**SSL 2103 ENEREGY SOURCES AND LANDUSE**

INSTRUCTORS: Dr. Lukman Nagaya Mulumba; Priscilla Nyadoi (BSc. Forestry MAK; MSc. Forestry, Mak; PhD Forestry Mak

**COURSE TYPE:**

Core for BSc. LUM

**COURSE STRUCTURE:**

Course Credits (CU): 2

Course Duration: 15 weeks, 20 lectures hours and 15 hours practical

**COURSE DESCRIPTION:**

Introduction. Basic energy principles. Energy sources. Availability and affordability of Energy in Uganda. Fuel wood as a major source of Energy in Uganda. Land use in relation to energy sources/uses. Gender issues in Energy use. Energy saving technologies.

**COURSE OBJECTIVES:**

General objective:

To enable students acquire knowledge and appreciate issues on energy resources availability and use, their efficiency and environmental impacts.

Specific objectives:

To enable students appreciate the nature and cause of energy crisis in Uganda and globally and, the energy-environment nexus and be able to identify holistic solutions to ensure sustainability.

**RECOMMEMDED REFERENCES FOR READING**

GAO Report: Greater Energy Efficiency Can Be Achieved Through Land Use

Management” 1981

• <http://archive.gao.gov/d47t13/117095.pdf>

“Energy Conservation & Community Planning.” by Karen Popek Hart. Planning

Commissioner’s Journal #57, Winter 2005

• <http://www.plannersweb.com/wfiles/w200.html>

GAO Report: Greater Energy Efficiency Can Be Achieved Through Land Use

Management” 1981

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“Energy Conservation & Community Planning.” by Karen Popek Hart. Planning

Commissioner’s Journal #57, Winter 2005

• <http://www.plannersweb.com/wfiles/w200.html>

**COURSE CONTENT, METHODS OF INSTRUCTION, TOOLS AND EQUIPMENT**

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| **TOPIC** | **CONTENT** | **METHOD OF INSTRUCTION/Time allocated** | **TOOLS NEEDED** |
| 1. Introduction. Basic Energy Principles | -Definition of terms  -The laws of thermodynamics  -Work  -Heat  -Temperature  -Energy conservation  -Measuring energy  -Forms of energy  -Chemical energy basics | Lectures (3hr) | Chalkboard and chalk |
| 2. Energy Sources | * Availability of Energy Sources * Energy as vital ingredients for growth and development * Energy production and global warming * Energy demand * Non renewable energy sources * Renewable energy sources | Lectures and (2 hr) | Chalkboard and chalk |
| 3. Availability and affordability of energy in Uganda | -Energy poverty  -Global Energy sector in Uganda  -Energy sector in Uganda  -New and Renewable sources of Energy in Uganda  -Challenges of Energy Conservation in Uganda | Lectures (2 hr) | Chalkboard and chalk |
| 4. Fuel wood as a major source of Energy in Uganda | -Wood as a principle source of energy for the poor in most of the developing countries.  -Fuel wood consumption patterns  -Uses of fuel wood  -Why wood fuel is preferred  -Options for meeting energy demand from wood fuels | Lectures (2 hr) | Chalkboard and chalk |
| 5. Land Use in relation to energy sources/use | -Linkage of energy sources and land use  -Environmental concerns of various energy sources | Lectures (2hr) | Chalkboard and chalk |
| 6. Gender issues in Energy Use | -Women as major users of energy in developing countries  -Issues in gender and energy  -Measures to create to create gender sensitive energy policies | Lectures (2hr) | Chalkboard and chalk |
| 7. Energy saving technologies | -Various energy technologies | Lectures (2 hr) | Chalkboard, chalk |
| 8. Field studies, case studies and seminars | -Field sites  -Articles/Book reviews  -Case study presentations | Field visits  Tutorials  Student Centered presentations | Chalkboard, chalk |

**SUMMARY OF TIME NEEDED**

Lectures covering theory 15 hours

Field based practical 30 hours

Course evaluation 3 hours

Overall Course evaluation

Continuous assessment 20%

Field based practical 20%

Final Examination 60%