

I. COURSE DESCRIPTION:

This course covers most of the theory required for the Private pilot, as well as provides the basic knowledge required for meteorology in the second and third years of the Aviation Program.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Understand the foundation theory required for further exploration of Meteorology.

Potential Elements of the Performance:

Moisture in the atmosphere, heating and cooling the atmosphere, stability, pressure and circulation, air masses

2. Understand the structure of Fronts

Potential Elements of the Performance:

Warm, cold and quasi-stationary fronts, frontal waves and occlusions, discontinuities across fronts

3. Understand the formation of Clouds and Precipitation

Potential Elements of the Performance:

Formation mechanisms of clouds and precipitation, classification of clouds, how clouds and precipitation affect flight

4. Understand Aircraft Icing

Potential Elements of the Performance:

Formation of airframe ice, conditions at lead to icing, aerodynamic factors, effects of airframe ice

5. Understand the factors that affect flight visibility

Potential Elements of the Performance:

Measuring visibility, Lighthometers, Precipitation, formation of fog and fog types, white out, calculate the distance to the visible horizon

6. Understand the types of boundary layer winds and turbulence

Potential Elements of the Performance:

Classification and effect of wind shear, types of winds, wake turbulence

7. Understand Altimetry

Potential Elements of the Performance:

The altimeter, the ISA, altimeter setting, drift and altimeter error, terrain clearance, combined errors, density altitude

8. Understand the formation of Mountain Waves

Potential Elements of the Performance:

formation, cloud types, mountain wave turbulence, effect on aircraft

9. Understand the formation and hazards of Thunderstorms

Potential Elements of the Performance:

the three stages, gust front, downdraft, hail, lightning, severe storm structure, classification, hazards

10. Understand and apply the theory of meteorology required for the completion the meteorology portion of the Transport Canada Private Pilot exam

Potential Elements of the Performance:

All elements taken this semester is in preparation for the Private Pilot written exam and also applies to Commercial and IFR level meteorology

Note: Any of the topics above not covered in AVT111 will be covered in AVT121 in semester 2.

III. TOPICS:

1. Foundations of meteorology
2. Structure of Fronts
3. Clouds and Precipitation
4. Aircraft Icing
5. Visibility
6. Boundary layer winds and turbulence
7. Altimetry
8. Mountain Waves
9. Thunderstorms
10. Preparation for Transport Canada Exams

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Air Command Weather Manual
 Air Command Weather Workbook
 Aeronautical Information Manual (AIM)
 Access to the internet is an asset

V. EVALUATION PROCESS/GRADING SYSTEM:

The student will be assessed by a combination of quizzes, tests and a final exam. Weighting of each will be as follows: 20% for quizzes, 30% for the mid-term test and 50% for the final exam. A minimum mark of 70% is required to pass the course. Make-up tests are not permitted except in accordance with section VI of this outline.

- Quizzes will be given without prior notice. If a student is absent for a quiz without excuse, the student will get 0% on the quiz. There will be no make-ups of missed quizzes when missed due to unexcused absence.
- If it is necessary to write a second final exam in order to pass the course, the highest grade achievable will be a "C". (See make-up policy in section VI)
- Students may request a deferment of a test for compassionate reasons. Compassionate Grounds for deferment will include but not be limited to death of an immediate family member, personal illness, or recent diagnosis of a serious illness of a family member. **Make-ups will not be permitted after the fact for compassionate reasons.**
- **"F" grades in any subject at the end of a semester will result in termination from the Aviation program.**
- Dates of tests will be announced at least 1 week in advance.

A classroom code of conduct can be found in the SOP General section, and will be adhered to.

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	assigned if a make-up exam was required to complete the course	0.00
F (Fail)	69% and below	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	

NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

VI. SPECIAL NOTES:

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session. It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivals may not be granted admission to the room.>

- Unexcused absences will result in 2% deduction of the final mark for each occurrence, arriving for class late will result in a 1% deduction of the final mark for each occurrence, and violations of the dress code will result in a 1% deduction of the final mark for each occurrence. Refer to the SOP GEN section for dress code policies and for policy regarding absence from class.

Make-up Policy

- No make-ups on tests occurring prior to final exam.
- No make-ups on quizzes.
- If the final grade achieved for this course is less than 70%, a second final exam may be written at the discretion of the professor for this course. The grading system will be modified as follows: the first exam attempt will be weighted at 25% rather than 50% of the final mark, and the make-up exam will be weighted at 25% of the final mark. The minimum mark for the course is still 70% or better after the grade has been re-calculated to include the make-up exam.
- In the event that a second final exam is required, the highest achievable overall grade for this course will be a C
- Any student that requires 90% or greater on a make-up exam to pass the course will not be allowed to write a make-up exam.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.