

COURSE NAME: AERONAUTICS 4

CODE NO. AVT200-4

TOTAL CREDIT HOURS

PREREQUISITE(S): Will hold a Private Pilot Licence and have satisfactorily completed semester three academics.

I. PHILOSOPHY/GOALS: To teach the theory and practice of Aviation Technology, with emphasis in study toward the Commercial Pilot Licence Standard and attain a Grade of 70% or better overall and a 60% pass of all segments of the M.O.T. written Commercial Pilot Examination.

II. STUDENT PERFORMANCE OBJECTIVES:

Upon successful completion of this course the student will:

- 1) Be admitted to the fifth semester.
- 2)
- 3)
- 4)

III. TOPICS TO BE COVERED:

16 weeks - 4 periods per week
13 periods Navigation
16 Periods Meteorology
6 periods Theory of Flight
16 periods Air Regulations
6 periods Air Frames and Engines
4 periods Radio Aids
3 periods Aircraft Systems (C172)

Total 64 periods.

IV. LEARNING ACTIVITIES

NAVIGATION

METEOROLOGY

RADIO AIDS

THEORY OF FLIGHT

AIR REGULATIONS
AIR TRAFFIC RULES &
REGULATIONS

AIRFRAMES AND ENGINES

AIRCRAFT HANDLING AND
OPERATING SYSTEMS
(CESSNA 172)

REQUIRED RESOURCES

From the Ground Up -
A. F. MacDonald
Study and Reference Guide
for Commercial Pilots -
Transport Canada
Aeronautical Information
Publication (A.I.P.) - Canada
Flying Training Manual -
Transport Canada
Canada Flight Supplement GPH
205 - Transport Canada

Low Altitude Enroute Charts GPH
206 - Transport Canada

Charts - World Aeronautical
Chart 1:500,000
- Air 5000 Series
1:500,000

Down But Not Out
Air Command Weather Manual
(TP9352E)
Air Command Weather Supplement
(TP9353E)
Pilots Operating Handbook
Cessna 172N 1977

NAVIGATION

<u>TOPIC NO.</u>	<u>SUGGESTED PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	2	Review of Definition Form of the Earth Time (Mean and Apparent) Direction True and Magnetic	FGU-Air Navi- gation S.C. Precis
2	1	Earth's Magnetism Compass Errors Airspeed and Altitude Indicators	FGU-Air Navi- gation
3	1	Maps and Charts Types of Charts	FGU-Air Navi- gation S.C. Precis
4	1	The Triangle of Velocities	FGU-Air Navi- gation S.C. Precis
Test	1	Variation of Deviation	
5	3	CR3 Computer for Commercial Navigation	CR Computer
6	1	Problem Work Sheet Pressure Pattern Flying	
EXAM	1	SEMESTER 4 FINAL EXAM	

METEOROLOGY

<u>TOPIC NO.</u>	<u>SUGGESTED PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1,2,3	1	Atmosphere Clouds Pressure	Weather ways - Ch 2
4,5	1	Winds Moisture & Temperature	
6,7	1	Stability & Instability Air Masses	
8	1	The Structure of Fronts	
TEST	1	TEST ON REVIEW WORK COVERED TO DATE.	
REVIEW	1	TEST REVIEW	Weather Ways - Ch 1- 9
9	1	Weather at the Cold Front	Weather Ways - Ch 10 Supplement to Weather Ways - Ch 10
10	1	Weather at the Warm Front	Air Command Weather
11,12	1	Weather at Trowals and Upper Fronts Cloud, Precipitation and Fog	Air Command Supplement
12,13	1	Clouds, Precipitation and Fog Visibility	
14,15	1	Ice Accretion Thunderstorms	
16,17,18	1	Turbulence Precipitation Static Mountain Waves	
EXERCISE	1	Maps, Forecasts, Observations	
TEST	1	SEMESTER 5 FINAL	

RADIO AIDS

<u>TOPIC NO.</u>	<u>SUGGESTED PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	3	VOR Operation & Use	From the Ground Up
2	3	ADF Operation & Use	From the Ground Up
3	1	VFR Charts	DOT VFR Charts
4	1	Review	
5	1	SEMESTER FINAL EXAM	

THEORY OF FLIGHT

<u>TOPIC NO.</u>	<u>SUGGESTED PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1,2	1	Atmosphere, Pressure and Airports Lift, Drag, Thrust & Weight	FGU-Theory of Flight
3,4	2	The Center of Gravity and Weight and Balance, Part 1 and 2 - Forces acting on an airplane during flight	FGU-Theory of Flight
5,6	2	Airspeed limitations and Wing tip vortices	FGU-Theory of Flight
7	1	SEMESTER FINAL EXAM	

