

Course: Soil Conservation

Identification

Code: SOL 847

Credits: 5 (3 hours theory - 2 hours practice)

Level: Master and Doctorate

Professor: Jean P G Minella

System: Annual (II Semester)

Discipline objectives

To provide knowledge of soil degradation mechanisms and soil and water conservation practices.

Syllabus

The course covers the hydrological basis of land degradation by describing the processes and mechanisms of erosion and its controlling factors. Strategies for modeling runoff, erosion, and sediment production at the catchment scale are presented. Finally, techniques for controlling erosion agents and soil and water conservation systems are presented.

Methodology and/or teaching instruments

Theoretical and practical classes (modeling, laboratory, and field experiments).

Forms of evaluation

Written tests and assignments.

Syllabus:

1. Conservation agriculture
2. Hydrological basis of degradation
3. Erosion processes and mechanisms
4. Monitoring and modeling hydrological and erosive processes
5. Conservation systems

Recommended literature

BERTONI, J., LOMBARDI NETO, F. **Conservação do Solo**. Ícone, 1993. 355p.

BLANCO, H; LAL, R. **Principles of Soil Conservation and Management**. Springer, 2008. 601p.

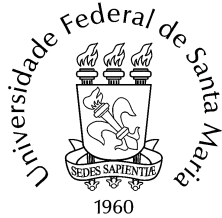
CARY, P. M.; VANCE, G. F, & SIMS, J.T. **Soils and Environmental Quality**. Book News Inc., 2000. 459p.

CARTER, R.M. **Conservation Tillage in Temperate Agroecosystems**. Lewis Publishers Inc., 1994. 390p.

FANGMEIER, D.D.; ELLIOT, W.J.; WORKMAN, S.R.; HUFFMAN, R.L. **Soil and Water Conservation Engineering**, 2005.

HAAN, CT, BARFIELD, B.J, HAYES, J.C (1994). Design hydrology and sedimentology for small catchments. Academic Press.

HUNGER, P. **Soil and Water Conservation HandBook**. Haworth Press, 2006. 233p.



Ministry of Education
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Graduate Program in Soil Science

LAL, R. **Integrated Watershed Management in the Global System.** Soil and Water Conservation Society. Book News Inc., 1999. 416p.

MORGAN, R.P.C. Soil Erosion and Conservation. BlackWell, 2005. 300p.

MORGAN, R.P.C & NEARING, M.A. 2011. Handbook of Erosion Modelling. Willey&Blackwell. 401p.

PIERCE, F. J. & FRYE, W.W. **Advances in Soil & Water Conservation.** Lewis Publishers, 1998.

ROSE, C. (2004) An introduction to the environmental physics of soil water and watersheds. Cambridge.

PRUSKI, F. F. **Conservação de Solo e Agua - Práticas Mecânicas.** 2a.ed. UFV, 2006.

SCHNEPT, M. & COX CRAIG. 2007. Managing Agricultural Landscapes for Environmental quality. SWCS: Ankeny. 196p.

STOCKING, M. & MURNAGHAN, N. (2001) **Handbook for the field assessment of land degradation.** Earthscan. 169p.