AIRCRAFT SYSTEM-III

	L	T	P
Hrs./Week	3	-	5

DETAILED CONTENTS

Sr. No.	Theory	Time (Hrs.)	Practical	Time (Hrs.)
1.	Identification of aircraft cables, Crimping and soldering techniques, Bending continuity and	2	identification of aircraft cables crimping and soldering techniques, bending insulation check	4
2.	series and parallel resonance and Calculations of resonant frequency	2	Tuning of various radio equipment	2
3.	Handling of CRT's weather radar, ESD Microprocessor	2	Handling of CRT's weather radar, ESD, microprocessor	2
4.	Atmospheric layer Around earth, radio wave Propagation	2	Familiarization with various communication and navigation antenna and their maintenance way Contact with	2
5.	Communication system	10	Tower/another aircraft At HF, VHF and use of selcal	10
5.1	VHF			
5.2	HF		use of interphone inside the aircraft	
5.3	Interphone			
5.4	Selcal		Testing of CVR	
5.5	CVR		operation of ELT	
5.6	ELT			
5.7	Navigation system	14	use of ground facilities available At the airport and use of field testers For ground testing	8
6.	Direction finding			
-	ADF			
-	VOR			
6.2	Distance measurement			
-	DME			
-	Tacan			

6.3	Grid navigation		
-	Omega system		
-	Inertial navigation system(INS)		
-	Doppla navigation		
-	System, GPS		
6.4	Radar	Demonstration on	4
-	weather radar	aircraft with emphasis	
-	Radio altimeter	on precaution, health	
		Hazard and aircraft safety	
6.5	Landing aids		
-	ILS/MLS		
-	ATC Transponder A,		
-	C and S		
-	GPWS		
-	Fans		

MAINTNANCE CONCEPT AND PRACTICES-III

	L	T	P
Hrs./Week	**4**	**-**	**5**

DETAILED CONTENTS

1.	Aircraft electrical System maintenance	15		
1.1	Generating system		Practical on test routines environmental Testing w.r.t. certain, battery and actuator	14
1.2	Electrical distribution			
1.3	Electrical component Overhaul/requirements		and voltage regulator	
2.	Aircraft instrument system	12		
2.1	Maintenance of measurement systems		Practical on overhaul procedure Altimeter combine temperature And pressure gauge, artificial horizon.	10
2.2	Automatic control system			
2.3	Instrument overhaul practice			
3.	Avionics	7		
3.1	Testing with fault location		practical on repair and testing and any	6
3.2	Overhaul requirements		one of avionics components	
4.	Environmental system	5		
4.1	Oxygen system Condition assessment and Repair /replacement		identify and assess the condition of environmental system components	4
4.2	Air-conditioning system condition Assessment etc.			
5.	Ejection system	4		
6.	Pressurizing system	3		
7.	Fire detection and extinguish system	3		
8.	Modification, their purpose and Embodiment	7	Exercise on modification	
9.	Special tasks	6		
9.1	Standard room			
9.2	Battery room			
9.3	Cable work			
10.	Ground handling equipment	2	Demonstration of various GHE	2
			Condition assessment as per user report Repair planning repair assembly weight and Balance document completion and ground Testing of complete aircraft.	40

INDUSTRIAL ENGINEERING PRACTICES

	L	T	P
Hrs./Week	**4**	**-**	**-**

RATIONALE

Industrial engineering practices assume vital importance for a diploma holder in aircraft maintenance. He must appreciate the value of leadership, motivation, human relations, total quality management and environmental engineering. Hence this subject.

DETAILED CONTENTS

Sr. No.	Contents	Time (Hrs.)
1.	PRINCIPLES OF MANAGEMENT	8
1.1	Management, different functions of management. Planning, organizing, coordination and control	
1.2	Structure of an industrial organizing.	
1.3	Line, function and staff organization	
1.4	Functions of different departments	
1.5	Relationship between individual departments	
2.	HUMAN AND INDUSTRIAL RELATIONS	15
2.1	Human relations and performance in organization	
2.2	Understand self and others for effective behavior	
2.3	Behavior modification techniques	
2.4	Industrial relations and disputes	
2.5	Relation with subordinates, equals and superiors	
2.6	Characteristics of group behavior and trade unionism	
2.7	Mob psychology	
2.8	Grievance, handling of grievances	
2.9	Agitation, strikes, lockouts, picketing and gherao	
2.10	Labour welfare	
2.11	worker's participation in management	
3.	MOTIVATION	5
3.1	factors determining motivation	
3.2	Characteristics of motivation	
3.3	Methods for improving motivation	
3.4	Incentives, pay promotion, rewards	
3.5	Job satisfaction and job enrichment	
4.	Leadership	4
4.1	Need for leadership	
4.2	Functions of a leader	

