**SSL 2204 LAND DEGRADATION (3 CU)**

**Course type** - Core course for BSc. Land Use and Management

**Course Instructor**: Peter Ebanyat (PhD), Department of Agricultural production

**Prerequisites**

SOS 101 Introductory Soil Science

SOS 204 Soil Physics and Chemistry

**Course description**

The course deals with concepts and definitions of land productivity, degradation, sustainability and capability. Types and factors of land degradation- physical, chemical and biological. Indicators of land degradation causes of land degradation. Consequences of land degradation on productivity, resource base and the general environment. Assessment and socio-economic evaluation. Land degradation in Uganda, control and rehabilitation. Study visits to relevant examples in Uganda. It also examines some of the relevant international (e.g. United Nations) and National conventions, frameworks, policies and laws e.g. CBD, CCD, Overview of national strategies to fulfil these conventions/policies.

**COURSE OBJECTIVES**

**General**

To build student’s knowledge and skills in the assessment and management of land degradation

**Specific**

By the end of the course students should;

1. have knowledge and skills for assessment of land degradation
2. know the underlying processes and causes of land degradation
3. have a scientific basis for managing land degradation (i.e. integration of biophysical, socio-economic and institutional factors in intervention)

**Course outline**

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| **Lecture** | **Content** | **Method of Instruction** | **Requirements** |
| 1. Introduction | Background ; Definitions and concepts of land degradation; its relationship with productivity, sustainability and capability , sensitivity and resilience | Lectures, discussion, assignment (2 hrs) | LCD projector |
| 3. Causes of land degradation | Biophysical, socio- economic | Lecture, discussions (3 hrs) | LCD projector |
| 4. Types of land degradation | Physical; chemical and biological and their extent in Uganda | Interactive lectures (3 hrs) |  |
| **5.** Process of land degradation | Physical processes- erosion, compaction densification; chemical process, acidification, salinisation, sodication, nutrient depletion, and biological- decomposition and decay of organic matter | Interactive lectures (6 hrs)  Practical to assess impacts of land management on soil biodiversity- Mabira catchment (6 hrs) | LCD projector  Transport,  Soil augers, chloroform, sample bags |
| 6. Assessment of land degradation | Indicators for assessment- local versus technical indicators, participatory methods and scientific methods | Interactive lectures (3 hrs)  Practicals at MUARIK (3hrs) | LCD projector  Transport,  Field guides for assessment |
| **7.** Restoration/rehabilitation of degraded lands | Approaches and guiding principles; combining socio economic and biophysical status | Interactive lectures (3 hrs)  Field excursion to sites where restoration is undertaken (6 hrs) | LCD projector  Transport |
| 8. Continuous assessment Examination | Continuous Assessment I | Written exam (1 hr) | Paper |
| 9.Impacts of land degradation | Social, economic and environmental aspects | Lecture (3 hr) Laboratory and field practicals impacts of on soil, water quality (6 hrs) | LCD projector  Sampling bags and analar |
| 10. Regulatory frameworks for combating Land degradation | National and International Policy Frameworks; NCCD; CCD, Convention Biodiversity convention; wetlands conservation policy | Lecture (3hrs) | LCD projector  (Invited policy expert from MWE) |
| 11. Field tour | Tour around Kampala to appreciate the land degradation issues | Field tour (4 hours) | Transport  Camera |
| 12. Self study | Group assignment on Land degradation issues identified from field tour | Group work (6) |  |
| 13. Continuous assessment Examination | Continuous assessment II | Written exam (1 hr) | Paper |
| 14. Presentations | Group assignment presentations | Presentations and peer evaluation (3 hrs) | LCD projector |
| 15. Course review | Course review | Discussions | LCD projector |
| **Week 16-17** | Revision for and sitting final Examinations | Self study  Written exams (3 hrs) | As centrally time tabled |

**OVERALL COURSE EVALUATION**

Two CA tests 20%

One group assignment and presentation 20%

Final examination 60%

Total 100%

**REQUIRED TIME**

Lectures – 30Hrs

Practicals – 15 Contact Hrs.

**REFERENCES**

Barrios, E., Bekunda, M., Delve, Esilaba A., and Mowo, J (2001). Identifying and classifying local Indicators of Soil Quality. Methodologies for Decision Making in Natural resource management. CIAT Cali, Columbia

Mugisha, S. 2002. Root Causes of Land Cover/Use Change in Uganda: An Account of the Past 100 Years. Kampala, Uganda: LUCID

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Otsuka, K. 2002. Land Tenure Systems and Their Impacts on Agricultural Investments and Productivity in Uganda. Journal of Development studies, August 2002, vol. 38, no. 6, pp. 105-128(24).

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