

Soil Geomorphology and Classifications

Code GIS-833	Credit Hours 3-0
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Course Description

1. This course intends to explore fundamentals of soil genesis, characteristics and classifications. Soil is a resource for almost every land use activity.
2. This course also discusses the Soil Information System (SIS), which is a special kind of geo-information system dedicated to the production of, among others, relevant information about soil types, soil properties, soil erosion and land degradation hazards and soil constraints and opportunities for various rural, semi-urban, and urban land uses.

Text Book:

1. Daniels R. B., Hammer R. D., (1992) Soil Geomorphology, John Wiley & Sons, ISBN: 0-471-51153-6

Reference Book:

2. Schaetzl R. J. Anderson S., (2005) Soils : Genesis and Geomorphology, Cambridge University Press, ISBN: 0521812011
3. Hole F.D., McCracken R. J., Southard R.J., and Buol S. W., (1997), Soil Genesis and Classification, Iowa State Press; 4th edition, ISBN: 0813814642

Prerequisites

NIL

Assessment System for Theory

Quizzes	10-15%
Assignments	5-10%
Mid Terms	25-30%
Project	0-10%
ESE	45-50%

Teaching Plan

Week No	Topics	Learning outcomes
1	Introduction	Course Outline, objectives, teaching plan, assessment method, concepts review
2-6	Soil in Context of geomorphology	Stratigraphy Textural Characteristics of Soil Materials Morphology and Composition of Soils Biogeochemical Processes in Soil Formation
7-8	Soil and our Ecosystem	Soil as a Component of the Ecosystem Space and Time in Soil Formation Soil Erosion Soil Fertility

9	MID TERM EXAM	
10-11	Soil Mapping	Modern Soil Classification Systems Characteristics of Soil Mapping Soil Mapping through Remote Sensing
13-17	Soil Information System	Soil Information System Major Soil Types of Pakistan
18	End Semester Exams	