

Workshops for Water and Wastewater Personnel—2010

Introduction to Process Control

ETEM 2516.1

5.25 contact hours

January 15

9:00 a.m.—3:00 p.m.

OEPA-B430108-OM

DW & WW

Automatic control loops are used for all types of chemical feed and flow control systems. Treatment facility operators and engineers must have a thorough understanding of automatic control and be able to trouble shoot the systems in order to control the various processes within the facility. Upon completion of the course, students shall be able to: (a) identify the components of an automatic control loop, (b) describe the functions of each component in an automatic control loop, (c) identify where and what type of control loop can be used, (d) identify the components and functions of an automated manufacturing cell, (e) enter basic control programs.

Discrete Static Process Control

ETEM 2516.4

5.25 contact hours

February 19

9:00 a.m.—3:00 p.m.

OEPA-B340117-OM

DW & WW

Discrete state (on-off) control is widely used in pump control systems. A thorough understanding of the relay control logic for such systems is a must for treatment facility operators and engineers. Upon completion of the course, students shall be able to: (a) describe the function of discrete state (on-off) control, (b) set up and calibrate a discrete state control loop, (c) calculate the component needs for a discrete state control loop, (d) program a PLC for a discrete state control loop.

PLC

ETEM 2516.5

5.25 contact hours

March 19

9:00 a.m.—3:00 p.m.

OEPA-B430111-X

DW & WW

Modern treatment facilities incorporate a wide use of PLC's for discrete state control systems. Operators need to know how to install, troubleshoot, and program such systems. This course is designed to teach students how to design a semi complex PLC control program, connect the PLC to real world applications, and to troubleshoot the system. Timing requirements for the PLC control system will also be covered.

Waste Water Math Review

EDEV 9991.1

6 contact hours

April 16

9:00 a.m.—4:00 p.m.

OEPA-S430099-OM

WW

Solve mathematical problems associated with the operation and design of waste water treatment facilities. Course topics include: detention time, flow rate, removal efficiency, hydraulic loading, SVI, BOD loading and removal, sludge age, sample volumes, chlorine demand, dose, and feed rates, D.O. saturation, pump capacity, digestion time, sludge application rates, oxygen uptake rates, motor HP, tank size & volumes. Class includes a 1-hour practice exam.

**Weather
make up
(If Needed)
May 21**

Meet your instructor... **Ken Warfield**: Associate Professor of Electromechanical Engineering Technology at Shawnee State University. Mr. Warfield has more than twenty years of teaching experience and over ten years of industrial experience in electrical, mechanical, water & wastewater fields. He is experienced in the operations, maintenance, and management of EPA governed treatment facilities. He designed the SSU environmental Engineering Technology degree program. kwarfield@shawnee.edu

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Registration and Payment

University Outreach Services is open for business Monday through Friday 8:00 a.m. – 5:00 p.m. For your convenience, we offer several ways to register for courses:

In Person: You may bring your completed registration form and cash, check, money order, or credit card information to: Massie Hall, Room B-52 Easy access from rear entrance of Massie Hall, basement level. Outreach Services is the first office on the left as you enter the building. Visitor parking is available just outside the entrance of the building.

By Telephone: You may call **740.351.3274** or toll free **866.672.8778** and register using a credit card payment.

By Mail: You may mail your completed registration form with payment to the address listed below.

By Fax: You may fax your completed registration form to **740.351.3598**

Course fee: The course fee is **\$100.00** per course. **Register for two or more courses for \$85 each!**

Method of Payment: Cash Check Make checks payable to Shawnee State University, 940 Second Street, Portsmouth, OH 45662. If your employer is paying for this course(s), we will bill from the company information below.

Credit Card _____ / _____ \$ _____
Account Number Security Code Card expiration date Amount to be paid

Course Registration

Personal Identification Number _____ Birth date _____

Last Name _____ First Name _____ MI _____ Former Name _____

Home Address _____

City _____ State _____ Zip Code _____ County _____

Home/Evening/Cell Phone _____

Company/Organization Name _____

Company/Organization Street Address _____

City _____ State _____ Zip Code _____ County _____

Work/ Daytime Phone Number _____ E-mail Address _____

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|---|---------------------------|--|------------------|
| <input type="checkbox"/> Introduction to Process Control
Friday January 15, 2010 | ETEM 2516.1
9-3 | OEPA-B430108-OM
lunch 12-1, provided | DW&WW |
| <input type="checkbox"/> Discrete Static Process Control
Friday February 19, 2010 | ETEM 2516.4
9-3 | OEPA-B340117-OM
lunch 12-1, provided | DW&WW |
| <input type="checkbox"/> PLC
Friday March 19, 2010 | ETEM 2516.5
9-3 | OEPA-B430111-X
lunch 12-1, provided | DW&WW |
| <input type="checkbox"/> Waste Water Math Review
Friday April 16, 2010 | ETEV 9991.1
9-4 | OEPA-S430099-OM
lunch 12-1, provided | WW |