math.

Activated Sludge Process Optimization (24 contact hours) *Advanced*

The rest of the story – beyond typical advanced wastewater module training; a focused program of classroom and hands-on training providing the skills necessary for you to facilitate evaluating and optimizing your specific activated sludge treatment plant operations. Based on the concepts developed by Dr. Al West (former Director of EPA’s R&D Center) – settleometer, centrifuge, mass balance, microscopic examination, OUR, and expounded through the course text,

Tom Hobson’s, Activated Sludge, Evaluating and Controlling Your Process. Topics include Optimizing Reactor Environments, Solids Inventory Control, Loading & Nutrient Balance, Promoting Process Responses through Applied System Pressures, and Minimizing Process Inhibition. General knowledge is also pertinent to “SBR” systems.

Solids Management and Process Optimization - Water and Wastewater (24 contact hours) *Advanced*

Treatment Residues, both water and wastewater, constitute organic and non-volatile, pollutants and contaminants. The sheer strength of these constituents greatly magnifies the complexity and expense of their treatment and disposal. This course focuses on techniques to optimize relevant processes for solids thickening, stabilization, dewatering, and disposal, as well as, proactive considerations to minimize residue production and handling.

Tertiary Treatment & Nutrient Removal (24 contact hours) *Advanced*

These three days encompass the advanced methodologies utilized to accomplish treatment effluent requirements beyond typical secondary levels. Filtration – Adsorption & Absorption, Coagulation/Flocculation–Sedimentation, Dissolved Air Flotation, Odor Control, Ion Exchange and Electrodialysis, Residuals Management, Nutrient Removal – Nitrification & Denitrification, and Phosphorous (both Biological & Physical/Chemical removal), and Recycle Waste-stream Minimization are a partial listing of the components and concepts addressed.

Wastewater Laboratory for Operators and Analysts (24 & 27 contact hours) *Advanced & Laboratory Analysts*

This comprehensive combination of classroom instruction and hands-on training, utilizes an active, functional, analytical laboratory environment. Knowledge encompasses general chemistry, microbiology, sampling & preservation techniques, standardization and instrument calibration, analytical procedures, record keeping, quality assurance & control, and safety.

Wastewater & Wastewater Treatment Facility Optimization (24 contact hours) *Advanced*

This course is a developmental continuation of the “Basic Wastewater,” curriculum foundation. In the basic course, the student learns the terminology and process relationships of wastewater treatment. In this course, individuals progress through an inclusive treatment system; determining unit loadings, performing applicable laboratory calculations, using process control formulae, and facilitating the optimization of each operational component found within typical preliminary, primary, secondary, and solids handling systems.

Water and Wastewater Utilities Supervision and Management (24 contact hours) *Advanced*

A practical approach to management, the student learns the basics of management, planning and time management, organizing, staffing and directing personnel. The course consists of lecture, group activities and group interaction. This course may be taken by either water or wastewater treatment plant operators.

Basic Industrial Wastewater Treatment (27 contact hours) *Basic*

This course is based on the physical/chemical treatment processes utilized to treat industrial wastes. Topics include: unit process theory of operation, process relationships, coagulation, flocculation, sedimentation, filtration, basic and applied math concepts, metals waste treatment, neutralization, control systems, instrumentation and 40 CFR.

Wastewater Stabilization Ponds Class IV Certification Training (8 contact hours)

This course was developed to prepare small pond system operators to make competent process control decisions and research problems affecting treatment. Topics include: pond system design, basic biology of treatment, troubleshooting vs. process optimization, group activities, troubleshooting system problems using case studies and group discussions.

MATH TRAINING

Applied Math (12 contact hours) *Advanced*

An extended program that provides the opportunity for more industry specific math applications than just formula/concept exposure. Completion of Basic Math is a prerequisite.

Basic Math (8 contact hours for Enrichment/Recertification Only)

This workshop is designed to help operators become acquainted with general math concepts. Topics include: math - no fear, how to set up a problem, how to use word problems and how to perform basic calculations required around the plant. This course may be taken by either water or wastewater operators.

SPECIALIZED TRAINING

(For Enrichment/Recertification Only)

Confined Spaces (6 contact hours)

This course is designed to provide the person entering confined spaces with the necessary information they need to enter confined spaces safely. Topics include: OSHA requirements for permitting confined spaces, safety equipment, team development and entry and exit procedures using OSHA approved tripod, harness and breathing apparatus.

Hydrogen Sulfide Prevention & Corrosion Control (6 contact hours)

Very possibly the weakest link in our wastewater infrastructure preservation, corrosive properties of H₂S and pH extremes demand unfathomable expenditure\$ in system restoration and revitalization. This Workshop addresses both preventative and proactive approaches to monitor and minimize the formation, destructive effects, and the undesirable odors of these noxious gases.

Industrial Pretreatment Facility Inspection (12 contact hours) This comprehensive curriculum offers a professional approach to industrial customer relations and pretreatment inspection. Topics include regulation, permitting, inspection techniques, sampling and preservation, flow monitoring, reporting, enforcement, and an overview of various industrial treatment processes.

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Minimizing Sewer Blockages & Grease Nuisances (6 contact hours)

Utilizing historical service records, enforcement of existing Sewer Use and Grease Management Ordinances, and preventive maintenance techniques are all integral parts of a program to minimize sewer blockages, damage claims, and poor customer relations. Focusing on these along with a discussion of customer communications techniques can reduce both customer inconvenience and utility liability.

Natural Treatment Process (12 contact hours)

This new course has been developed to fulfill your specific requests; providing relevant training for operators in the widely utilized natural wastewater treatment processes, as well as guidance to facility designers. Although focused on the needs of operator knowledge and certification, addressing operation, maintenance, process optimization and troubleshooting; we will also address these processes from a design approach: evaluating process loading, design, providing system operational flexibility, and vegetation selection concepts. We will be studying processes like waste stabilization/oxidation ponds - aerobic, anaerobic, and facultative - holding and equalization structures, varied types of land application, vegetation, utilization, and irrigation methods, and many facets of constructed wetland design and operation.

Pump Maintenance, Troubleshooting, and Efficiency (6 contact hours)

This one day course is an overview of preventive and predictive maintenance techniques promoting unit dependability; such as lubrication, alignment, amperage & temperature monitoring, circuit “megging.” Applied hydraulics, useful in identifying and resolving unit malfunctions, as well as methods of maximizing unit efficiency and evaluating symptomatic bearing “failures,” provide tools for equipment failure reduction.

SBR Process Optimization (12 contact hours)

The Sequential Batch Reactor (SBR) process depends upon the same treatment steps as a conventional activated sludge process; but utilizes a batch tank and sequences its environmental stages through physical and mechanical variations. Although physically restrictive, this allows a unique flexibility for process optimization, nutrient removals, biological and physical optimization pressures and adaptations. This course will explore these and thereby facilitate the proactive evaluation and control of plant specific conditions.

Trenching “Competent Person” Training Workshop (8 contact hours) *Basic*

This training covers the OSHA Trenching & Excavation Safety Regulations. Topics include an overview of current standards, sloping requirements and/or options, use of tabulated data, requirements for protective systems, soil classification and hazardous atmosphere.

Water & Wastewater Facility & Lab Safety (6 contact hours)

Promoting safety not only enhances staff “Quality of Life” and minimizes personal discomfort, but has been proven to improve the productivity and general unity of the organization. These reflect the goals of this overview of safety concerns, proactive accident prevention, relative laws, and information sources.