

AME-108 - MAINTENANCE PRACTICES- WORKSHOP LAB

COURSE NAME:	MAINTENANCE PRACTICES- WORKSHOP LAB	COURSE CODE:	AME-108
SEMESTER	I	Course Group	Core
Teaching Scheme in Hrs (L: T:P)	1:0:2	Credits	2.0
Methodology	Lecture+ Practice	Total Contact Hours :	45
CIE	60 Marks	SEE	40 Marks

Prerequisites

Aircraft Maintenance Engineers are responsible for the maintenance and repair of aircraft for this Purpose they must have proper knowledge of tools used for aircraft maintenance. Proper handling, Care and controls of their personal tools.

Unit No	Unit name	Periods	Questions for SEE	Marks weightage	%of Weightage
			Handling/Manipulation/ Precision		
1	General Introduction & safety precautions	3		40	100
2	Fitting shop	9	4		
3	Carpentry shop	06	2		
4	Sheet metalwork	9	3		
5	Welding	12	3		
6	Machine shop	6	1		
	Total	45	13	40	100

Note:1. At beginning of each trade Instructor should demonstrate all the tools and equipment available in that shop explaining its purpose/ application and also guide the students about safety precautions to be followed

2. At the end of every practice class the object prepared by student should be evaluated for 20 marks before student pointing the mistakes committed by student.

1. Student can answer any one question out of 5 questions.
2. To pass in practical Exam student should acquire 50% marks in both CIE and SEE separately and CIE & SEE put together.
3. If students acquire less than 50% in CIE, accordingly the students have to acquire more than 50% in SEE to get overall 50 % to pass

On completion of course the student should be able to

CO1	Know the importance of general safety precautions on different shop floors and learn the use of different tools.
CO2	Understand the basics of removal of material from work piece surface to attain Specific shape.
CO3	Ability to Identify and use the appropriate tools and equipment in Fitting Shop to Perform fitting operations as per specified dimensions.
CO4	Ability to Identify and use the tools to perform Carpentry operations and prepare Simple wooden joints.
CO5	Ability to Identify and use the tools to perform operations in sheet metal shop and prepare simple prototypes such as rectangular open type tray and riveted joints
CO6	Familiarize the tools used in Welding section and perform simple operations brazing, soldering , Lap and butt welding etc.
CO7	Able to perform certain lathe operations like Plain turning, Step Turning,. Ability to demonstrate of operations on Milling, shaping and Slotting machines

General Introduction & safety precautions: Safety rules and Precautions in workshop-Instructions in the remedial action to be taken in the event of accidents/ human or Machines.

COURSE CONTENTS

FITTING SHOP

1. Marking a straight cut with hack saw like a) Cutting a solid block b) Cutting a channel c) cutting a corner d) cutting conduit
2. Filing practice to make a square.
3. Making male and female as per diagram
4. Thread cutting practice using taps and dies

CARPENTRY SHOP

1. Cutting of wood with hand saw and planing practice.
2. Preparation of T-Joint, Dovetail joint

SHEETMETALWORK

1. Practice on cutting of sheet with straight and curved snips
2. Formation of joints like grooved joints, locked groove joint
3. Preparation of are rectangular open type tray
4. Preparation of riveted joints

WELDING SECTION

1. Practice of lighting the Gases.

2. Practice a Line Brazing.
3. Practicing a Seam Soldering.
4. Practicing a Lap welding and Butt Welding

MACHINE SHOP:

1. Practice on Lathe Machine operations- Facing, plain turning, step turning
2. Demonstration of Milling, Shaping and Slotting Machines.

Learning Outcomes for Workshop Practice

After completion of the workshop practice course, students will be able to:

1. Identify and use common hand tools, measuring instruments, and workshop equipment safely and effectively.
2. Perform basic fitting operations such as marking, cutting, filing, threading, and preparation of mating components.
3. Execute carpentry operations including sawing, planning, and preparation of wood joints such as T-joint and dovetail joint.
4. Carry out sheet metal operations including cutting, bending, grooving, riveting, and fabrication of simple sheet metal articles.
5. Demonstrate basic welding and soldering practices such as gas lighting, brazing, seam soldering, lap welding, and butt welding.
6. Perform fundamental lathe operations including facing, plain turning, and step turning.
7. Understand the working principles and applications of milling, shaping, and slotting machines.
8. Develop skills in precision, workmanship, safety consciousness, and proper maintenance of workshop tools and equipment.
9. Interpret simple workshop drawings and fabricate components as per given dimensions.
10. Work individually and in teams while following standard workshop safety procedures and industrial practices.

REFERENCE BOOKS

1. Manufacturing Technology (Vo-II) by PN Rao (McGrawHill)
2. Principles of Foundry Technology by RK Jain (McGraw Hill)
3. Mechanical Workshop & Laboratory Manual By. C. John

CourseArticulation Matrix

CO-POAttainmentMatrix:

COURSEOUTCOMES	PROGRAMOUTCOMES						
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3	2	2	-	-	-	1
CO2	3	2	3	-	-	-	1
CO3	3	2	3	-	-	-	1
CO4	3	3	3	-	-	-	1
CO5	3	2	3	-	-	-	1
CO6	3	3	3	-	-	-	1
CO7	3	3	3	-	-	-	1

Level3-HighlyAddressed, Level2-ModeratelyAddressed, Level1-LowlyAddressed.

Model Paper

ME-108– MAINTENANCE PRACTICES-WORKSHOP LAB
(CEE)

Time:2 Hour

TotalMarks:40 MARKS.

Note:Answeranyone question.

1. Markand Preparethe squarebyfilingas perthe givenfigure.
2. Preparethe component bysawingas perthegivenfigure.
3. Prepare male and female as per the given figure.
4. Produce internal threads as per the given figure
5. Cut the woodas perthegiven figure.
6. Preparedovetaillapjointasperthe givenfigure
7. Cutthesheet metal asper thegiven figure.
8. Preparesingleseamjointasperthe given figure.
9. Preparerectangularopentrayasperthe given figure.
10. Prepare Lap joint
11. Prepare Butt Joint
12. Prepare the brazing operation as per the given figure
13. Prepare step turning as per the given figure.

Note:1.ForMidsem15marksaretobeawardedforconductofexperiment,3marksfor Record and2marksFor Vivavoice.

- 2.Examshouldbeconductedfromthetradeinwhichstudentundergonetrainingonly as classes are conducted on rotation basis.