

HEC-RAS River Hydraulics Modeling – 16.0 Hours (2 Days)

Course Description

Summary

This training course is designed for both beginning and experienced hydraulic engineers who wish to learn how to use the newest version of HEC-RAS to perform river hydraulic modeling. This training course teaches the fundamentals of HEC-RAS hydraulic modeling. Some prior knowledge and experience with HEC-RAS is helpful, but not required.

The primary focus of this training course is to provide “hands-on” experience to the modeler. Participants will learn by doing, while using the HEC-RAS software on their own computers. The lectures and lab sessions will concentrate on demonstrating how to use the software in “real world” engineering applications.

New features contained within HEC-RAS will be highlighted, including its recently added water quality analysis capabilities.

Participants are required to bring their own laptop computer to the workshop, with Microsoft® Excel® installed.

Course Objectives

- Benefit from “hands-on” instruction throughout the course
- Learn practical applications in river hydraulics
- Understand water surface profile modeling with HEC-RAS
- Get acquainted with the full capabilities of features included in the program
- Develop confidence in application of HEC-RAS to a variety of modeling problems
- Gain intensive, hands-on experience in model application
- Learn how to review analysis results and troubleshoot models
- Learn advanced modeling techniques
- Learn to recognize potential problems in a modeling situation
- Hear about “real life” applications

Course Topics

- Perform bridge and culvert design and analysis
- Model multiple bridge and culvert opening roadway crossings
- Analyze and predict bridge abutment and pier scour
- Model both subcritical and supercritical (mixed) flow regimes
- Compute split flows
- Model reservoirs with gated spillways and weirs
- Compare river channel modifications to reduce the impact of flooding
- Introduction to GIS and HEC-RAS integration

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Prerequisites

Some prior knowledge and experience with HEC-RAS is helpful, but not required.

Learning Objectives

1. Participants will be able to construct a complete HEC-RAS model using the exercises provided in the course.
2. Participants will be able to perform bridge and culvert design and analysis using HEC-RAS along with the sample project used in the course.
3. Participants will be able to perform FEMA floodplain encroachment studies using HEC-RAS and the exercises provided in the course.
4. Participants will be able to perform bridge scour analysis using HEC-RAS and the exercises provided in the course.
5. Participants will gain confidence in applying HEC-RAS to a variety of modeling problems from the lectures and exercises provided in the course.
6. Participants will learn how to troubleshoot HEC-RAS models and how to review HEC-RAS models from the lectures and exercises provided in the course.

HEC-RAS RIVER HYDRAULICS MODELING – TWO DAYS	
Overall Course Length	16 Hours
Instructional Time	14 HOURS
PROFESSIONAL DEVELOPMENT HOURS (PDHs)	
New York State Land Surveyors	N/A
New York State Professional Engineers	14.0 PDHs



This course is a registered Continuing Education class with the AIA. Courses taught by CivilTraining, LLC meet continuing education/professional development requirements for Alabama, Delaware Professional Engineers, Georgia, Illinois, Indiana Professional Engineers, Kentucky, Michigan, Missouri, Nevada, New Mexico, Ohio, Pennsylvania, South Carolina, Tennessee Professional Engineers, Texas Professional Engineers, Utah, Virginia, and West Virginia. CivilTraining, LLC is an approved Florida Board of Professional Engineers Continuing Education Provider for Area of Practice courses, an approved provider of Continuing Professional Competency (CPC) requirements for Maryland Professional Engineers and Land Surveyors, approved by the Maryland Boards for Professional Engineers and Land Surveyors, and an approved provider of CPC courses for New Jersey Professional Engineers, approved by the New Jersey State Board of Professional Engineers and Land Surveyors. CivilTraining, LLC, an approved sponsor of continuing education for Professional Engineers and Land Surveyors in New York State, NYS Sponsor #171, has received approval for the above-referenced PDHs for this course. CivilTraining, LLC is an approved sponsor for North Carolina engineers and land surveyors, approved by the North Carolina Board of Examiners for Engineers and Surveyors.

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