Portland State University

EPP 231 – Principles of Streambank Analysis & Stabilization

Course Summary: This lecture and field course is designed for professionals engaged in stream investigation, management, stabilization and restoration. The course is designed to clearly demonstrate the essential links between research, analysis, design, project implementation, and post-project evaluation. Lectures will introduce the fundamental concepts linking streambank processes and geomorphic adjustments in the fluvial system. Field work will allow students to evaluate and quantify force and resistance mechanisms that control streambank-erosion processes, failure mechanisms, and the importance of basal scour to sustained bank retreat in alluvial channels. Hands-on modeling will provide students with the opportunity to investigate the factors which control bank stability, while also recognizing the significance of these factors when designing mitigation measures. All students will be provided with bank-stability modeling software for future use.

Requirements: Students should have solid algebraic and analytical skills. Experience using Microsoft Excel or similar spreadsheet programs is recommended. A laptop computer is also suggested for running bank-stability software provided during class.

Duration: 3 days.

Topics:

- Bank-stability modeling.
- Field reconnaissance and investigation methodologies.

- Guiding principles for bank stabilization.
- Mechanics of streambank erosion.
- Post-project appraisal approaches.
- Review of fundamental principles behind channel adjustment.
- Role of bank erosion in fluvial adjustment and sediment yields.

Fee: All instruction and program facilitation, resource manual, transportation to/from the field (if applicable), morning coffee/tea; a certificate of completion for this offering is provided.

Available Professional Credit: 2.0 CEU, 20 PDH.