

Module Name Stream & River Ecology		Module Code LWM 7	CF/ECTS 3.0/6.0
Target Group BSc. graduates in biology, Environmental Sc & other related areas		Prerequisites Programme prerequisites	
Overall Objective The aim of this module is to equip the participants with the skills and knowledge necessary in conservation and management of stream and river ecosystems for the benefit of humankind.			
Learning Objectives At the end of the module participants should be able to: <ul style="list-style-type: none"> • describe the structure and functions of stream and rivers in relation to organic matter processes, nutrient dynamics, hydrology and watershed erosion • analyze, identify and discriminate the various riparian vegetation in terms of their importance as sources of energy to streams • evaluate the role of macroinvertebrates as bio-indicators of water quality in streams • identify suitable sampling strategies for stream benthos, physical and chemical parameters, nutrients and vegetation 			
Subjects/Syllabus <i>Watershed Basics & water dynamics:</i> Definitions, Concepts of ecohydrology, Hydrologic Data: Collection and use, Consumptive uses of water & effects on watershed and ecosystem, Concepts of modeling erosion in watersheds and Practical applications. <i>River/stream riparian vegetation interactions/connectivity:</i> Defining the link between the riparian zone and the river/stream. Characteristics of riparian vegetation and their importance in streams. Human influence on tropical riverine buffer strips (Catchment activities and their effects). <i>Organic matter, biofilm and nutrient dynamics in streams and rivers:</i> sampling techniques, sample processing and data analysis on organic matter, biofilm, and nutrient, POM & DOM, food-webs in streams and rivers <i>Stream Characterization:</i> Stream ecosystem theories and concepts, habitat template, connectivity, matter & energy flow and decomposition processes, drift. Ecology of tropical streams, Ecological integrity, <i>Stream macroinvertebrate communities:</i> Macroinvertebrate drift, the role of macroinvertebrates in water quality monitoring			
Didactics The contact hours in the module include lectures, laboratory and fieldwork. Special emphasis is laid on field/lab techniques, sample collection and processing, data analysis, statistics, data interpretation, discussions and scientific reporting. Case studies. Workshop-type and self-study sessions serve to digest and discuss the acquired information. Course participants present the gathered data in a final seminar.		Assessment Part 1: (50%): Written examination Part 2: (20%): Oral presentation Part 3: (10%): Scientific report Part 4: (10%): Assignment Part 5: (10%): Participation (lab & field work)	
Lecturing Materials Lecture notes, laboratory guidelines & method descriptions, reference materials, power point presentations, field and laboratory equipment			
Resource Persons: Prof. N. Kitaka; Prof. C. M'Erimba; Dr. Lulu Kaaya; Dr. G. Ong'ondo, Dr. Vincent Odongo			