

88/89

GENERAL ARTS AND SCIENCE
PRE-ENGINEERING PROGRAM

INTRODUCTION TO AVIATION

AVT 010 - 3

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PHILOSOPHY/GOALS:

Aeronautics is a very complex course of study, consisting of a number of subjects within the overall definition. The course has therefore been divided into separate blocks of instruction with course outlines for each block.

To provide the student with a basic knowledge of aeronautics in preparation for the Aviation Technology (FLIGHT) Program.

<u>BLOCK</u>	<u>PERIODS</u>	<u>BLOCK DESCRIPTION</u>
1	10	Navigation
2	10	Meteorology
3	6	Theory of Flight
4	6	Air Regulations
5	8	Airframes & Engines
6	8	Human Factors

METHOD OF ASSESSMENT (GRADING):

All blocks of instruction are grouped together. Test results are totalled and reduced to a percentage for mid-term and final marks. Grades will be indicated as follows:

A	90 - 100%
B	80 - 89%
C	70 - 79%
I	Below 70% (applies only to mid-term)
R	Below 70% (applies to final)

TEXTBOOKS:

From the Ground Up - A.F. MacDonald

EQUIPMENT:

AIR 5001 Sault Ste. Marie - VNC

Douglas Protractor

NAVIGATION

<u>TOPIC</u>	<u>PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	1	Types of Navigation Latitude and Longitude Time and Longitude	FGU P104-106
2	1	Earths Magnetism	FGU P106-111
3	1	Units of Distance and Speed Formula and Transposition of Formula DR Navigation	FGU P112
4	1	Aeronautical Charts - Lambert Conformai - Mercator Projection - Transverse Mercator - Oblique Mercator Types of Canadian Charts Basic Chart Information	FGU P112-117
5	·1	MID-TERM TEST - Navigation & Theory of Flight	
6	1	Plotting Instruments - Douglas Protractor - Ruler - Map Air 5001 Sault Ste. Marie	FGU P117-118
7	2	Preparation of a Map for Flight - Ten Degree Drift Lines - Ten Nautical Mile Markers - Double Drift - Opening and Closing - Snap Correction	FGU P118-121
8	1	Navigation Problems - Triangle of Velocities - Discuss - Circular Slide Rule - Radius of Action - Point of No Return - Air Position - Ground Position	FGU P121-131
9	1	TEST	

METEOROLOGY

PHILOSOPHY/GOALS:

The objective of this course is to provide GAS students with a basic knowledge of meteorology as it pertains to aviation, in preparation for entry into the Aviation Technology (FLIGHT) Program.

<u>TOPIC</u>	<u>PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	1	The Atmosphere, Clouds	FGU P70-73
2	1	Pressure & Winds	FGU P73-78
3	1	Humidity, Temperature & Stability	FGU P78-81
4	1	Air Masses & Fronts	FGU P81-86
5	1	MID-TERM EXAM	
6	1	Clouds, Percipitation & Fog	FGU P86-89
7	1	Thunderstorms, Icing & Turbulence	FGU P89-94
8	1	Weather Information & Weather Reports	FGU P96-99
9	1	Weather Forecasts	FGU P99-101
10	1	FINAL EXAM	

THEORY OF FLIGHT

<u>TOPIC</u>	<u>PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	1	Forces Acting on an Aeroplane in Flight - Lift Weight Thrust Drag - Lift & Drag Curves	FGU P15-19
2	1	Design of the Wing	FGU P19-22
3	1	The Axes of an Aeroplane Stability	FGU P22-24
4	1	Flight Performance a/s Limitations	FGU P24-29
5	1	Flight Instruments	FGU P29-38
6	1	TEST	

AERONAUTICAL FACILITIES, RULES & PROCEDURES

PHILOSOPHY/GOALS:

The objective of this course is to provide GAS students with a basic knowledge of facilities, rules and procedures, in preparation for entry into the Aviation Technology (FLIGHT) Program.

<u>TOPIC</u>	<u>PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	1	Aerodromes & Traffic Procedures	FGU P132-137
2	1	Canadian Airspace System	FGU P137-141
3	1	MID-TERM EXAM	
4	1	Air Traffic Rules & Procedures	FGU P142-148
5	1	Radio Communications Facilities & Procedures	FGU P149, P153-163
6	1	FINAL EXAM	

AIRFRAMES & ENGINES

PHILOSOPHY/GOALS:

To expose GAS students to the fundamentals of aircraft airframes and engines.

<u>TOPIC</u>	<u>PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	1	A.F. Design and Construction	FGU P7-14
2	2	Aero Engines and the Propeller	FGU P39-43 P57-59 Film
3	1	Cooling & Lubrication	FGU P43-45 Film
4	1	Fuel Systems	FGU P45-47
5	1	The Carburetor and Carb Icing	FGU P47-52 Film
6	1	Ignition & Electrics	FGU P55-57
7	1	TEST	

SAFETY & HUMAN FACTORS

PHILOSOPHY/GOALS:

To introduce the GAS students to some of the knowledge, skills and attitudes required to successfully manage aviation risks and effect safe flight.

<u>TOPIC</u>	<u>PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	1	Introduction/Attitudes/ Cause Factors	FGU P222 Aviation Safety Letter 6/86
2	1	Medical Facts for Pilots Fight or Flight	FGU P216-221 A/P Air 4.0
3	1	Seasonal Hazards Wake Turbulence	A/P Air 2.0 A/P Air 2.7-2.8 FGU P194-199 Film
4	1	MID-TERM TEST - Safety & Human Factors and Airframes & Engines	
5	1	Ground Handling, Refueling & Weight and Balance	FGU P185-191
6	1	Dangerous Goods	IATA Regs.
7	1	Airmanship & Safety	FGU P201-209 P222-225
8	1	TEST	