



SCHOOL OF GEOSCIENCES  
and the  
SCOTTISH AGRICULTURAL COLLEGE

**SOIL PROTECTION AND MANAGEMENT Module - held in SEMESTER I**

*MSc / Diploma Postgraduate Course Module Semester I*

**Overview:**

This course covers the very diverse, interesting and advancing topic of soil protection and management. We begin with a basic introduction to the properties of soil that have a bearing on the subsequent issues covered in the course. These are soil biological, physical and chemical properties that are required to undertake evaluation of soil and land quality. The course subsequently covers in more detail the maintenance and improvement of various aspects of soil quality, such as; fertility, structure, physical condition and biological activity. Management techniques that prevent land degradation, contamination, salinisation, erosion and promote restoration are considered.

The course is designed to be of interest to students who are concerned with protecting land resources from inappropriate use, maintaining and improving current land uses, and the restoration of soil resources through sustainable management practices.

Delivery is mainly through a series of class participatory lectures with a field and laboratory component.

**Course co-ordinator:**

Oliver Knox, Crop and Soil Systems Group, SAC  
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**Assessments:**

The course comprises of a 50% class assessment and 50% examination mark.

The course assessment is made on a submitted Abstract, presentation (12.5% of final mark) and an essay (37.5% of final mark).

The closed book exam requires the answering of one long essay (from a choice of three) and five short questions (from a choice of eight), which combine to provide the remaining 50% of the course mark.

**Reading list:**

The following are some of the recommended reading for the course.

Brady, The nature and properties of soils

Carter, M.R. (2002) *Soil quality for sustainable land management:*

*Organic matter and aggregation interactions that maintain soil functions.* Agronomy Journal 94, pps 38 - 47.

SEPA 2002 The state of the environment; Soil quality report. [www.sepa.org.uk](http://www.sepa.org.uk)

Jordan, C.F. (1985): Nutrient cycling in tropical forest ecosystems - principles and their application in management and conservation. Wiley, NY

Lal, R (1995): Sustainable management of soil resources in the humid tropics, United Nations University Press

T.J. Marshall, J.W. Holmes, C.W. Rose.. Soil physics. 3rd Edition. Cambridge ; New York : Cambridge University Press, 1996.