

Agenda

Presented by Gregory H. Nail, Ph.D., P.E.

Applications of Open Channel Hydraulics

- River and watercourse analysis
- Floodplain management
- Flood hazard mapping and risk analysis
- Channel and levee design
- Roadway crossing and bridge analysis and design
- Bridge scour analysis

Principles of Hydraulic Analysis

- Conservation of energy
- Conservation of momentum
- Bernoulli equation
- Energy losses
- Backwater and forewater calculations
- Computer-based analysis and computations

History and Development of

US Army Corps of Engineers HEC-RAS Application

HEC-RAS Application User Interface

- Program file and project management
- Data entry and editing
- GIS data usage
- Results and reporting
- Mapping capabilities

Water Surface Profiling

- Flow types
- Analysis data required for modeling
- Cross section location
- Discharge flows and boundary conditions
- Step backwater calculations
- Model calibration

Bridge and Culvert Modeling

- Cross section locations
- Flow regimes
- Ineffective flow areas
- Bridge model setup

Steady Flow Surface Profile Demonstration 1

- Live demo for typical river reach
- Project file setup
- Geometry file demo
- Steady flow file demo
- Setting boundary conditions
- Simple river reach modeling tips

Steady Flow Surface Profile Demonstration 2

- Live demo for simple bridge
- Setup of typical bridge cross section model
- Establishment of ineffective flow areas
- Simple bridge modeling tips

Introduction to HEC-RAS Modeling
Atlanta, GA - Tuesday, February 12, 2019

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Learning Objectives

You'll be able to:

Explore the many applications of open channel hydraulics, including flood hazard mapping, roadway crossing analysis and bridge design.

Review principles of hydraulic analysis, and explore backwater and forewater calculations.

Understand the history and development of HEC-RAS, and learn how to work with the HEC-RAS user interface.

Learn about bridge and culvert modeling.

Discuss key issues in steady flow water surface profiling.



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Understand the applications of open channel hydraulics, including flood hazard mapping and channel, levee and bridge design

Identify the principles of hydraulic analysis

Review the history and development of US Army Corps HEC-RAS application

Examine the HEC-RAS user interface

Learn about types of flow and the data required for modeling

Explore steady flow water surface profile demonstrations

Continuing Education Credits

**Professional Engineers &
Land Surveyors**
7.0 PDHs

Landscape Architects
7.0 HSW CE Hours
7.0 LA CES HSW PDHs

Floodplain Managers
7.0 ASFPM CECs



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Faculty

Gregory H. Nail, Ph.D., P.E. *Associate Professor, University of Tennessee at Martin*

Dr. Nail is an associate professor in the Engineering Department at the University of Tennessee at Martin where he teaches a variety of courses including Fluid Mechanics, Hydraulics and Hydrology, and Hydraulic and Hydrologic Modeling. He holds a professional engineer’s license based on having passed both the Civil and Mechanical discipline-specific exams. Prior to coming to UT-Martin in 2002 he worked as a research hydraulic engineer for the United States Army Corp of Engineers for 11 years. He is a former member of the Executive Committee of the Tennessee American Water Resources Association, and has lectured on various HEC-RAS modeling topics at the Annual Tennessee Water Resources Symposium, and at other venues. Dr. Nail earned his B.M.E. degree from Auburn University and his M.S. and Ph.D. degrees from Texas A&M University.

Here’s what past attendees had to say about the program and presenter Gregory Nail:

“Very good presentation.” – *Hydrologist*

“Knowledgeable presenter.” – *Civil Engineer/EIT*

“The seminar was great and the presentation and delivery were very good as well.”
– *Civil Engineer*

Seminar Information

Hyatt House/Cobb Galleria 3595 Cumberland Blvd. SE Atlanta, GA 30339 (770) 541-2960	Registration 8:00 - 8:30 am Morning Session 8:30 am - 12:30 pm	Lunch (On your own) 12:30 - 1:30 pm Afternoon Session 1:30 - 5:00 pm
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Tuition

\$279 for individual registration

\$259 for three or more simultaneous registrations.

Included with your registration:

Complimentary continental breakfast and printed seminar manual.

Receive a reduced tuition rate of \$101 by registering to be our on-site coordinator for the day. For availability and job description, please visit www.halfmoonseminars.org.

