GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

COURSE CURRICULUM

AIRCRAFT MAINTENANCE II
(Code : 3360104**)**

Diploma Programme in which this course is offered	Semester in which offered
Aeronautical Engineering	SIXTH

1. RATIONALE

The main objective of this course is to understand the working of an aircraft assembly and rigging. This subject addresses the understanding of chemical agents, aircraft fabrics, painting, registration marks, an aircraft assembly and an aircraft rigging.

2. LIST OF COMPETENCIES

The course content should be taught and implemented with an aim to develop different types of skills leading to the achievement of the following competencies:

→ **To know about different fabrics & paints which are used in an aircraft.**
→ **To study about details information of an aircraft assembly and rigging.**

3. TEACHING AND EXAMINATION SCHEME.

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				
				Theory Marks		Practical Marks		Total Marks
L	**T**	**P**	**C**	**ESE**	**PA**	**ESE**	**PA**	**150**
04	00	02	06	70	30	20	30	

Legends: **L**-Lecture; **T** – Tutorial/Teacher Guided Theory Practice; **P** -Practical; **C** – Credit, **ESE** -End Semester Examination; **PA** - Progressive Assessment.

4. DETAILED COURSE CONTENTS

Unit	Major Learning Topics and Sub-topics	Outcomes (in cognitive domain)
UNIT– I HAZARDOUS MATERIALS AND SAFETY PRACTICES	• To study about chemicals agents. • To study about emergency procedures.	1.1 Hazardous Materials 1.2 Chemical Agents 1.3 Osha's Hazardous Communications Standards
UNIT– II AIRCRAFT FABRIC COVERING	• To study about fabric used in aircraft. • To study about procedures of fabric covering. • To study about repairs of fabric coverings. • To study about cotton and fiberglass coverin	2.1 General History 2.2 Fabric Terms 2.3 Legal Aspects of Fabric Covering 2.4 Approved Materials 2.5 Available Covering Processes 2.6 Determining Fabric Condition—Repair or Recover? 2.7 Fabric Strength 2.8 General Fabric Covering Process

	gs.	2.9 Polyester Fabric Repairs 2.10 Cotton-Covered Aircraft 2.11 Fiberglass Coverings
UNIT– III **AIRCRAFT ASSEMBLY A D RIGGING**	• To study about aircraft assembly and rigging. • To study about flight c ontrol system installati on. • To study about Inspec tion and Maintenance of aircraft components .	3.1 Aircraft Rigging 3.2 Airplane Assembly 3.3 Control Operating Systems 3.4 Rigging Checks. 3.5 Aircraft Inspection 3.6 Rotary-Wing Aircraft Assembly and Rigging. 3.7 Helicopter Flight Conditions & controls 3.8 Rotorcraft Transmission system.
UNIT– IV **AIRCRAFT PAINTING AND MARKINGS**	• To Study about variou s finishing materials a nd primers. • To study about paintin g tools. • To study about sequen ces of painting and saf ety equipment's. • To study about registra tion markings.	4.1 Introduction 4.2 Finishing Materials & Primers 4.3 Methods of Applying Finish & Finishing Equipment 4.4 Miscellaneous Painting Tools and Equipment 4.5 Preparation 4.6 Sequence for Painting a Single-Engine or Light Twin Airplane 4.7 Paint System Compatibility 4.8 Safety in the Paint Shop & Protective Equipment for Personnel 4.9 Registration Marks for Aircraft

5. SUGGESTED SPECIFICATION TABLE WITH HOURS AND MARKS (THEORY).

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	HAZARDOUS MATERIALS AND SAFETY PRACTICES	04	03	04	03	10
II	AIRCRAFT FABRIC COVERING	10	06	06	06	18
III	AIRCRAFT ASSEMBLY AND RIGGING	12	08	10	06	24
IV	AIRCRAFT PAINTING AND MARKINGS	10	06	06	06	18
TOTAL		**36**	**23**	**26**	**21**	**70**

Legends: R = Remember **U**= Understand; **A**= Apply and above levels (Bloom's revised taxonomy)

6. SUGGESTED LIST OF EXERCISES/PRACTICALS.

The tutorial exercises should be properly designed and implemented with an attempt to develop different types of skills leading to the achievement of the above mentioned competencies.

SR. NO.	UNIT NO.	PRACTICAL
1	I	To Study About Hazardous Materials and Safety Practices.
2	II	To Study About Aircraft Fabric Covering.
3	III	To Study About Aircraft Assembly and Rigging.
4	IV	To Study About Aircraft Painting and Markings.

7. SUGGESTED LIST OF STUDENT ACTIVITIES.

Following is the list of proposed student activities like:

SR.NO.	ACTIVITY
1	Preparation of power-point slides, which include videos, pictures, graphics for better understanding theory and experiment work.
2	Prepare a charts.

8. SUGGESTED LEARNING RESOURCES.

A. List of Books:

SR. NO.	TITLE OF BOOK	AUTHOR	PUBLICATION
1.	Aircraft Maintenance & Repair	Michael J. Kroes	Mcgraw Hill Education
2.	Aviation Maintenance Technician Handbook	U S Department Of Transport	Fedaral Aviation Administration

B. List of Software/Learning Websites

a. https://www.faa.gov/regulations_policies/handbooks_manuals/aircraft/amt_handbook/

b. https://en.wikipedia.org/wiki/Aircraft_maintenance

c. https://www.youtube.com/watch?v=bNvwz8r_300

d. https://www.youtube.com/watch?v=Mzx-PfGkag8

e. https://www.youtube.com/watch?v=X-RyrejKq4Q

f. https://www.youtube.com/watch?v=NDXUytTOt4w

g. https://www.youtube.com/watch?v=FjVGGbR9sPw

9. COURSE CURRICULUM DEVELOPMENT COMMITTEE

Faculty Members from Polytechnic.

- **Prof.Ankitkumar Patel**, H.O.D., Aeronautical Dept. Parul institute of Engg. & Tech.-Diploma studies

Faculty Members from Engineering.

- **Prof. Jignesh Vala,** Asst. Professor, Aeronautical Dept. SVIT, Vasad.
- **Prof.Arpit Patel**, Asst. Professor, Aeronautical Dept. SVIT, Vasad.