University Of Hawai'i HILO

COLLEGE OF AGRICULTURE, FORESTRY & NATURAL RESOURCE MANAGEMENT

CERTIFICATE in FOREST RESOURCE MANAGEMENT & CONSERVATION

Effective Fall 2009

STUDENT NAME:	ADVISOR NAME:

CERTIFICATE DESCRIPTION:

The Certificate in Forest Resource Management and Conservation is a multi-disciplinary program that emphasizes a theoretical and applied approach to forest resource management, forest ecosystem restoration, and natural resource conservation. This certificate program prepares students for employment with the USDA Forest Service, Natural Resource Conservation Service (NRCS), the Division of Forestry and Wildlife in the state DLNR and other government organizations including the National Park Service. Other employment opportunities may be with The Nature Conservancy (TNC) and other private consulting firms involved in ecosystem management and ecological restoration. This program also prepares students for advanced studies.

CERTIFICATE REQUIREMENTS:

Students in the Forest Resource Management and Conservation Certificate Program must complete the prerequisite course (3 credits) and the required courses (18 credits) with a cumulative GPA of 2.0 or better.

COURSE NUMBER	PREREQUISITE COURSE TITLE	CREDIT HOURS	SEM/YR COMPLETED
MATH 121 **or** **BIOL 280**	**Introduction to Statistics and Probability** Basic topics in statistics and probability. Pre: Recommendation in Math Placement Exam. **Biostatistics** Statistical analysis as applied to research in the biological sciences. Theory and applications of statistics; experimental design; basic statistical concepts; hypothesis testing; parametric and non-parametric analyses. Group and independent projects, computer analysis of data.	3	

COURSE NUMBER	REQUIRED COURSE TITLE	CREDIT HOURS	SEM/YR COMPLETED
FOR 202	**Tropical Forestry and Natural Resources** Development of forestry and agroforestry, forest biology, soils, ecology, conservation, management, and products. Field trips to various forestry operations.	3	
FOR 340 **or** **GEOG 480**	**Remote Sensing and GIS in Forestry** Application of remote sensing and GIS to Forestry. Spatial data structure, map projection, global positioning system. How to create spatial datasets through GPS survey. Utilization of GIS software and performance of basic spatial analyses. Offered Spring semester. **Geographic Information Systems and Visualization** Introduction to basic concepts and skills for using Geographic Information Systems (GIS) to analyze and visualize geospatial data. Topics covered include computer representation of geographic information, construction of GIS databases, geospatial analysis and applications. Additional focus on visualization skills including cartographic principles and techniques. *Pre: GEOG 201 or consent of instructor.*	3	
FOR 410 **or** **BIOL 381**	**Physiological Ecology of Tropical Forests** Chemical, physical, and physiological processes that determine how tropical trees and forests function; emphasis on carbon, nitrogen, and phosphorus budgets; productivity, consequences of forest management, and global climate change. **Conservation Biology** Principles of conservation biology and their application to the maintenance and enhancement of bio-diversity. Philosophical basis for conservation, scientific theories and research methods used by conservation biologists, and case studies of scientific and socio-political interactions in conservation problems. *Pre: BIOL 270 and BIOL 281 or consent of instructor.*	3	
FOR 440	**Forest Ecosystem Restoration and Management** The course gives the students an introduction to basic knowledge on the interdependent disciplines restoration ecology and ecological restoration with specific emphasis on forests. Planning and restoration strategies for natural systems in the tropical regions; assessing the condition and threats to native and planted forests and developing plans for their management; introducing tools used by restoration ecologists to solve practical problems; discussing scope and success of actual restoration projects.	3	

(CONTINUED ON REVERSE)

NRES 420	**Hydrology and Watershed Management** Managing human impact on watersheds and water resources and understanding the relationships among forest, soil, water, land-use, and people. Management of wildland watershed for control of the amount and timing of water yield, stormflow, water quality, erosion, and sedimentation with socio-economic and policy considerations. Emphasis on forest and water resources management.	3	
SOIL 304	**Tropical Soils** Origin, development, properties, classification, use and management of soils with emphasis on applications in the tropics. *Pre: CHEM 124 or consent of instructor.*	3	