

Agenda

Presented by Venkatesh Merwade, PhD

Introduction to HEC-HMS and Applications

- Brief overview of the model and its interface
- Watershed studies
- Stormwater management
- Regional flood models

Hydrologic Principles

- Hydrologic cycle
- Rainfall-runoff modeling
- Loss methods – SCS method
- Transform methods – SCS dimensionless hydrograph
- Routing – muskingum routing

Creating a Simple HEC-HMS Project

- Lumped model creation with single sub-basin
- Understanding different files
- Project file, basin file, meteorology file, control specification file

Data Requirements for Creating a Watershed Model

- Digital elevation model (DEM)
- Land use and soil
- Rainfall and streamflow

Watershed Delineation using Digital Elevation Model (DEM)

- D8 Method for flow direction

Small Watershed Modeling Demonstration

- GIS pre-processing
- Data input
- Results interpretation

HEC-HMS Model Calibration

- Calibration approaches
- Trouble shooting tips

Discussion of New Capabilities in HEC-HMS

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HEC-HMS Modeling Workshop

Live, Interactive Webinar - Friday, September 8, 2023

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Learning Objectives

You'll be able to:

Discuss the use of HEC-HMS software for watershed studies, stormwater management and flood modeling.

Review and apply hydrologic principles.

Learn how to create a simple project in HEC-HMS.

Identify data required to create watershed models.

Participate in a small watershed modeling demonstration.

Explore new capabilities in HEC-HMS.



HalfMoon Education Live Webinars

HEC-HMS Modeling Workshop

Live, Interactive Webinar - Friday, September 8, 2023



Discuss the development of, and applications for, ACOE's HEC-HMS modeling software

Review hydrologic principles that are key to modeling

Learn about creating a simple HEC-HMS project

Get tips on creating a watershed model

Participate in a small watershed modeling demonstration

Get tips on calibrating HEC-HMS models

Continuing Education Credits

Professional Engineers
6.5 PDHs

Landscape Architects
6.5 HSW CE Hours

LA CES
6.5 HSW CE Hours

Professional Geologists
6.5 PDHs*

Floodplain Managers
6.5 ASFPM CECs



Webinar Information

Log into Webinar 8:30 - 9:00 am CDT	Break 12:45 - 1:15 pm CDT
Morning Session 9:00 am - 12:45 pm CDT	Afternoon Session 1:15 - 4:30 pm CDT

Tuition
\$319 for individual registration
\$289 for two or more registrants from the same company at the same time.
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Faculty

Venkatesh Merwade, PhD
Professor in the Lyles School of Civil Engineering at Purdue University
Venkatesh Merwade, PhD, is a professor in the Lyles School of Civil Engineering at Purdue University, where he has been since 2006. During 2004 – 2006, he worked as worked as post-doctoral fellow at the Center for Research in Water Resources at the University of Texas at Austin. Dr. Merwade received his bachelor of engineering in Environmental Engineering from Shivaji University, India, in 1997, his MSc degree in Engineering Hydrology from the National University of Ireland, Galway, Ireland in 2000, and his PhD degree in Civil Engineering from the University of Texas at Austin in 2004. From 1997-1999, he worked as project engineer at Montgomery Watson (now part of Stantec) in Mumbai, India. His research and teaching interests include surface water hydrology with specific focus on flood modeling and mapping. Much of his work has been on improving the simulation of hydrologic processes for flood prediction by using geographic information systems (GIS), data driven techniques and advances in cyberinfrastructure. He has authored more than 80 peer reviewed journal articles and conference proceedings in the area of river channels, watershed hydrology and flood modeling. Some of his awards include the Outstanding Achievement Award (2018) from the Indiana Water Resources Association for work related to flood prediction and mapping for Indiana streams, Excellence in GIS Award (2017) from Indiana Geographic Information Council for Soil-Based Floodplain Maps for Indiana, and the Quentin Martin Best Practice Paper (2011) from the *ASCE Journal of Water Resources Planning and Management*. Dr. Merwade disseminates his educational material as online tutorials, modules and YouTube videos, which have been used/viewed by hundreds of thousands of students, faculty and working professionals around the world for learning hydrology, GIS applications, and hydrologic modeling.

Credit Information

This webinar is open to the public and is designed to qualify for 6.5 PDHs for professional engineers and geologists and 6.5 HSW continuing education hours for licensed architects in most states that allow this learning method. Please refer to specific state rules to determine eligibility.

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 and landscape architects via its course approvals from the Landscape Architecture Continuing Education System (LACES). Many other states do not preapprove continuing education providers or courses.

The Landscape Architecture Continuing Education System has approved this course for 6.5 HSW PDHs. Only full participation is reportable to the LA CES.

This webinar has been approved by the Association of State Floodplain Managers for 6.5 CECs for floodplain managers.

*This webinar may offer up to 6.5 PDHs to licensed geologists in some states. HalfMoon Education has not applied for state geologist continuing education approval in states requiring such.

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6.5 HSW PDHs (LA CES)
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Additional Learning

ANSI A300 Compliance: Planting and Transplanting
- Wednesday, August 2, 2023 | 10:00 am - 12:00 pm CDT

Deep Dive into Pests and Diseases of Trees
- Wednesday, August 2, 2023 | 1:00 - 3:00 pm CDT

Introduction to Groundwater Hydrology
- Tuesday, August 8, 2023 | 9:00 am - 12:15 pm CDT
- Wednesday, August 9, 2023 | 9:00 am - 12:15 pm CDT

How to Design Accessible Parking
- Thursday, August 10, 2023 | 10:00 am - 12:00 pm CDT

Pump Station Design, Construction and Rehabilitation
- Friday, August 11, 2023 | 9:00 am - 4:00 pm CDT

Stormwater Basins and Underground Systems
- Friday, August 11, 2023 | 8:30 am - 4:00 pm CDT

Deep Dive into Water Infiltration in Soil
- Tuesday, August 15, 2023 | 2:00 - 4:00 pm CDT

Basics of HEC-HMS Modeling
- Wednesday, August 16, 2023 | 9:00 am - 1:15 pm CDT

Basics of Structural Steel Design
- Wednesday, August 16, 2023 | 8:30 am - 4:20 pm CDT

Deep Foundations and Excavations
- Thursday, August 17, 2023 | 8:30 am - 5:00 pm CDT

Solar Photovoltaic Covered Parking Facilities
- Thursday, August 17, 2023 | 10:00 am - 12:00 pm CDT

AIA Contract Document Workshop
- Friday, August 18, 2023 | 8:30 am - 4:30 pm CDT

Roadway Drainage Design
- Monday, August 21, 2023 | 9:30 am - 4:30 pm CDT
- Wednesday, August 23, 2023 | 9:30 am - 4:30 pm CDT

Construction Site Grading and Drainage
- Tuesday, August 22, 2023 | 9:00 am - 4:30 pm CDT

Retaining Wall Design and Slope Stabilization Techniques
- Tuesday, August 22, 2023 | 8:30 am - 4:15 pm CDT

Designing Accessible Pedestrian Facilities under ADA, IBC and PROWAG
- Wednesday, August 23, 2023 | 8:30 - 11:45 am CDT
- Thursday, August 24, 2023 | 8:30 am - 12:15 pm CDT

Open Channel Hydraulics and Design
- Friday, August 25, 2023 | 9:00 am - 4:30 pm CDT

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