

University of Management and Technology

Course Outline

Course code: ET 339

Course title: Aircraft Maintenance Practices – II

Program	BSc Aircraft Maintenance Engineering Technology	
Credit Hours	02+01	
Duration	15 weeks	
Prerequisites	ET337 Aircraft Maintenance Practices 1	
Resource Person	Zukhraf Jamil	
Counseling Timing (Room#)	Tuesday	14:00 to 17:00
	Thursday	14:00 to 17:00
	Friday	14:00 to 17:00
Contact	Zukhraf.jamil@umt.edu.pk	

Chairman/Director signature.....

Dean's signature.....

Date.....

Learning Objective:

This course is to introduce the students with inspection and maintenance of bearings, gears, belts, and control cables; and material handling procedures. The students will be able to have a comprehensive understanding and hand-on practice of workshop processes including welding, brazing, soldering and bonding. Detailed aircraft weighing, balancing, handling, storage, disassembly/assembly, inspection, and repair are also a part of the course. Students will also get familiarized with aircraft maintenance management procedures as part of course.

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

S No	CLO Statement	PLO	Learning Domain and level
1.	Understand and be assured in fundamental workshop procedures.	1	C1
2	Be competent in using workshop and equipment testing tools and perform workshop and maintenance procedures	5	P3
3	Apply the gained knowledge and practice in a maintenance setup effectively	9	C3
4	Understand the importance of following instructions and procedures for safety and effective flow of work in organization.	8	C3
5	Effectively communicate experiment results through both written reports and oral Presentations.	10	P3

1. CLO – PLO MAPPING:

CLOs	PLOs											
	Engineering Knowledge	Problem Analysis	Design / Development of Solutions	Investigation	Modern Tool Usage	The Engineering Technologist and Society	Environment and Sustainability	Ethics	Individual and Team Work	Communication	Project Management	Lifelong Learning
	1	2	3	4	5	6	7	8	9	10	11	12
1	C1											
2					P3							
3									C3			
4								C3				
5										P3		

Learning Methodology:

- The course content is designed as a mixture of theory lectures and web tutorials.
- Workshop tasks involving hands on practice are also designed as part of the course to ensure active participation and consolidate learning.
- Participants will be evaluated based on task demonstration, assignments and quizzes from theory, worked examples and individual/group presentations.

Recommended Text Books:

“Maintenance Practices, Cat B1, Module 7” by AeroBildung, 2014

Reference Books:

“Aviation Maintenance Technician Handbook” by U.S. Department of Transportation, Federal Aviation Administration, 2008.

Grade Evaluation Criteria

Following is the criteria for the distribution of marks to evaluate final grade in a semester.

Theory:

Marks Evaluation	Marks in percentage
Quizzes (x6)	15%
Assignments (x2)	10%
Evaluation(Viva)	5%
Presentation	5%
Mid Term Examination	25%
End Term Examination	40%
Total	100 %

Practical:

Marks Evaluation	Marks Percentage
Class activity	5%
Team work	5%
Quizzes	15%
Viva	5%
Lab Report	10%
Final Evaluation	60%
Total	100%

Calendar of Course contents to be covered during semester

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Week	Course Contents	Reference Chapter(s)	Quiz	Assignments	CLOs
1-2	Inspection, maintenance, and repair techniques for bearings, transmissions, and cables	7.10 – 7.13	1	0	1,2
3	Cutting and forming used in sheet metal work Application and repair of composite materials	7.14 Additional resources			
4-5	Welding, soldering, and bonding techniques for various materials and parts and general safety precautions to be followed for these procedures	7.15	1	1	1,3
6-7	Principles of aircraft weight and balance, its importance, Aircraft weighing procedures Shifting, altering aircraft CG Aircraft loading, weight distribution handling and documentation Airfield safety regulations Aircraft ground handling and storage	7.16 Additional resources	1	1	1,3

