



**WOLLO UNIVERSITY**  
**Kombolcha Institute of Technology**  
**Department of Garment Engineering**

COURSE GUIDE BOOK	
Program	Regular
<b>A. Basic information</b>	
Module Name	Garment Workplace Engineering and Management
Module Team Leader	Belay Abera
Course Title	Maintenance for garment engineering
Course Code	GrEg2122
ECTS	5
Contact hour/week	Lecture Hrs: 2    Lab Hrs: 3    Tutorial Hrs: 0    Home Study: 3
Course Type	Compulsory /major
Prerequisite Course Code	None
Academic Year	2012 E.C/2020G.C
Semester	4
Target Group	2 <sup>rd</sup> Year Garment Engineering Students
Venue [Class Room]	Section A
<b>B. Instructor Information</b>	
Name	Belay abera Goshu
Office	Garment department head G+2, 303
Office Consultation Hours	Monday : 2:00-4:00 am Thursday : 5:00- 6:00 am
Address	E-mail: belayabera199@gmail.com    Cell Phone: +251928479028
<b>C. Course Description</b>	
The course briefs different types of maintenance management principles. It comprises policies of maintenance, principles and horizons of maintenance and reliability analysis	

**D. Course Objectives**

At the end of this course, the student will be able to:

- To introduce students with the theory and practice of maintenance.
- To describe different type of maintenance policy.
- To Understand functions, organizations and objectives of maintenance
- to understand fundamentals of maintenance management
- To be familiar with maintenance processor of single needle lockstitch machine, over lock machine, Ironing, finishing machine and some other special stitching machine.

- To make maintenance plan and schedules for Garment industrial

#### E. Tentative Schedule of lecture, activities and assignments and Readings

Week	Lecture Topics and Subtopics of each Chapters	Lab topics and subtopics	Student activities and assignment
1	<b>Chapter One</b> <b>Introduction to Maintenance</b> <ul style="list-style-type: none"> <li>➤ Function of Maintenance</li> <li>➤ Objective/expectation/ of Maintenance</li> <li>➤ Primary and Secondary Functions of maintenance.</li> </ul>	<b>Single Needle Stitching Machine</b> <ul style="list-style-type: none"> <li>A. Safety procedure</li> <li>B. Working principle of SNLS</li> </ul>	
2	<ul style="list-style-type: none"> <li>➤ Basic of Maintenance</li> <li>➤ Organized maintenance Acquisition and Life Cycle Cost</li> </ul>	<ul style="list-style-type: none"> <li>C. Detail SNLS sketch</li> <li>D. Motion transmission</li> <li>F. Common trouble shutdowns</li> </ul>	
3,4&5	<b>Chapter Two</b> <b>Different type of maintenance.</b> <ul style="list-style-type: none"> <li>➤ Policies with respect to work allocation</li> <li>➤ Selection and Implementation of a Scheduling System</li> <li>➤ Preventive versus Breakdown Maintenance</li> <li>➤ Policies with respect to work force</li> <li>➤ Centralization versus Decentralization</li> <li>➤ Policies with respect to intra plant relations.</li> <li>➤ Policies with respect to control</li> </ul>	<b>Over lock Stitching Machine</b> <ul style="list-style-type: none"> <li>G. Safety procedure</li> <li>H. Working principle of over lock machine</li> <li>I. Detail over lock machine sketch</li> <li>J. Motion transmission</li> <li>K. Common trouble shutdowns</li> </ul>	Assignment 1
6,7&8	<b>Chapter Three</b> <b>Principles and horizons of Maintenance Management</b> <ul style="list-style-type: none"> <li>➤ Function of</li> </ul>	<b>Ironing and finishing machine</b> <ul style="list-style-type: none"> <li>L. Safety procedure</li> <li>M. Working principle of Ironing and</li> </ul>	

	<ul style="list-style-type: none"> <li>➤ Maintenance</li> <li>➤ Objective of Maintenance</li> <li>➤ Maintenance Organization</li> <li>➤ Planning of Maintenance Work</li> <li>➤ Replacement Analysis</li> <li>➤ Corrective Maintenance</li> <li>➤ Preventive Maintenance</li> <li>➤ Total Productive Maintenance</li> </ul>	finishing machine N. Detail sketch of Ironing and finishing machine O. Motion transmission P. Common trouble shutdowns	
9ss,10,11&12	<b>Chapter Four</b> <b>Introduction to Reliability</b> <ul style="list-style-type: none"> <li>➤ Definition</li> <li>➤ Failure Rate</li> <li>➤ Failure Distributions</li> <li>➤ Basic Derivations (MTBF, MTTF,)</li> <li>➤ Reliability of Plant Components</li> </ul>	<b>Cutting machine (Straight knife &amp; circular knife).</b> Q. Safety procedure R. Working principle of Straight knife and curricular knife S. Detail sketch of Straight knife and curricular knife T. Motion transmission Common trouble shutdowns.	Assignment 2

### F. Assessment/Evaluation & Grading System

The Lecture and Lab/Practical parts of the course will each be evaluated separately for 100 % and the final marks will be arrived at by giving weights according to the hours allocated to the Lecture and Lab/Practical parts. The details are given below :

#### Lecture Part (Weight 40 %) Lab/Practical Part (Weight 60 %)

Tests (3):                **30 %**                Lab/Practical Records:        **60 %**

Final Examination: **40 %**                Lab/Practical Written Exam:**20 %**

Assignments                **30%**                Demonstration/ Defense:    **20 %**

### G. Course Polices

All students are expected to abide by the code of conduct of students throughout this course. Academic dishonesty, including cheating, fabrication, and plagiarism will not be tolerated and will attract disqualification of marks or values. It is expected from students to do all the assignments and activities they are supposed to accomplish. Students are required to submit and

present the assignments provided according to the time table indicated. Teachers give directions and instruction about assignments and other responsibilities of students. The mode of delivery shall encourage active participation of students. Minimum of 85 % attendance during lecture hours; and 100 % attendance during Tutorial/Practical/Laboratory sessions, except for some unprecedented mishaps (wherever applicable)

Class activities will vary day to day, ranging from lectures to discussions. Students are appreciated to ask any question at any moment in class and during consultation periods. Cell phones MUST be **turned off** before entering the class as they are disruptive and annoying to the class

- **Remark: Ground Rules set in class**

1. *Coming late and missing class is forbidden.*
2. *Course must be covered on time.*
3. *Denying instructor academic course order is prohibited.*
4. *Any disrespect or discourage act is not appreciated.*
5. *Students and instructor evaluation must be fair.*
6. *Begging mark is seriously banned.*
7. *Cheating and deceiving in any circumstance is illicit.*

## **REFERENCE BOOKS**

1. R. Keith Mobley,(2008). MAINTENANCE ENGINEERING HANDBOOK. The McGraw-Hill Companies, Inc.USA.
2. Lindly R.Higgins, *Maintenance Engineering Handbooks*,5<sup>th</sup> edition,1995,McGraw Hill,Inc
3. B.S.Dhillon, *Engineering Maintenance-A Modern Approach*, 2002, CRC Press
4. S.C. Sharma, *Industrial Organization and Engineering Economics*, 2003
5. Brijendra Singh, *Quality and Reliability Analysis*, 1998
6. Bruce Hawkins, *Maintenance Planning and Scheduling : Streamline Your Organization for a Lean Environment*, February 2006, Elsevier Science &Technology Books.
7. SNLS operation manual.
8. Over lock stitching machine manual.
9. Ironing and Finishing machine manuals.
10. Cutting machine manuals