Credit and Webinar Information

Continuing Education Credit Information

Each webinar offers 6.5 PDHs to professional engineers licensed in most states.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida (Provider No. 0004647), Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700), and North Carolina (S-0130). HalfMoon Education is deemed an approved continuing education sponsor for New York engineers via its registration with the American Institute of Architects Continuing Education System (Regulations of the Commissioner §68.14(i)(2)). Other states do not preapprove continuing education providers or courses.

The Association of State Floodplain Managers has approved these courses for 6.5 CECs for floodplain managers.

Completion certificates will be awarded to participants who complete these events, respond to prompts, and earn a passing score (80%) on the quizzes that follow the presentations (multiple attempts allowed).

Webinar Instructions

Each webinar session earns continuing education credit and can be registered for individually. All attendees must log-on through their own email – attendees may not watch together if they wish to earn continuing education credit. HalfMoon Education Inc. must be able to prove attendance if either the attendee or HalfMoon Education Inc. is audited.

Certificates of completion will be available for download and printing upon completion of a follow-up quiz with at least 80% accuracy.

Webinars are presented via **GoToWebinar**, an easy-to-use application that can be run on most systems and tablets. Instructions and login information will be provided in an email sent close to the date of the webinar. ***It is highly recommended that you download, install and test the application before the webinar begins by clicking on the link in the email.***

GoToWebinar system requirements:

Operating System: Windows 7 - 10, Mac OSX Mavericks - macOS Catalina, Linux, Google Chrome OS, Android OS 5 (Lollipop) - Android 9 (Pie), iOS 10 - iOS 12, Windows Phone 8+, Windows 8RT+

Web browser: The two most recent versions of Google Chrome or Mozilla Firefox

Internet connection: Minimum of 1Mbps, Mobile: 3G or better (WiFi Recommended)

Hardware: 2GB of RAM (minimum), 4GB or more of RAM (recommended)

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Live, Interactive Webinars
- Open Channel Hydraulics and Design
- Introduction to HEC-HMS Modeling

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Live, Interactive Webinars

Open Channel Hydraulics and Design
- Tuesday, May 25, 2021 | 8:30 am - 4:30 pm CDT

Introduction to HEC-HMS Modeling
- Thursday, May 27, 2021 | 8:30 am - 3:50 pm CDT

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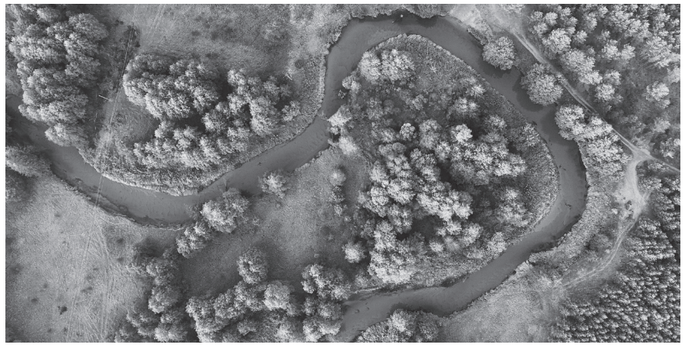
Live, Interactive Webinars



Open Channel Hydraulics and Design
Tuesday, May 25, 2021 | 8:30 am - 4:30 pm CDT

Credits: Professional Engineers: 6.5 PDHs
Floodplain Managers: 6.5 ASFPM CECs

Introduction to HEC-HMS Modeling
Thursday, May 27, 2021 | 8:30 am - 3:50 pm CDT

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Open Channel Hydraulics and Design

Tuesday, May 25, 2021 | 8:30 am - 4:30 pm CDT (incl. a 60-min break)

Tuition: $289 per registrant, $199 per registrant for three or more

Credits: Professional Engineers: 6.5 PDHs
Floodplain Managers: 6.5 ASFPM CECs

Understanding Open Channel Flow
- Basic concepts of open channel flows
- Steady and unsteady flow
- Laminar and turbulent flow
- Gradually varied flow definition
- Continuity principle
- Examples of open channel flow
- Uniform and normal flow
- Reynold's number
- Definitions
- Hydraulic radius
- Energy principle

Design Fundamentals of Open Channel Flow
- Application example of the energy equation
- Channel shapes and properties
- Compound channels
- Critical and normal depth
- Flow regimes of super and subcritical flow
- Conservation of linear momentum
- Manning's Equation for normal depth
- Specific energy diagram
- Calculating Froude number

Flow Resistance in Open Channels
- Flow shear
- When Manning's n is not constant
- Bed forms
- Iterative solution of normal depths using Manning's equation
- HEC-RAS
- Rigid and alluvial (natural) boundaries
- Cowan's equation for additive resistance
- Vegetated surfaces
- Sediment and its effect on resistance

Principles of Open Channel Flow Design
- Classification of water surface profiles
- Upstream and downstream control
- Rapidly varied flow
- Calculating flow depths in open channels (review)
- Floods and storm runoff
- Fluvial geomorphology and channel response
- Synthesis of composite profiles
- Hydraulic jumps

Stable Channel Design
- Example of solving an open channel problem with diverging flows
- Sedimentation, erosion, and deposition
- Hydraulic structures used in open channel flow
- Culverts, flumes, weirs, and gates
- Example of designing a trapezoidal channel
- Channel bank and bed protection
- Principles of open channel design

