

Annex 14: Curriculum MSc Agroforestry and Soil Management

Faculty of Agriculture, National University of Rwanda

Course content

1. Agroforestry systems

Tree systems, plantation crop combinations, home gardens, shelterbelts, windbreaks, trees in pasture lands, hedgerow intercropping, improved fallow, fodder trees, legumes, tree-crop interaction, competition, fruit trees, agro-biodiversity

2. Erosion and soil and water conservation

Soil and water conservation, soil conservation measures, conservation tillage, water use efficiency, erosion processes

3. Crop and livestock production in agroforestry

Fodder crops, nutritional values, manure quality cattle, goats, fish, bees, competition between components, biodiversity

4. Site and system characterization

Climate analysis, soil inventory and classification, soil sampling and analysis, site selection criteria, rapid area appraisal, transect sampling, GIS, land use analysis

5. Soil fertility and biology

Soil chemical and biological and physical properties, nutrient budgets and cycling, inorganic and organic fertilisers, composting, crop residue management, fertiliser use efficiency, legumes and green manuring, nutrient-water interaction, soil organic matter

6. Multiple-purpose tree management

Use of multi-purpose trees, tree selection and propagation, introducing new species, wood quality and caloric values, carbon sequestration, trees for land rehabilitation, rooting pattern and properties

7. Socio-economics and impact assessment

Cost-benefit analysis, household characterization, interview techniques, prices and discount rates, markets, adoption strategies

8. Biometrics and data analysis

Statistics, software, presentation of data, tables and graphs, interpretation

9. Research methodology

Experimental design, measuring techniques, plant sampling and analysis, project planning and monitoring, finances and budgets, on-farm and on-station research, participatory approaches

10. Thesis proposal writing

Problem analysis, literature retrieval and review, research planning, communication

11. Integrated watershed management

Scale issues, recommendation domains, GIS, modelling, remote sensing, hydrology, on-side and off-side effects, land use planning

12. Extension methods and marketing,

Prices and markets inputs and outputs, imperfect markets, transaction costs, institutional arrangements

13. Agroforestry and sustainable rural development

Rural development, best practices, poverty alleviation, empowerment, land use systems, long term impact, development scenarios, trade-offs

Course time schedule		course	Teaching teams		
Week number	Dates		NUR	WUR	Extern
40	03 October 2005	Agroforestry systems	Dr. Sara N.	Prof. K. Giller	Dr. Bashir Jama (Icraf)
41					
42					
43				Exam	
44	31 October 2005	Soil and water conservation	Dr. Naramabuye	Prof. Stroosnijder	Dr. Gachene (Anafe)
45					
46					
47				Exam	
48	28 November 2005	Crop and livestock production in agroforestry	Dr. Mulinda V.	Prof. van Keulen	Dr. Keadire M. (Anafe)
49			Dr. Rukazambuga		Prof. Shemu (ISAR)
50			Dr. Zongo L.		
51				Exam	
2	09 January 2006	Site and system characterisation	Naramabuye F.	Dr. Hartemink	
3					
4					
5				Exam	
6	06 February 2006	Advanced soil fertility and biology	Dr. Bitijura	Dr. Kuyper	Dr. Bationo A. (TSBF)
7			Naramabuye F.		
8					
9				Exam	

10	06 March 2006	Multiple-purpose tree management	Dr. Sara N.	Prof. Mohren F.	Prof. Mugendi (Anafe) Prof. Temu A (Icraf)
11					
12					
13			Exam		
14	03 April 2006	Socio-economics and impact assessment	Dr. Mugabe J.	Prof. De Graaff	Dr. Steve Frenzel (Icraf)
15					
16					
17			Exam		
18	01 May 2006	Biometrics and data analysis	Dr. Lyambabaje A		Dr. Richard Coe (Icraf)
19					
20					
21			Exam		
22	29 May 2006	Research methodology	Dr. Lyambabaje A		Dr. Richard Coe (Icraf)
23					
24					
25			Exam		
26	26 June 2006	Thesis proposal writing			
27					
28					
Second year MSc programme		THESIS RESEARCH			
		Integrated watershed management		Dr. Visser	Dr. Karemangingo C.
		Extension methods and marketing	Dr. Ndejuru E.	Dr. Rueben	Dr. Steve Franzel (Icraf)
		Agroforestry and sustainable rural development	Dr. Sara N.	Dr. Hebinck	Dr. J. Ramish (AfNet)

