



THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

Department of Forestry and Wood Technology

FWT 417 – Agroforestry Systems

COURSE PARTICULARS

Course Code: FWT 417

Course Title: Agroforestry Systems

No. of Units: 2

Course Duration: One hour of theory and three hours of practical per week for 15 weeks.

Status: Compulsory

Course Email Address:

Course Webpage:

Prerequisite: NIL

COURSE INSTRUCTORS

Dr D.O. Oke

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and

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COURSE DESCRIPTION

This course is designed primarily for students in forestry and allied disciplines. Topics to be considered include: Agroforestry components and interactions. The traditional agroforestry production systems; slash and burn/bush fallow system. Review of some modern agroforestry system such as taungya, alley cropping, improved fallow etc. Design and evaluation of agroforestry systems. Emphasis will be on the use of agroforestry as an option for addressing the land-use problems such as resource limitations, fragile soils, and multiple-component systems in the developing world, and environmental issues and societal concerns about land use in the industrialized world.

COURSE OBJECTIVES

The objectives of this course are to familiarize the students with:

- Traditional and improved agroforestry technologies
- Design and development of agroforestry technology
- Problems and methodologies of agroforestry research
- Potentials of agroforestry land management and national development

COURSE LEARNING OUTCOMES / COMPETENCIES

Upon successful completion of this course, the student will be able to:

(Knowledge based)

- describe below- and above-ground interactions in a given agroforestry practice and explain how these interactions affect the trees and the crop
- explain how the process of basic resource capture and flow functions in agroforestry system
- list different agroforestry technologies and identify ways to classify them into relevant groups
- describe the components, management and objectives of the most common technologies
- explain how and establish where farmers can use appropriate agroforestry technologies to improve their farming systems
- identify existing traditional agroforestry practices and assist farmers to develop them further with improved technologies

GRADING SYSTEM FOR THE COURSE

This course will be graded as follows:

Assignments	20%
Test(s)	20%
<u>Final Examination</u>	<u>60%</u>
<u>TOTAL</u>	<u>100%</u>

GENERAL INSTRUCTIONS

Attendance: It is expected that every student will be in class for lectures and also participate in all practical exercises. Attendance records will be kept and used to determine each person's qualification to sit for the final examination. In case of illness or other unavoidable cause of absence, the student must communicate as soon as possible with any of the instructors, indicating the reason for the absence.

Assignments and Group Work: Students are expected to submit assignments as scheduled. Failure to submit an assignment as at when due will earn you zero for that assignment. Only under extenuating circumstances, for which a student has notified any of the instructors in advance, will late submission of assignments be permitted.

Code of Conduct in Lecture Rooms and Laboratories: Students should turn off their cell phones during lectures. Students are prohibited from engaging in other activities (such as texting, watching videos, etc.) during lectures. Food and drinks are not permitted in the laboratories.

READING LIST

^{2,3,4}Nair P.K.R. (1993). *An introduction to Agroforestry*. Kluwer Academic Publishers, Dordrecht/Boston/London in Cooperation with International Centre for Research in Agroforestry. 499 pages.

⁴Ong C.K. and Huxley P. (eds)(1996). *Tree-Crop Interactions: A Physiological Approach*. CAB International in association with International Centre for Research in Agroforestry. 386 pages.

Scroth G. And Sinclair F.L.(2003). *Trees, Crops and Soil Fertility: Concepts and Research Methods*. CABI Publishing. 437 pages.

^{2,3,4}Young A. (1989) *Agroforestry for Soil Conservation*. CAB International. 276 pages

^{2,4}Umrani R. And Jain C.K.(2010). *Agroforestry Systems and Practices*. Oxford Book Company, Jaipur,India. 294 pages

Legend

- 1- Available in the University Library
- 2- Available in Departmental/School Libraries
- 3- Available on the Internet.
- 4- Available as Personal Collection
- 5- Available in local bookshops.

COURSE OUTLINE

Week	Topic	Remarks
1	Introduction and Course Overview Concepts and principles of agroforestry	During this first class, the expectation of the students from the course will also be documented.
2 & 3	Agroforestry systems/technologies. Classification of agroforestry systems <ul style="list-style-type: none"> • Structural classification • Classification based on function of systems • Ecological classification • Classification based on socioeconomic criteria 	Practical exercise will involve visits to the agroforestry demonstration plot to identify some important agroforestry species.
4	Shifting cultivation and improved fallows	Field visits will be organized to observe some existing agroforestry practices and discuss with the farmers on their tree, crop, and animal management practices, yields and problems.
5	<ul style="list-style-type: none"> • Taungya • Homegardens 	
6	<ul style="list-style-type: none"> • Alley cropping 	Students will be required to make

	<ul style="list-style-type: none"> • Multistorey tree gardens 	presentation on some well known agroforestry practices in their area.
7 & 8	<p>Component interaction in agroforestry</p> <ul style="list-style-type: none"> • Positive interactions • Negative interactions • Component management 	MID-SEMESTER TEST
9 & 10	<p>Diagnosis of agricultural land use constraints</p> <p>Design of agroforestry intervention</p>	
11 & 12	Field experiments in agroforestry	Students will be divided into groups to manage an existing alley cropping plot.
13 & 14	Evaluation of agroforestry systems	
15	REVISION	This is the week preceding the final examination. At this time, evaluation will be done to assess how far the students' expectations for the course have been met.