Soils and Site Evaluation for Septic Disposal Systems and Stormwater BMPs

October 3, 4 and 5, 2011

$695 before 9/19; $725 after  

Multi: $645

Course Code: ES0301CA12

Thousands of septic systems and stormwater basins malfunction for the same reason: failure to understand how water moves (or doesn't move!) through soil. You cannot hope to design and build these structures without a down-and-dirty understanding of these soils. That's what this hands-on course is all about.

Every day, you will spend equal time moving between lectures in the classroom and soil pits in the field, evaluating soils using your eyes, hands, and nose. You will observe, record and evaluate the site-specific soil characteristics required to write and support a complete soil log, as well as evaluate the soil and landscape data to determine design input. Most importantly, you will develop the necessary tools to determine whether a site is right – legally and practically -- for a septic system or stormwater runoff Best Management Practices (BMP) facility.

Day one and day two will be held on campus in New Brunswick, with day three off-campus in the field. No matter the location, be prepared to leave with mud on your boots!

In just three days, you will learn:

• Soils fundamentals for successful septic system design and installation, stormwater BMP design, and other applications, such as wetland design and soil remediation;
• Necessary components for estimating seasonal high water table; and,
• How to be more efficient (and effective!) in choosing where to test and site BMPs and septics.

***NEW for 2011***

Why Basins Fail

Know what to look for, and how to avoid some common causes of failure on your next project!

Proposed changes to NJDEP septic regulations will also be discussed!

Additional Featured Topics:

• Soil Physical Properties: Soil Texture and the Textural Triangle
• Determining Soil Texture by FEEL
• Soils and Geology of New Jersey
• New Jersey Regulatory Requirements for Site Evaluation
• Inner Workings of Stormwater Best Management Practices (BMPs)
• County Soil Survey Reports and Web Soil Survey
• Soil Physical Properties; Soil Structure and Color
• Permeability Testing; Where and How
• Why Soil Morphology Matters: Septic Effluent
• Soil Suitability and Safety in the Pits
• Unique Local Soil Formations of New Jersey
• Identification: What Works and What Doesn’t
• Field Determination of Mottling (Redoximorphic Features)
• Horizon Nomenclature/Restrictive Horizons
• Tips for Writing and Reviewing Soil Logs

Soil fundamentals for successful septic system design and installation, stormwater BMP design, and other applications, such as wetland design and soil remediation; Necessary components for estimating seasonal high water table; and, How to be more efficient (and effective!) in choosing where to test and site BMPs and septics.
Both stormwater and floodplain management are dynamic fields that are constantly expanding, particularly with regard to their regulations and computational techniques. The NIAES Office of Continuing Professional Education has teamed with Mr. Skupien in New Jersey, to offer two classes that will be of great interest to you.

Mr. Skupien is President of Stormwater Management Consulting, LLC. During his 37-year career, he has participated in the design and construction of hundreds of stormwater facilities. He served as a technical expert for the NJ Department of Environmental Protection during the development of NJ’s new Stormwater Management Rules and Stormwater BMP Manual and authored several of the handbooks and manuals used by these and other programs. Joe regularly instructs stormwater and floodplain management programs for state and local agencies and educational institutions. Register now to benefit from his theoretical knowledge, real-world experience, and excellent teaching skills.

Stormwater Management
October 5, 6 and 7, 2011
Registration Fee: $825 Multi fee: $795
Course Code: EW4041CA12
Managing stormwater runoff is becoming more complex every day. In order to comply with New Jersey’s statewide stormwater management rules, all types of professionals (engineers, planners, developers and others) need to acquire a broader knowledge and new skills. This three-day course is designed to address these needs by presenting the most pertinent and up-to-date information on the scientific and regulatory aspects of stormwater management in New Jersey.

The course will cover content of NJ’s Stormwater Management Rules, including portions dealing with groundwater recharge, Total Suspended Solids (TSS) nutrient removal and stormwater quantity control.

Presentations on NJDEP’s BMP manual, the NJ Groundwater Recharge Spreadsheet (NJGRS) and Nonstructural Strategies Point System (NSPS) will be part of the program, including recent NJDEP updates.

The course concludes with a discussion of stormwater facility maintenance techniques and the steps needed to develop the required maintenance plans.

**Featured Topics**
- New Jersey’s Stormwater Management Rules, including groundwater recharge and stormwater quality requirements;
- The evaluation, selection and design of appropriate stormwater management practices and facilities;
- The design of groundwater recharge facilities using the NJDEP’s Groundwater Recharge Spreadsheet;
- Methodologies to address the NJDEP’s stormwater quality requirements;
- Computation of runoff volumes, rates, and hydrography using NCSCE methodology, including TR-55 and a 4-run event;
- How to incorporate maintenance, safety, and aesthetic considerations into facility design; and,
- The design and evaluation of nonstructural stormwater management measures using the New Jersey Nonstructural Points System (NSPS).