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Introduction to HEC-HMS Modeling

Thursday, May 27, 2021 | 8:30 am - 3:50 pm CDT (incl. a 30-min break)

Tuition: $289 per registrant, $199 per registrant for three or more

Credits: Professional Engineers: 6.5 PDHs
Floodplain Managers: 6.5 ASFPM CECs

HEC-HMS Program Overview

Basic Hydraulic Principles
- Hydrologic cycle
- Hydrologic modeling methods
- Meteorological data
- Modeling methodology
- Rainfall-runoff
- Tabular hydrographs
- GIS data

Applications of Hydrologic Models and HEC-HMS
- Small scale studies
- Regional flood models
- Stormwater management
- Update earlier modeling

History and Development of the USACOE HEC-HMS Application

HEC-HMS Application User Interface
- Program file and project management
- Data entry and editing
- Results and reporting
- GIS data usage
- Mapping capabilities

Small Scale Watershed Models
- Basic data requirements
- Analysis requirements
- Results interpretation
- Model setup
- Calibration

Demonstration of Small Watershed Model
- Live demonstration of small scale HMS model

Large Scale Watershed Model
- Basic data requirements
- Analysis requirements
- Results interpretation
- Model setup
- Calibration
- Modeling tips

Demonstration of a Larger Watershed Model
- Live demonstration of a larger scale HMS model
- Use of small sub-watersheds
- Reach routing

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Faculty

Open Channel Hydraulics and Design

Dr. William J. Rahmeyer is an emeritus professor of Civil and Environmental Engineering at Utah State University (USU). In 2017, he retired from USU after 33 years with USU and before that, 10 years with Colorado State University. Dr. Rahmeyer has conducted research, published, and taught courses in hydraulics, fluid mechanics, open channel flow, hydraulic structures, and sediment transport for over 40 years. While at USU he served as the department head of Civil and Environmental Engineering and had a joint appointment as the senior professor of the Hydraulics and Fluid Mechanics program of the Utah Water Research Laboratory at USU. He is currently part time with Ayres and Associates where he teaches National Hydraulic Institute workshops in hydraulics and stormwater design to State Department of Transportation agencies. Dr. Rahmeyer is a fellow in the American Society of Civil Engineers. His professional engineering license is in the State of Colorado. He served on committees for the American Society of Engineering Educators (ASEE), the American Society of Civil Engineers (ASCE), the International Association of Hydraulic Research (IAHR), the Association of State Dam Safety Officers (ASDSO), the Instrument Society of America (ISA), the American Water Works Association (AWWA), the International Erosion Control Association (IECA), and the International Committee on Large Dams (ICOLD).

Introduction to HEC-HMS Modeling

Mark D. Jones, P.E. *Principal, Hartech Engineering & Consulting, LLC*
Mr. Jones, P.E. is president of Hartech Engineering which was founded in 2007 as a multi-discipline civil engineering consulting firm providing infrastructure, development and municipal design services for the public and private sectors. Bringing over 30 years of engineering expertise along with specific state-of-the-art, computer-aided technology to achieve efficient, cost saving design solutions, he also provides hydrology and hydraulic studies and reports along with general civil engineering support for prime consultants to PennDOT or local municipality projects. Mr. Jones is a licensed pilot and studied Military Civil Engineering while serving in the USAF and continues his masters education locally through Penn State. Additionally, he is also a registered professional engineer in the states of Pennsylvania, Maryland, Arizona and Georgia.

Additional Learning

Low Impact Development
- Thurs, April 22, 2021|10:00 am - 2:00 pm CDT
- Fri, April 23, 2021|10:00 am - 12:45 pm CDT

2021 International Residential Code: Residential Non-Structural Design
- Fri, April 23, 2020|11:00 am - 3:30 pm CDT

Deep Dive into Water Infiltration in Soil
- Fri, April 23, 2021|11:00 am - 1:00 pm CDT

New Developments in Parking Facilities
- Mon, April 26, 2021|9:30 am - 4:30 pm CDT

Passive House: Planning and Design
- Mon, April 26, 2021|8:30 am - 4:00 pm CDT

Stormwater Basins and Underground Systems
- Mon, April 26, 2021|8:30 am - 4:30 pm CDT

Structural Forensic Engineering
- Tues, April 27, 2021|7:30 am - 4:00 pm CDT

How To Set Goals for and Select Erosion and Sediment Control Practices
- Tues, April 27, 2021|11:00 am - 12:00 pm CDT

Advanced HEC-RAS Modeling
- Wed, April 28, 2021|10:00 am - 1:15 pm CDT
- Thurs, April 29, 2021|10:00 am - 1:15 pm CDT

Construction Cost Estimating
- Wed, April 28, 2021|8:30 am - 4:30 pm CDT

Foundation Damage and Repair: Science, Materials and Techniques
- Thurs, April 29, 2021|9:30 am - 5:00 pm CDT

Structural Dynamics for Seismic Design
- Fri, April 30, 2021|8:30 am - 3:30 pm CDT

Handling Ethical Issues in Government Projects
- Fri, April 30, 2021|12:00 - 1:00 pm CDT

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