

HalfMoon Education Live Continuing Education Webinars

HEC-RAS Modeling Basics

Online - Tuesday, September 13, 2022 | 8:30 am - 5:00 pm CDT

Credits:

Professional Engineers: 7.0 PDHs

Architects: 7.0 HSW CE Hours AIA: 7.0 LU/HSW

Landscape Architects: 7.0 HSW CE Hours

LA CES: 7.0 HSW PDHs

Floodplain Managers: 7.0 ASFPM CECs

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AIA
Continuing
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Provider

Introductions and Exploring Open Channel Hydraulics

Introduction and overview
Exploring open channel hydraulics

Steady One-Dimensional Open Channel Hydraulics Background and Theory

Conservation of energy: steady one-dimensional
Conservation of momentum
Conservation of energy: energy losses
Conservation of energy: computational enhancements
Bernoulli's Equation
Computer-based analysis and computations

HEC-RAS and Water Surface Profiling

Required data and boundary conditions
Backwater and forewater calculations
Bridge and culvert modeling

History and Development of HEC-RAS

Demonstration 1 – Building a HEC-RAS Model without GIS

HEC-RAS user interface
Building a hydraulic model without geo-referenced data
Steady flow computational simulation
Viewing of results
Trapezoidal channel example

Demonstration 2 – GIS Basics

Introduction and overview
Geographic versus projected coordinate systems
Raster versus vector files ArcMap versus ArcCatalog
ArcMap Interface Basics Digital elevation model
Other files

Demonstration 3 – Building a HEC-RAS Model with GIS

RASMapper interface and the projection file
Digital elevation models and geometry creation
Building a hydraulic model with geo-referenced data
Steady flow computational simulation
Display and interpretation of results

Demonstration 4 –

Typical HEC-RAS River Reach and Mixed Flow

Subcritical flow Mixed flow

Demonstration 5 – Typical HEC-RAS Bridge Model

Cross section locations
Expansion and contraction coefficients
Implementing the bridge Steady flow simulation
Viewing and interpreting results

Demonstration 6 – Typical HEC-RAS Culvert Model

Cross section locations Implementing the culvert
Steady flow simulation Viewing and interpreting results

Demonstration 7 – Typical HEC-RAS Encroachment Model

Encroachment methods Steady flow simulation
Viewing and interpreting results

Presented by

Gregory H. Nail, PhD, PE

Associate Professor, University of Tennessee at Martin

Tuition

\$319 for individual registration

\$289 for two or more registrants from the same company at the same time.

Included with your registration: PDF seminar manual.

Credit Information

This webinar is open to the public and is designed to qualify for 7.0 PDHs for professional engineers, 7.0 HSW continuing education hours for licensed architects, and 7.0 HSW continuing education hours for landscape architects in all states that allow this learning method. Please refer to specific state rules to determine eligibility.

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The American Institute of Architects Continuing Education System has approved this course for 7.0 LU/HSW (Sponsor No. J885). Only full participation is reportable to the AIA/CES.

The Landscape Architecture Continuing Education System has approved this course for 7.0 HSW PDHs. Only full participation is reportable to the LA CES.

This webinar has been approved by the Association of State Floodplain Managers for 7.0 CECs for floodplain managers.

Attendance will be monitored, and attendance certificates will be available after the webinar for those who attend the entire course and score a minimum 80% on the quiz that follows the course (multiple attempts allowed).

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