

Announcing Two Specialized Three-Day Short Courses

on

1. *Water Treatment Plants: Theory and Design* May 17 - 19, 2010

2. *Wastewater Treatment Plants: Theory and Design* May 20 - 22, 2010

Department of Civil Engineering
The University of Texas at Arlington



LOCATION

U T Arlington Campus
Social Work Complex
Room 105 GACB
(General Academic & Classroom Building)
211 South Cooper Street
Arlington, Texas

Web Links

<http://www.uta.edu/ce/shortcourseENV/>
<http://www.uta.edu/ce/>

Water Treatment Plants: Theory and Design May 17 - 19, 2010

Wastewater Treatment Plants: Theory and Design, May 20 - 22, 2010

Objectives

The design of **water** and **wastewater** treatment facilities requires careful planning, clear understanding of legal implications, future expansion considerations, and operation and maintenance requirements. The objectives of these short courses are to present recent developments in the design of municipal **water** and **wastewater** treatment facilities. Current and future trends, recently promulgated regulatory changes, and procedures for planning, design and operation, and security vulnerability assessment of **water** and **wastewater** treatment plants are discussed.

Who Should Attend

Consulting design engineers, practitioners, and planners
Officials of regulatory agencies
Municipal and county water authorities, and state engineers and professionals
Treatment plant managers

Prerequisites

B.S. degree in engineering or sciences is desirable. Understanding of water and wastewater treatment processes is essential.

Course Material

For *Water Treatment Plants: Theory and Design* course, a set of specially prepared notes, and a copy of the textbook, *Water Works Engineering: Planning, Design and Operation* by Syed R. Qasim, Edward M. Motley, and Guang Zhu will be provided. This book is published by Prentice Hall PTR, Upper Saddle River, New Jersey, 2000.

For *Wastewater Treatment Plants: Theory and Design* course, a set of specially prepared notes, and a copy of the textbook, *Wastewater Treatment Plants: Planning, Design and Operation*, 2nd Edition by Syed R. Qasim will be provided. The second edition of this book is published by CRC Press, Boca Raton, Florida, 1999.

Registration Fees

Each course: \$730 per person on or before April 16, 2010.

Late registration fee is an additional \$40. The registration fee entitles each participant to a set of course notes and textbook, lunches, and morning and afternoon coffee.

Special Discount Rates

- (1) If you bring your own copy of the textbook, the registration fee is reduced by \$90 for the course you registered.
 - (2) Discount of \$80 per person for attending both courses.
 - (3) Discount of \$40 per person if an organization sends two or more participants.
 - (4) An attendee eligible for discount (2) will not also receive discount (3).
- Please indicate on the registration form the discount you are requesting. In the event of insufficient registrants, a full refund will be made if the course is cancelled. Course schedule is subject to change.*

Method of Instruction

The course information will be presented via lectures, films, class discussions, question/answer sessions, case studies, and summary/reviews. Videos of many laboratory experiments will be integrated into the lectures and design. Exchange of information and experiences by the participants will be encouraged. **First two days, the program will begin at 8:30 am, and will end at 5:30 pm. On the third day, the program will begin at 8:30 am and end at 1:45 pm.**

Professional Development Hours (PDH)

Each course has a total of 19 classroom contact hours. These hours are applicable towards PDH for PE license renewal in Texas. Ethics hours are not included.

Instructors

SYED R. QASIM, Ph.D., P.E., Professor Emeritus, Civil Engineering, The University of Texas at Arlington. He has over 45 years of teaching, research, and design experience. His areas of expertise are environmental engineering with emphasis in water and wastewater treatment processes and plant design. He has written four books, and published over 100 technical papers and reports, and presented short courses in several countries.

WALTER W. CHIANG, P.E., Chairman of the Board, Chiang, Patel & Yerby Inc. He has over 36 years of experience in planning, design, construction and operation of water and wastewater treatment facilities. He has served as an adjunct professor at The University of Texas at Arlington, and has published one book and numerous technical papers and reports.

MICHAEL G. MORRISON, P.E., DEE, Vice President and Manager of Water and Wastewater Engineering, Freese and Nichols, Inc. He has over 38 years of practicing design experience in both water and wastewater engineering. He has authored numerous related papers in his field and is a contributing author to a national textbook. He is an instructor at The University of Texas at Arlington's Professional Engineering Examination Review courses.

EDWARD M. MOTLEY, P.E., Vice President, CH2M Hill, Inc. He has over 35 years of consulting experience in planning, design, and construction of water, wastewater treatment, and conveyance projects. He has coauthored one book.

