Advanced Soil Conservation

Course Outline

The course is offered as 3 separate, but sequential, 5-credit modules and will provide the student with the knowledge and integrated skills to produce a NZ industry-standard, farm-scale, land and water management plan. This plan will correctly identify existing and potential soil and nutrient loss pathways, the causes of these losses, and provide justification for a range of mitigation options.

Controller: Fertilizer and Lime Research Centre (Massey University)

Updated March 2018

Module 1 – Introduction to Nutrient and Sediment Loss, and Mitigation Strategies

Availability: Enrolment will be offered periodically as demand dictates.

Location: Online study with a compulsory one-day field trip in either the North or South Island.

Delivery mode: The module will be delivered through online distance learning. The module system is intended to allow more flexible learning, particularly for employed professionals

Aim: The module will introduce the student to the concepts of land and water management in New Zealand. Students will examine the history of New Zealand soil conservation to understand the drivers and consequences of government policies relating to soil conservation. The course will then acquaint students with systems used to classify landscape units, the different types of soil erosion, and sources of sediment and nutrient loss, and the options available to mitigate these losses. The module closes with a field trip in which observed soil erosion, sediment, nutrient and pathogen loss, and mitigation practices, are discussed in the context of land and water management.

Entry requirements: The module is suited to students or professionals holding a Bachelor's degree, preferably with qualifications in soil science and with an interest in land and water management. There are no formal prerequisites for Module 1.

Workload: Approximately 40 hours of online study and written assessments and 8 hours of compulsory field trip (either North or South Island).

Learning outcomes:

1) Explain the drivers and consequences of historical New Zealand soil conservation practices, and the evolution of land classification in New Zealand.
2) Interpret the Land Use Capability index and the Land Resource Inventory for soil resource management.

3) Identify the key erosion types and sources of sediment, nutrient, and pathogen loss observed on the field trip, describe the consequences of these losses, and the benefits and effectiveness of possible mitigation strategies.

Certification: Successful participants will receive a Massey University 'Certificate of Completion' in Advanced Soil Conservation - Module 1 Introduction to nutrient and sediment loss, and mitigation strategies' and have their achievement and 5 credits added to the academic records at Massey University.

Assessment:

	Assessment type*	**Assessment Title**	**Weighting (%)**	**Link to Learning Outcomes**
1	Written Assessment	Report, Technical: History of soil conservation and evolution and interpretation of Land Use Capability and Land Resource Inventory for soil management	40	1,2
2	Written Assessment	Report, Practical: Field trip- types of soil erosion and sources of sediment, nutrient and pathogen loss and mitigation strategies	60	2, 3

Requirements to successfully complete the paper:

Attend the one-day field trip and achieve an overall minimum of 50% in the assessments.

Credit to other tertiary Qualifications:

The 'Certificate of Completion' is a recognised University achievement. A student may wish to have the work completed on this course credited towards a postgraduate paper in Soil Science offered by Massey University. This can be achieved by enrolling in the appropriate paper and applying for credit to the course controller for the work completed in this short course.