8	Mid Term Examination				
9	Aircraft servicing equipment, fueling/defueling procedures Aircraft deicing/anti-icing equipment and procedures	7.17 Additional resources	1	1	1
10-11	Types of defects and inspection techniques Corrosion treatment Structural repair methods for materials like sheet metal, fiber-reinforced material	7.18.1-7.18-3			
12	Non-Destructive testing techniques Aircraft disassembly, troubleshooting, and reassembly techniques	7.18.4 7.18.5	1	1	2
13	Inspection procedures following abnormal events	7.19			
14-15	introduction to aircraft maintenance procedures, scheduled maintenance programs, maintenance management	7.20	1		1

Lab Outline

SR No.	Experiment Title.	CLOs
1	Perform tube bending (galvanized pipe) using dry sand method and by using hand-held bending tool.	4,5
2	Perform tube cutting and hot bending (galvanized pipe) operation by using dry sand filling method	
3	Perform basic Lathe operations on given specimen	
4	Perform shaping operations on the given specimen	
5	Perform slotting operations on the given specimen	
6	Perform drilling operations (drilling, boring, reaming, tapping, counter boring, spot facing, counter boring) on given specimen	
7	Perform milling operations on given specimen	
8	Perform arc welding to make lap weld joints on the given specimen	
9	Perform arc welding to make v-butt weld joints on the given specimen	

Class Policy

STUDENTS ARE REQUIRED TO READ AND UNDERSTAND ALL ITEMS OUTLINED IN THE PARTICIPANT HANDBOOK

CLASS ATTENDANCE: Students need to be in class at the assigned time. After 10 minutes past the assigned time, the students will be marked absent.

TURN OFF MOBILE PHONE! It is unprofessional to be texting or otherwise.

READ EMAILS! Participants should regularly check their university emails accounts regularly and respond accordingly. Students would be responsible if they miss a deadline because of not reading the emails.

CLASS ATTENDANCE POLICY: A minimum of 80% attendance is required for a participant to be eligible to sit in the final examination. Being sick and going to weddings is absence and will not be counted as present. Participants with less than 80% of attendance in a course will not be allowed to take end term exams. International students who will be leaving for visa during semester should not use any days off except for visa trip to avoid reaching short attendance.

MOODLE: UMT –LMS (Moodle) is an Open Source Course Management System (CMS), also known as a learning Management System (LMS). Participants should regularly visit the course website on MOODLE Course Management system, and fully benefit from its capabilities. In case of any problem while using MOODLE, visit <http://oit.umt.edu.pk/moodle>. For queries email moodle@umt.edu.pk

HARASSMENT POLICY: Sexual or any other harassment is prohibited and is constituted as punishable offence. Sexual or any other harassment of any participant will not be tolerated. All actions categorized as sexual or any other harassment when done physically or verbally would also be considered as sexual harassment when done using electronic media such as computers, mobiles, internet, emails etc.

USE OF UNFAIR MEANS/ HONESTY POLICY: Any participant found using unfair means or assisting another participant during a class test/quiz, assignments or examination would be liable to disciplinary action.

PLAGIARISM POLICY: All students are required to attach a “Turnitin” report on every assignment, big or small. Any student who attempts to bypass “Turnitin” will receive “F” grade which will count towards the CGPA. The participants submit the plagiarism report to the resource person with every assignment, report, project, thesis etc. If student attempts to cheat Turnitin, a second “F” will be awarded that will count towards the CGPA. There are special rules on plagiarism for final reports etc. all outlined in your handbook.

COURSE WITHDRAWAL POLICY: Students may withdraw from a course till the end of the 12th week of the semester. Consequently, grade ‘W’ will be awarded to the student which shall have no impact on the

calculation of the GPA of the student. A Student withdrawing after the 12th week shall be automatically awarded "F" grade which shall count in the GPA.

COMMUNICATION OF RESULTS: The results of quizzes and assignments are communicated to the participants during the semester and answer books are returned. It is the responsibility of the course instructor to keep the participants informed about his/her progress during the semester. The course instructor will inform a participant at least one week before the final examination related to his or her performance in the course.

Faculty Signature

Date.....