Stormwater Management is approved for 1.8 CEUs, 18 TCHs for New Jersey engineers (including TR-55) and a 4-run model event for New York State Licensed professional engineers. It has also been submitted for New Jersey PE Continuing Professional Competency credits - approval pending.

**HEC-RAS: A Three-Day Hands-On Workshop**
November 30, December 1 and 2, 2011
Registration Fee: $825 Multi fee: $795
Course Code: EW4041CA12
This intensive three-day workshop will provide a comprehensive overview of the steady flow capabilities of the current version (4.1) of the U.S. Army Corps of the Engineers’ Hydrologic Engineering Center River Analysis System program (HEC-RAS).

Day 1 will begin with a review of the program's theoretical basics, modeling capabilities, and limitations, and will continue with an explanation of program and project start-up, data input, and the various forms of output reporting formats. The day concludes with analysis of an example problem that will highlight such modeling decisions as cross section location and alignment, loss coefficient selection, and floodway determination.

Day 2 of the workshop will focus on an overview of the program’s capabilities, data requirements, and limitations for modeling bridge and culvert flow. It will also include a discussion of the various types of flow encountered at bridges and culverts and different modeling approaches available in the program. Also included - analysis of a second example problem that will illustrate bridge and culvert modeling, including further guidance on selecting cross-section locations, loss coefficients, ineffective flow and outlet computational approach.

Day 3 will provide presentations and example problems on computing floodways and flood fringe volumes. The program will also include a workshop review problem and a Q&A session.

**Attendees will learn to:**
- Understand the basic theories of open channel, flow way, bridge, and culvert flow used by HEC-RAS;
- Select appropriate bridge and culvert modeling methods; and,
- Identify input errors and modeling problems to help insure “accurate and reasonable” output.

In addition to the presentations, a workbook and electronic copies of example problems will be provided to all attendees, who are encouraged to bring their own laptop computers (with HEC-RAS 4.1 installed). Answer keys and in-class exercises, as well as handouts on the New Jersey’s stormwater monitoring requirements and methods to address the NJDEP’s stormwater quality requirements.

Refunds - You may withdraw from this course with a full refund (minus a processing fee) if your registered order is not processed or if our office is notified at least three (3) full working days prior to the start of the course. Beyond that time, registrants may be responsible for the full registration fee. Substitutions are welcomed.

**ArcGIS: Introduction**
October 6, 13, 20 & 27, 2011
Test your knowledge of Geographic Information Systems with hands-on GIS software application! Focusing on layout and core functionality, this 12-hour evening course offers all-overviews of ArcGIS components, basic display and map querying functions, metadata browsing and file management, basic analysis techniques, and map layout. Increase your software proficiency with practical, in-class exercises!

**ArcGIS: Editing & Data Development**
November 10 and 17 and December 1 and 8, 2011
If you have completed the ArcGIS: Introduction course or if you are familiar with the tools and basic functions of Arc Map and Arc Catalog, you are qualified to take this course. This course will guide you through real-world editing tasks and data management processes that are vital for intermediate and users to know.

For more information, and to register, visit: www.cpe.rutgers.edu/programs/geomatics

**OTHER COURSES OF INTEREST**

ArcGIS: Introduction  Course Code: EG9114CA12
ArcGIS: Editing & Data Development  Course Code: EG9114CA11

4 CONVENIENT WAYS TO REGISTER
- Phone: 732.932.9271, M-F 8AM - 4:30PM. Please have your Visa, Mastercard or AMEX number ready.
- Fax: 732.932.8726, 24 Hours. Please include credit card information or copy of your check, money order or purchase order with your fax.
- Mail: Registration Dept., NIAES Office of Continuing Professional Education, Rutgers Uni, 102 Ryders Lane, New Brunswick, NJ 08901-4519. Please make check payable to: Rutgers University
- Web: www.cpe.rutgers.edu

Payment Policy - All students must have prearranged for payment to be debited to their Visa, Mastercard or AMEX (in our office only, check, VISA, Mastercard, American Express or money order). Refunds - You may withdraw from this course with a full refund (minus a processing fee) if your registered order is not processed or if our office is notified at least three (3) full working days prior to the start of the course. Beyond that time, registrants may be responsible for the full registration fee. Substitutions are welcomed.