

RUTGERS

New Jersey Agricultural
Experiment Station



**Pond Design,
Management and
Maintenance**

May 1, 2008

**Hydrology
of Wetlands**

May 6, 2008

Stream Restoration

June 24 - 26, 2008

Office of Continuing
Professional Education

Pond Design, Management and Maintenance May 1, 2008 (EW0315CA08)

\$285 before 4/17/08; \$295 after; \$275 multiple

This one-day class will help you properly design, maintain and manage your pond to minimize water quality problems while maximizing aesthetics and function.

Building a proper pond includes consideration for recommended water depths, volume and flushing relationships; shoreline shape; integration of aquascaping benches and optimal design of outlet structures.

Featured Topics

- Design and implementation of dredging projects
- Collection and interpretation of bathymetric survey data
- Preparation of bid specifications
- Selection of qualified contractors
- Review of environmental permitting and regulatory issues
- Testing dredge sediments
- Sample analysis
- Applications of aerator selection, sizing and installation
- Placement and determination of fountains, submerged aerators and horizontal circulators

Learn about combinations of landscaping and engineering solutions for eroded shorelines - often called aquascaping or bioengineering.

You will also discuss creating a vegetated shoreline edges using native, non-problematic species, creating fish habitat; stabilizing undercut shorelines, buffer creation for nutrient and pollutant removal, vegetative goose control strategies and enhancement of the aesthetics of the pond's edge using easy to maintain plantings.

Faculty Coordinator

**Dr. Stephen Souza, *President*
Princeton Hydro, LLC**

Hydrology of Wetlands May 6, 2008 (EH0302CA08)

\$285 before 4/22/08; \$295 after; \$275 multiple

How important is learning hydrology? **Who ever heard of a dry wetland!**

By understanding the hydrology, you will understand the distribution and circulation of water in a wetland. If you are planning to delineate, manage, or construct a wetland, you will need to be able to identify and calculate the movement of water through the wetland.

This introductory one-day course combines both classroom instruction as well as hands-on field visitation to provide you with a basic understanding of how wetlands are created and sustained. In the morning, you will review the connection between soil, water and vegetation which creates a wetland. After lunch, gain practical experience using a soil auger to investigate hydrologic evidence for wetland delineation, water table depth and evaluation and Hydrogeomorphic Models (HGM's) identification.

Featured Topics

- Saturated conditions
- Geochemical nature of wetlands
- Wetlands soils and vegetation
- Wetland aeration zone
- Texture of muck soils
- Surface runoff accumulation
- Ponded and perched wetlands
- Ground water discharge
- Unconfined ground water discharge
- Confined (artesian) ground water discharge
- Hydrogeomorphic Models (HGMs)
- Field evidence for HGM-type diagnosis

Faculty Coordinator
Dr. Claude Epstein, Professor
Richard Stockton College

Stream Restoration

June 24 - 26, 2008 (AL1101CA08)

\$775 before 6/10/08; \$795 after; \$755 multiple

This course is designed to provide a solid foundation of knowledge in the science of applied fluvial geomorphology that practitioners can build upon as they seek to better understand natural channel stability and the variables determining river form. Participants will explore the application of essential tools that provide a means to interpret existing conditions, predict future behavior, and determine potential for restoration. Since effective application of these tools requires persistent field observations and measurements, participants will spend ample time in the field applying the concepts and principles discussed in the classroom.

Featured Topics

- Stream flow and impacts of storms and flooding
- Stream dynamics, morphology and classification
- Streambank stabilization, an ecological approach
- Site evaluation
- Data collection
- Developing design criteria
- Project site visits

The program will cover all aspects of stream restoration from performing site assessments, developing self sustaining design alternatives and preparing plans and specifications for construction to providing construction oversight and performing post construction monitoring and maintenance. A field day will provide participants with instruction on performing morphological measurements, which are crucial to accurate site assessment and developing viable restoration solutions. Expert instructors will also discuss the applications and limitations of various geotextiles, plant materials and soil bioengineering techniques commonly used in stream restoration projects.

Faculty Coordinators

Christopher Miller, *Plant Materials Specialist*, USDA
Dr. Claude Epstein, *Professor*, Richard Stockton College

Other Courses of Interest

Keying out Wetland Plants

May 28, 2008 (EH0203CA08)

\$285 before 5/14/08; \$295 after; \$275 multiple

Required Textbook: *Field Guide to Nontidal Wetland Identification* - \$45

Ralph Tiner provides an introduction to diagnostic plant characteristics and their use in dichotomous keys for wetland plant identification. Your textbook includes over 250 wetland plants – the most common aquatic bed plants, emergents, shrubs, trees, and vines in Mid-Atlantic wetlands. *This course will not address upland plants.*

Wetland Mitigation Monitoring

June 11, 2008 (EH0104CA08)

\$245 before 5/28/08; \$275 after; \$225 multiple

Monitoring the progress of a wetland restoration project can be time consuming and expensive. You need to recognize subtle indicators of project deterioration but also be familiar with forms, record-keeping and applicable state regulations. From designing wetland monitoring studies to evaluating the success of wetland mitigation, restoration, creation and enhancement projects. You will become familiar with the forms used to collect and record essential data.

Registration Information

Online: www.cpe.rutgers.edu

Via Phone: (732) 932-9271

Via Fax: (732) 932-8726

By Mail: NJAES - Office of Continuing Professional Education; Rutgers University; 102 Ryders Lane; New Brunswick, NJ 08901

Breakfast and lunch are included in your registration fee.

Registrants may withdraw from the course with a full refund minus a processing fee provided our office is notified at least 3 business days prior to the course start. Beyond that time, registrants may be responsible for the full registration fee.

Substitutions are permitted.

NIAES Office of Continuing Professional Education
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Ph: (732) 932-9271 • Fax: (732) 932-8726 • Email: ocpe@njaes.rutgers.edu

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