GUANG ZHU Ph.D., P.E., Associate, Chiang, Patel and Yerby, Inc. He has over 15 years of consulting experience with Beijing Municipal Engineering Design and Research Institute, Beijing, China, and is the author of many technical papers in environmental engineering. He has coauthored one book and translated two wastewater books into Chinese.

BETTY L. JORDAN, P.E., Manager of Technology, Alan Plummer Associates. She has over 30 years of consulting experience in the planning and process design of water and wastewater treatment facilities. She is a frequent presenter at technical conferences and seminars, and has served as a guest lecturer at The University of Texas at Arlington.

Proposed Course Outlines

Water Treatment Plants: Theory and Design, May 17 - 19, 2010

Day 1 - 8:30 am to 5:30 pm

Morning

General overview of water treatment theory and design. Basic design considerations. Engineering study and predesign report. Water treatment processes and process train. Basic chemistry. Water quality criteria.

Afternoon

Raw water intake. Pumping. Raw water transport. Theory of water treatment processes. Aeration. Mixing. Precipitation. Coagulation - flocculation.

Laboratory Demonstration Videos

Conventional coagulation/flocculation, and microsand ballasted enhanced flocculation. Summary of Day 1.

Day 2 - 8:30 am to 5:30 pm

Morning

Sedimentation basins (types, configuration, design considerations). Theory of filtration. Types of filters. Filter design. Backwash system. Equipment and controls.

Afternoon

Taste and odor control. Carbon adsorption (PAC and GAC). Disinfection, and control of disinfection by-products. Alternate disinfectants. Clear well storage. Water stability. Residuals management. Plant layout and hydraulics. Assessment and upgrading physical and operational security of water system.

Laboratory Demonstration Videos

Dye tracer study and gravity filtration. Membrane filtration. Summary of Day 2.

Day 3 - 8:30 am to 1:45 pm

Morning

Non-conventional water treatment processes. Distribution system design considerations. Service reservoirs. Emergency storage. Process control and instrumentation. System operation, maintenance, and economics.

Laboratory Demonstration Videos

Membrane technology, and presentation of arsenic poisoning. Course summary.

Collection of Certificate of Attendance

Wastewater Treatment Plants: Theory and Design, May 20 - 22, 2010

Day 1 - 8:30 am to 5:30 pm

Morning

General overview of wastewater treatment theory and design. Basic design considerations (service area, wastewater characteristics, regulatory constraints, degree of treatment, process selection, environmental considerations). Facility planning. Cost effectiveness analysis and treatment process trains.

Afternoon

Theory and design of screens. Flow measurement. Grit removal. Primary sedimentation. Pumping. Equipment selection and design. Flow measurement.

Laboratory Demonstration Videos

Wastewater characteristics, dye tracer and short circuiting, and flocculant settling. Summary Day 1.

Day 2 - 8:30 am to 5:30 pm

Morning

Biological waste treatment theory and design. Aerobic, anaerobic, and anoxic, and suspended and attached growth systems. Oxygen transfer. Process modifications and application. Nitrification–denitrification. Biological phosphorus removal.

Afternoon

Attached growth reactors. Anaerobic treatment processes. Solids separation and clarifier design. Disinfection and alternate disinfectants. Effluent reuse and disposal. Sludge processing, stabilization, dewatering, and disposal. Assessment and upgrading physical and operational security of wastewater system.

Laboratory Demonstration Videos

Oxygen uptake rate, treatability studies using batch reactor, and activated sludge and BNR systems. Summary of Day 2.

Day 3 - 8:30 am to 1:45 pm

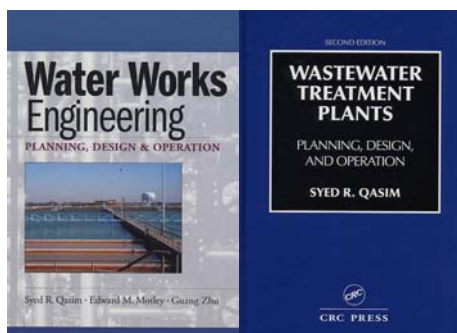
Morning

Advanced wastewater treatment and plant upgrading. Plant layout and hydraulics. Foundation design and soil-structure interaction. Instrumentation. Plant operation and maintenance. Economics.

