Hydraulic Modeling for Stream Restoration 2018 NCSU Stream Restoration

https://www.bae.ncsu.edu/workshops-conferences/rc-302/

This three (3) day workshop will cover applications of hydraulic modeling and its use to support stream restoration design work. Participants will gain experience with targeting and setting up a modeling effort, and the various types of analysis that can be used for improving stream restoration designs. The group will use real-world design examples to perform simulations and visualize results using HEC-RAS software and Microsoft Excel spreadsheets. Participants will need to bring a laptop computer for spreadsheet and modeling applications. Getting the most out of this workshop will require attendees have significant experience in hydraulic processes and stream morphology principles.

Day 1:

8:00 am	Registration
8:30 am	Welcome and Introductions
9:00 am – 10:30 am	Lecture – Stream Restoration Principles and Practice
10:45 am – 11:30 am	Lecture – Hydraulic Modeling for Stream Restoration
11:30 am – 12:00 pm	Lecture - Introduction to HEC-RAS
12:00 pm – 1:00 pm	LUNCH
1:00 pm – 2:00 pm	Exercises 1. and 2. HEC-RAS Tour and My First HEC-RAS Model!
2:00 pm – 3:00 pm	Exercise 3. Existing Stream Conditions Analysis
3:15 pm – 5:00 pm	Exercise 4. Restoration Feasibility Study
5:00 pm	Adjourn

Day 2:

8:30 am – 9:00 am	Review Exercises 1-4
9:00 am – 11:00 am	Exercise 5. Preliminary Design Modeling
11:00 am – 12:00 pm	Exercise 6. Advanced Design Modeling
12:00 pm – 1:00 pm	LUNCH
1:00 pm – 2:00 pm	Exercise 6. Advanced Design Modeling
2:00 pm – 4:00 pm	Exercise 7. Culverts in HEC-RAS
4:00 pm – 5:00 pm	Lecture - HEC-RAS Case Studies
5:00 pm	Adjourn

Day 3:

8:30 am – 9:30 am	Lecture - Sediment Transport Concepts
9:30 am – 11:00 am	Exercise 8. Sediment Competence Analysis
11:00 am – 12:00 pm	Exercise 9. Sediment Transport Capacity
12:00 pm – 1:00 pm	LUNCH
1:00 pm – 2:00 pm	Exercise 10. Introduction to Mobile Bed Modeling
2:00 pm – 3:00 pm	Exercise 11. Sediment Transport Modeling for Restoration
3:15 pm – 4:00 pm	Exercise 12. Sediment Impact Analysis Method
4:00 pm – 5:00 pm	Field Visit and Open Discussion
5:00 pm	Adjourn

This workshop is prepared by:
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