THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

Department of Forestry and Wood Technology

FWT 314- Sawmilling

COURSE PARTICULARS

Course Code: FWT 314
Course Title: Sawmilling
No. of Units: 2
Course Duration: One hour of theory and three hours of practicals per week for 15 weeks.
Status: Compulsory
Course Email Address:fwt314@gmail.com
Course Webpage:http://www.fwt.futa.edu.ng/courseschedule.php?coursecode=FWT%20204
Prerequisite: Nil

COURSE INSTRUCTORS

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and

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COURSE DESCRIPTION

This course is to introduce the students to primary mechanical processing of logs into boards, different machine woodworking, sawmill layout/ management and pollution control measure. Students are expected to visit sawmill and other wood processing industries for proper understanding of wood processing.

COURSE OBJECTIVES

The objectives of this course are to:

- Introduce the students to log storage and conservation in the mill.
- Know the workings and operations of basic conversion equipment used in the sawmill.
- Understand various methods of log conversion and safety practises in the mill.

COURSE LEARNING OUTCOMES / COMPETENCIES

At the end of the teaching period, the student will be able to:

1. Identify different types of machines used in log processing
2. Explain different methods of log conservation and preparation of logs for machining
3. Prevent accidents in a typical sawmill by understanding accident sources and safety precautions to be taken.

GRADING SYSTEM FOR THE COURSE

This course will be graded as follows:

Class Attendance	10%
Assignments	10%
Test(s)	20%
Final Examination	60%
TOTAL	**100%**

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.

Academic Integrity: Violations of academic integrity, including dishonesty in assignments, examinations, or other academic performances are prohibited. You are not allowed to make copies of another person's work and submit it as your own; that is plagiarism. All cases of academic dishonesty will be reported to the University Management for appropriate sanctions in accordance with the guidelines for handling students' misconduct as spelt out in the Students' Handbook.

Assignments and Group Work: Students are expected to submit assignments as scheduled. Failure to submit 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

Burge M.N (1988)[I] : Fungi in Biological Control System. Manchester University press, Manchester ISBN: 0-7190- 1979-6.

Dinwoodie J.M (1981)[I]: Timber, its Structure, properties and Utilization. 6th Edition. Mecmillan Education LTD Houndmils, Hong kong. ISBN: 0-333-25751-0

Kolmann, F.F.P., E.W Kuenzi, A.J Stamn (1975)[3]: Principles of wood science and Technology: Volume 2: Wood Based Materials, Manufacture and Properties Springer-Verlag ISBN: 3540064672

Kollmann, F.F.P., (1984)[3]: Principles of Wood Science and Technology: Sold Wood: Springer-Verlag 1984 ISBN-13: 978-0387042978

Nigeria Code of Practice 2 (NCP) (1973)[3]

Lez Josa and G.R. Middleton (1994)[2]: A Discussion in wood Quality Attributes and Their Practical Implications. Forintek Canada Corporation, Vancouver, B.C. Special Publication No. SP-34.

Walker, J.C.F.; B.G. Butterfield; and T.A.G. Langrish (1993)[2]: Primary Wood Processing: Principles and practice. Chapman Hall. ISBN: 041254802.595pp.

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

Weeks	Topics	Remarks
1 & 2	Introduction to theory of cutting wood and machining/ types of saw teeth	During this first class, the general overview of the course will be considered and existed relationship with other field in the course of study will be emphasised.
3	Sawmilling and basic operations/ raw material processing	Definition of sawmilling, and different operation involved in sawmilling will be treated.
4 & 5	Source of raw materials and log	As part of continuation from the previous class, different sources of location for raw

	conservation plant layout and preparations for milling	material will be explained and brief illustration on timber harvesting, loading, transportation and offloading will be looked into. Mode/method of log conservation both before and at sawmill will be elucidated and all activities before conversion will also be considered. Illustration on a typical layout of sawmill be illustrated with annotated diagram.
6	Methods of log conversion and product yield	Types of conversion possible at sawmill will be consider in a transitional mode as the operation progresses. The advantages and disadvantage of one over will be considered. Calculation on how to calculate conversion efficiency in sawmills will examined.
7 & 9	Sawmill equipment: frame saw, band saw and circular saw	The design for each of the equipment will be considered. There mode of operation, limitation and advantages of each will be considered sequentially.
10	Saw doctoring	The lecture will provide solution to following question • Who is a saw doctor • Why saw doctoring • What are the basic equipments required in this section of saw mill. (Visitation to a sawmill to enhance practical skill and understanding of class works)
11 & 12	Mill handling equipment: cranes trucks, rollers bell and chain conveyors/ elevations	Mode of internal transportation within sawmill from the log yard to the dispatch after conversion will be discussed in a sequential order. Visual aid will also be used as instructional materials.
13	Pollutions in the mill and management practices	Environmental management within sawmill will be the focal point. Different mode of control will be elucidated. Basic safety material to be used will also be discussed.
14	Basic wood working machines: Turning late, planning machine, spindle moulder etc.	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.
15	Revision	This is the week preceding the semester

		examination. At this time, evaluation will be done to assess how far the students' expectations for the course have been met.