How to Register

- Visit us online at www.halfmoonseminars.org
- Mail-in or fax the attached form to 715-835-6066
- Call customer service at 715-835-5900

Cancellations: Cancel at least 48 hours before the start of the seminar, and receive a full tuition refund, minus a \$39 service charge for each registrant. Cancellations within 48 hours will receive a credit toward another seminar or the self-study package. You may also send another person to take your place.

Additional Learning

Webinar Series

Fiber-Reinforced Composites

- **Portland Cement and Masonry**
Thurs., Jan. 17, 2019, 11:00 AM - 1:00 PM CST
- **Fiber-Reinforced Composites**
Thurs., Jan. 17, 2019, 1:30 - 3:30 PM CST
- **Fiber-Reinforced Polymer (FRP) Composites Reinforcement**
Fri., Jan. 18, 2019, 11:00 AM - 1:00 PM CST
- **Overview of Sandwich Materials and Structures**
Fri., Jan. 18, 2019, 1:30 - 3:30 PM CST

Pumping and Piping Systems

- **Introduction to Pumps: Operation, Principles and Calculations**
Thurs., Jan. 24, 2019, 12:00 - 2:00 PM CST
- **Design Standards and Codes**
Thurs., Jan. 24, 2019, 2:30 - 3:30 PM CST
- **Piping System Components, Materials and Calculations**
Fri., Jan. 25, 2019, 12:00 - 2:00 PM CST
- **Handling Pump and Piping System Problems**
Fri., Jan. 25, 2019, 2:30 - 3:30 PM CST

Off-Grid Master Class

- **Off-Grid Master Class, Part I**
Wed., Feb. 6, 2019, 11:00 AM -2:15 PM CST
- **Off-Grid Master Class, Part II**
Thurs., Feb. 7, 2019, 11:00 AM -2:15 PM CST

Complying with ADA Standards for Accessible Design

- **Complying with Federal and State Accessibility Requirements**
Thurs., Feb. 7, 2019, 11:00 AM -1:30 PM CST
- **Meeting Requirements in IBC and ADA Standards**
Fri., Feb. 8, 2019, 11:00 AM -1:30 PM CST

For more information and other online learning opportunities visit:
www.halfmoonseminars.org/webinars/

Continuing Education Credit Information

This seminar is open to the public and offers 7.0 PDHs to professional engineers and land surveyors in most states, including Georgia. Educators and courses are not subject to pre-approval in Georgia.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida, Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700), New York (NYSED Sponsor No. 35), North Carolina, and North Dakota.

The Association of State Floodplain Managers has approved this event for 7.0 CECs.

This course offers Georgia landscape architects 7.0 HSW continuing education hours. Educators and courses are not subject to preapproval in Georgia.

The Architecture Continuing Education System has approved this course for 7.0 HSW PDHs.

Attendance will be monitored, and attendance certificates will be available after the seminar for most individuals who complete the entire event. Attendance certificates not available at the seminar will be mailed to participants within fifteen business days.

Can’t Attend? Order the Manual and Audio from the Live Seminar as a Self-Study Package!

An audio recording of this seminar is available for \$289. Allow four weeks from the seminar date for delivery. Please refer to specific state licensing rules or certification requirements to determine if this learning method is eligible for continuing education credit.

Registration

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How to Register		Registrant Information
Online: www.halfmoonseminars.org		Name: _____ Company/Firm: _____ Address: _____ City: _____ State: _____ Zip _____ Occupation: _____ Email: _____ Phone: _____
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Fax: 715-835-6066	Code:	Name: _____ Occupation: _____ Email: _____ Phone: _____
Mail: HalfMoon Education Inc., PO Box 278, Altoona, WI 54720-0278		Name: _____ Occupation: _____ Email: _____ Phone: _____
Complete the entire form. Attach duplicates if necessary.		Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred.
() I need special accommodations. Please contact me.		

Tuition

() **I will be attending the live seminar.** Single Registrant - **\$279.00**. Three or more registrants from the same company registering at the same time - **\$259.00** each.

() **I am not attending.** Please send me the self-study package for **\$289.00**.

☐ Downloadable MP3 Audio/PDF Manual

☐ CD/Manual Package

(Please allow four weeks from seminar date for delivery)

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