Laboratory Demonstration Videos

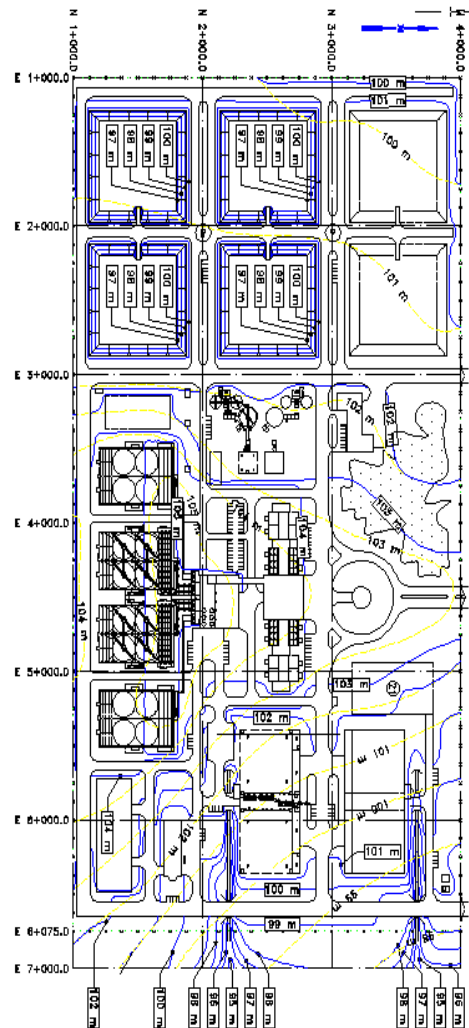
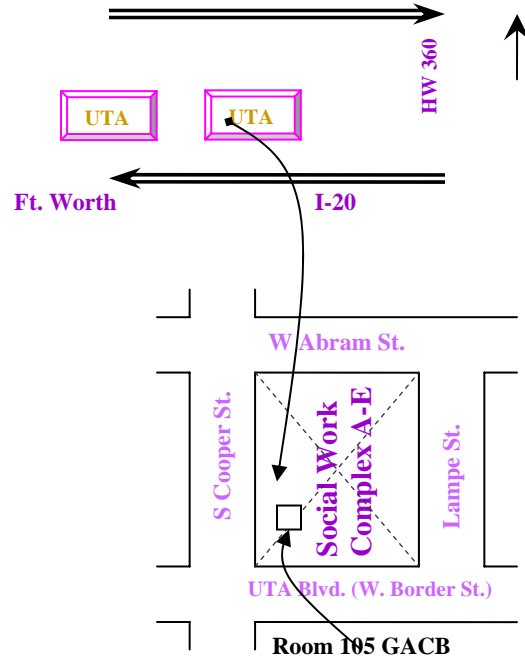
Coliform count, and membrane bioreactor. Course summary.

Collection of Certificate of Attendance



The University of Texas at Arlington

The University is conveniently located in the heart of the Dallas/Fort Worth Metroplex. Classes will be conducted in Room 105 GACB, (General Academic and Classroom Building)



For more information:

If you would like more information about these short courses, please contact:

Dr. Syed Qasim

Ph 817/272-2665, Email: qasim@uta.edu, or

Judy Morris

Ph 817/ 272-5055, Email: jamorris@uta.edu

Non-Profit Org
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REGISTRATION FORM

(Complete one copy of form for each registrant)

Name: _____
First Middle initial

Last
Agency/Company: _____

Address: _____

City State Zip

Telephone: _____ Fax: _____
Email: _____

Course Enrollment and Discounts

Water Treatment Plants: Theory and Design

May 17-19, 2010 ()

Will you bring textbook? Yes [] No []

Wastewater Treatment Plants: Theory and Design

May 20-22, 2010 ()

Will you bring textbook? Yes [] No []

- (1) If you bring your own copy of the textbook, your discount is \$90
- (2) If you are attending both courses, your total discount is \$80
- (3) If more than one person is attending the short courses from your organization, your discount is \$40 (Print the name of the other person from your organization: _____)
- (4) An attendee eligible for discount (2) will not also receive discount (3) (see Special Discount Rates)

Payment:

Enclosed payment is to cover total registration fee per person after all discounts.

Amount \$ _____

Make check payable to:

Environmental Engineering Short Course

Mail completed Registration Form and check to:

Civil Engineering Department

Attention: Judy Morris

Box 19308, 416 Yates Street

The University of Texas at Arlington

Arlington, TX 76019-0308

If you make wire transfer to The University of Texas at Arlington, please indicate "Invoice #0510WW" on the paperwork.

Confirmation letter, parking and other information will be provided upon receipt of completed registration form and check.

Block of rooms for attendees has been reserved at special rates at Wingate Inn in Arlington, TX-Phone 817/640-8686.

Free morning and evening shuttle service is provided from Wingate Inn.

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Arlington, TX 76019-0308

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