Air Regulations, Air Traffic Rules and Regulations

<u>TOPIC NO.</u>	<u>SUGGESTED PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1,2	5	Air Regulations and Review	Air Regulations and Aeronautics Act Pt. 1 - VIII Air Navigation Orders Series I, II, III, IV, V A.I.P. Canada
3,4	3	General, Aerodromes, Communications	A.I.P. Canada - Gen, Com VFR Chart Supplement
5,6	3	Rules of the Air, Air Traffic Services Search and Rescue	A.I.P. Canada - RAC, SAR
TEST	1	SEMESTER FINAL EXAM	

AIRCRAFT HANDLING & OPERATING SYSTEM
(CESSNA 172)

<u>TOPIC NO.</u>	<u>SUGGESTED PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	3	Cessna 172 Operating Procedures	Cessna 1977 Pilots Operating Handbook
		Cessna 172 Check List	Sault College Cessna 150, 152, 172 Check List Handout
		Cessna 172 Speed Chart	Sault College Cessna 150, 152, 172 Speed Chart Handout

TEST

FINAL SYSTEMS WRITTEN EXAMINATION
- CESSNA 172

SURVIVAL TECHNIQUES

<u>TOPIC NO.</u>	<u>SUGGESTED PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	2	Survival Techniques	Down But Not Out Defensive Flying, Section 3 Search & Rescue Atlantic Area Pg. 19 - 28 Cold Injuries (Handout)
2	24 hrs.	Practical Survival Field Trips	

RADIO AIDS

<u>TOPIC NO.</u>	<u>SUGGESTED PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	1	VOR Operation & Use	From the Ground Up
2	2	ADF Operation & Use	From the Ground Up
3	1	VFR Charts	DOT VFR Charts
4	1	Review	
5	1	SEMESTER FINAL	
6	5	IFR Charts	DOT Enroute Low Altitude Charts
7	2	The Flight Supplement	DOT - Flight Supplement
8	2	Review	
9	1	Final Semester Exam	
10	1	DOT Commercial Pilot Examination	

AIR FRAMES AND ENGINES

<u>TOPIC NO.</u>	<u>SUGGESTED PERIODS</u>	<u>TOPIC DESCRIPTION</u>	<u>REFERENCE</u>
1	3	Air Frame	F.G.U. Air Frame
		MID-TERM EXAM	
2	3	Aero Engines	F.G.U. Aero Engines

FINAL AIR FRAME AND ENGINES EXAM

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V. EVALUATION METHODS: (INCLUDES ASSIGNMENTS, ATTENDANCE REQUIREMENTS, ETC.)

The student will be assessed by test following a block of subject matter, with a mid-term final examination and a semester final. Credit for block tests and mid-term will be weighted and applied to the final semester grade.

These tests will be in addition to the Transport Canada Commercial Examination (minimum 70% and a pass in all segments).

FLYING:

- assessment is continuous, based on instructor evaluation and documented by progress books
- periodic progress checks with faculty to determine suitability to continue
- private or commercial pilot flight test or progress check at the end of the semester

ACADEMIC:

- all AVT200 topics are grouped together. Test results are totalled and reduced to a percentage for mid-term and final marks. Each topic is weighted with the greatest emphasis placed on navigation and meteorology and air regulations. Tests are normally conducted periodically at the end of each block of instruction with approximately 50% of the grade based on tests and 50% on final. 50% of the value of the end of semester total will be derived from mid-term grades.

FINAL TERM:

- Nav 100, Met 100, Radio Aids 50, T of F 50, Air Regs 100, A & E 50, A/C systems 50 = 500 marks reduced to a percentage

GRADE:

A+ - 93 - 100%
A - 87 - 92%
B - 80 - 86%
C - 70 - 79%
I - Below 70 (Mid-Term Only)
X - Below 70 (final extenuating circumstances only)
R - Below 70%

- In the event of a failure in one AVT ^{topic} subject, the highest grade achievable will be a "C". Failure of two or more AVT ^{topics} subjects will result in an "R" Grade.
- A 2.8 G.P.A. is considered minimum acceptable and student progress will be reviewed if below that grade.
- D.O.T. exams are not included in college grades although minimum of 70% as well as a pass of all segments is required to continue on course. An "R" grade will be awarded for AVT in the event of a failure.
- "R" grades in any subject at the end of a semester will result in termination from the program.
- Attendance is mandatory for all Aviation classes.
- Although attitude, co-operation, etc., are not graded, students may be terminated based on their performance in this area. These attributes are also considered in the selection of the Air Canada Award and other scholarships.
- Firm dates have not been established for tests because a good deal of instruction takes place on bad weather days.

VI. REQUIRED STUDENT RESOURCES

As per book list.

VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY:

Book Section (TITLE, PUBLISHER, EDITION, DATE, LIBRARY CALL NUMBER IF APPLICABLE - SEE ATTACHED EXAMPLE)
Periodical Section (MAGAZINES, ARTICLES)

Audiovisual Section (FILMS, FILMSTRIPS, TRANSPARENCIES)

VIII. SPECIAL NOTES

Students with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.