

UC Forest Engineering Professional Development Courses - 2023

7th – 9th February, University of Canterbury, Christchurch

Instructors: Prof. Rien Visser and Dr. Campbell Harvey + guest presenters

Three consecutive 1-day courses are designed to provide up-to-date information in a structured learning environment for people actively engaged in the forest industry. Participants may sign up for 1, 2 or all 3 courses.

Courses (more detail on each course below):

1. Tue: Managing Harvest Residues / Slash
2. Wed: Designing stream crossings, sizing culverts, and improved road construction practices
3. Thu: Working on Steep Slopes with Winch-Assist

Each course starts at 8:30am and finishes approx. 4pm. The cost is \$330 per person per day, or \$900 for three. Cost includes all teaching materials, morning and afternoon tea, as well as lunch. Minimum course number of each day is 12 and capped at 35 for each day. Click on this link to register <https://www.eventbrite.co.nz/e/uc-forest-engineering-professional-development-courses-2023-tickets-472328746997>. Please email rien.visser@canterbury.ac.nz for more information.

Tue 7th Feb: Managing Harvest Residues and Developing Biomass Opportunities

This course provides an overview of the issues around harvest residue (slash) management. It steps through definitions and what we know about the harvest residues that accumulate during operations. Participants will be familiarised with guideline material and shown how to create an effective slash management plan (as required by the NES-PF). It will also highlight biomass market opportunities, quality parameters and supply chain options. A risk management approach, based on hydrological response, will also be taught. Two case studies from around NZ will be presented that highlight how residues can be managed to meet multiple objectives.



Wed 8th Feb: Designing stream crossings, sizing culverts, and improved road construction practices

This course focuses on improved forest road stream crossings and introduces improved design and construction practices for forest roads. Understanding advantages of different stream crossing options, common Best Management Practices (BMPs) for installation, as well as calculating storm flow rates (consistent with NES-PF) for culvert sizing. Specifically, participants will step through culvert sizing using Talbot, Rational and the NIWA Regional Method. The importance of fish passage is covered. Bridge / structure options will also be presented, including indicative costs and construction practices. A case study of stream crossing designs will be presented by industry.



Forest road construction, especially in challenging terrain, requires a detailed design approach as well as consideration of more advanced construction practice. This course will step through the fundamentals of road design, soil properties and geo-technical testing, and construction considerations. RoadEng (computer aided design) will be demonstrated, and examples provided. The course will include two forest road design projects will be presented by industry.

Thu 9th Feb: Working on Steep Slopes with Winch-Assist



This course provides an overview of machine development for operating safely and effectively on steep slopes. It will establish methods for determining operating limits with regard to slope and soil strength, as well as review technical details for operating winch-assist machinery.

Current ACOP guidelines as they relate to steep slope harvesting will be reviewed, and incident reports provided and discussed to learn from past mistakes. Wire rope and end fitting options and inspection

is presented, and the course finishes with a basic winch -assist planning exercise.