Sault College of Applied Arts and Technology sault ste. marie

Course Outline

ENGINES & AIRFRAMES

AVT 230 - 4

revised November, 1977

Topic	Periods	Topic Description	Reference
		AIRFRAME - Structures and Materials	
1	4	Nomenclature	
2	10	Aircraft Materials (a) types, properties, & specifications of non-ferrous, ferrous, and non-metallic aircraft materials (b) standard material thickness and shapes.	
3	25	Strength of Materials - limit and ultimate load, proof load, stress, strain, elasticity, stress concentrations, beams, columns, margin of safety, creep, endurance limit, fatigue strength, eccentrically loaded fastener groups, repair schemes, pressure vessels.	
4	4	Corrosion (a) electrolytic and oxidation types (b) resistance to corrosion by various A/C materials (c) corrosion resisting and high temperature alloys (d) paints and coatings	
5	2	Standard Parts	
6	1	Testing (a) destructive (b) non-destructive	
7	1	Landing gear shock absorbing methods	
		ENGINES	
1	13	Engine classification and construction (a) Piston engines - review of ignition system and timing diagram - cylinder arrangement (advantages and disadvantages) - function and construction of engine parts (b) Fuels - chemistry of fuels - combustion of fuels (knocks, pre-ignition, detonation - fuel system components	

Topic	Periods	Topic Description	Reference
		(c) Turboprop - engine description	
		(d) Turbojet - engine description	

ENGINE & AIRFRAMES

AVT 230-4

OBJECTIVES

1. To make the student aware of the purpose of main elements of the aircraft, so that he will be better able to assess the seriousness of damage, or modification, to the aircraft.

2. To emphasize the necessity for the designer to set flight restrictions, and the importance of flying within these restrictions.

3. To make the student more familiar with engineering terms so that he will be better able to communicate with maintenance personnel, and report on the condition of the aircraft.

4. To make the student more alert to the structural condition of the aircraft, and its materials.