4.3	Factors to be considered for accomplishing effective leadership	
4.4	Manager as a leader	
5.	HUMAN RESOURCE DEVELOPMENT	
5.1	introductions	
5.2	Staff development and career development	
5.3	Training strategies and methods	
6.	JOB EVALUATION AND MERIT RATING	4
6.1	Objectives and procedure of job evaluation	
6.2	Methods of job evaluation	
6.3	Objectives and methods of merit rating	
6.4	Advantages and disadvantages of merit rating	2
7.	Wage payment	
7.1	Introduction to wages	
7.2	Classification of wage payment scheme	
8.	INDUSTRIAL LEGISLATION	8
8.1	Introduction	
8.2	Importance and necessity of industrial legislation	
8.3	Principles of labour legislation	
8.4	Types of labour laws and disputes	
8.5	The factory Act 1948	
8.6	Payment of wages Act 1923	
8.7	Minimum wages Act 1948	
8.8	workmen's compensation Act 1923	
8.9	Industrial dispute Act 1947	
8.10	Employee's state insurance Act 1948	
9.	ENVIRONMENTAL ENGINEERING	8
9.1	Introduction	
9.2	Ecology	
9.3	Factors causing pollution	
9.4	Effects of pollution on Human health	
9.5	Air pollution and control Act	
9.6	Water pollution and control Act	
9.7	Pollution control equipment	
9.8	Solid waste management	
9.9	Noise and its control	
10.	SAFETY AT WORK PLACES	4
11	ISO 9000 AND TOTAL QUALITY MANAGEMENT CONCEPTS	2

ADVANCE AIRFRAME STRUCTURE-II

	L	T	P
Hrs./Week	**3**	**-**	**2**

DETAILED CONTENTS

Sr. No.	Theory	Time (Hrs.)	Practical	Time (Hrs.)
1.	Under carriages	5	Demonstration of attachment Of under carriage to aircraft Structure	2
1.1	Function of under carriage			
1.2	Types of under carriage			
1.3	Methods of attachment of aircraft			
2.	layout of controls	2	Demonstration of layout of controls	2
2.1	Layout of primary control surfaces			
2.2	layout of secondary control surfaces			
3.	Balancing of controls Surfaces	3	Demonstration of balancing of controls.	3
4.	Aircraft plumbing	10	Practice on cutting of Pipelines, flaring and installation	5
4.1	Metal pipe lines			
4.2	Flexible pipelines			
4.3	Cutting and flaring process of pipelines			
4.4	Process of installation of pipelines			
4.5	Colour coding			
5.	Theory of weight and balance	16	Demonstration of weighing of Aircraft	10
5.1	weighing the aircraft			
5.2	aircraft loading			
6.	Aircraft rigging and symmetry checks	12	Adjustment and alignment of Controls	10
6.1	Leveling of aircraft			
6.2	Leveling of aircraft laterally and longitudinally			
6.3	Rigging of control surfaces			
6.4	Symmetry check of aircraft			
6.5	Rigging instruments and equipment			

ADVANCED PROPULSTION –GAS TURBINE ENGINE MAINTENANCE-II

	L	T	P
Hrs./Week	3	-	3

DETAILED CONTENTS

Sr. No.	Theory	Time (Hrs.)	Practical	Time (Hrs.)
1.	Engine removal from The aircraft for top and complete Overhaul of engine and its associated Components crack detection checks Dimensional checks, repair and replacements.	5	Removing the engine from the aircraft, dismantling for crack detection dimensional checks repair and replacements	15
2.	Final assembly and installation of engine On test bed. Procedure for functional And operational checks	5	Sub assembly and final assembly of Engine installing the engine on test bed carrying out and the laid down checks	8
3.	Procedure for installing the engine Post installation checks	5	Ground running the engine and checking	8
4.	Engine preservation and Depreservation procedure for storage, Transportation and	2	Carrying out the engine preservation and depreservation of engine	2
5.	Ground running procedure of engine And various checks of engine performance	5	giving the ground run to engine	5
6.	Snag rectification, documentation, Certification in log Various inspection maintenance schedules, Servicing and special maintenance schedules Like propeller strikes rigging and duplicate Inspection of controls.	2	Doing the certification in log book referring various Servicing carrying out the rigging of various engine controls	
7.	Maintenance the record of oil and fuel Uplift and recording engine parameters	4	Preparation of various record register of	2
	Repair and replacements of parts and Accessories		Removing and installing various components and	2
8.	Engine removal and installation procedure	2		
9.	Engine starting procedure, instructions, Ground run up checks for engine performance And on condition run up of engine parameters.			
10.	Engine maintenance, minor defects Rectification, minor repair, minor replacement and Adjustments	6		
11.	Periodic inspection servicing Schedules, rigging and duplicate Inspection of control	2	Going through the various Schedules	

12.	Procedure for preservation and depreservation Of engine.	2		
13.	Documentation of certification	1		
14.	Procedure of maintenance schedules and Log books	1	Going through the various log books and schedules	2

MAJOR PROJECT WORK

	L	T	P
Hrs./Week	**3**	**-**	**5**

Project work is meant for solving open ended problems by applying the knowledge and skills gained through various subject areas. It is expected that the students will be sent to various industries for about 8 weeks at a stretch and they will be asked to take live problems from the industries as project work. The projects given to the student's should be such for which someone is waiting for solution. Some of the suggested project activities are given below:

i) Projects connected with repair and maintenance of machine parts of various aircrafts.
ii) Estimating and costing projects
iii) Design of components/parts/jigs/fixtures.
iv) Projects related to increasing productivity.
v) Project work related to quality control.

Identification of industries and problems should begin will in advance (say in the beginning of vth semester.) Students should be asked to identify suitable industries and project activity. Once, teacher is expected to guide, supervise and evaluate the project work of 6 to 8 students.