COURSE OUTLINE: AVF111 - METEOROLOGY I & II

Prepared: Louis St Pierre
Approved: Greg Mapp, Chair, Aviation Technology - Flight

Course Code: Title	AVF111: METEOROLOGY I & II
Program Number: Name	4061: AVIATION TECHNOLOGY
Department:	AVIATION TECHNOLOGY
Semesters/Terms:	19F
Course Description:	This course prepares pilots-in-training for writing the meteorology section of the Transport Canada Private Pilot written exam as well as enabling them to interpret weather reports and forecasts in preparation for flight. To provide a solid foundation for making good weather decisions, meteorology theory is covered in detail. This course also provides the foundation for meteorology in second and third year of the Aviation Program
Total Credits:	2
Hours/Week:	2
Total Hours:	30
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
This course is a pre-requisite for:	AFT120, AVF122, AVT123, ELR104
Essential Employability Skills (EES) addressed in this course:	EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 11 Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Passing Grade: 70%, B
Other Course Evaluation & Assessment Requirements:	In order to be excused from class due to illness or other unforeseen circumstance, students must call the professor at extension 2666 and leave a message prior to the start of class. An email is also acceptable, but must be sent prior to the start of class. 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. Dates of tests will be announced at least 1 week in advance. If a faculty member determines that a student is at risk of not being successful in their academic pursuits and has exhausted all strategies available to faculty, student contact information may be confidentially provided to Student Services in an effort to offer even more assistance with options for success. Any student wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.
Books and Required	Aeronautical Information Manual (TC AIM - TP 14371) by Transport Canada

Resources:

Publisher: Transport Canada
ISBN: none
https://www.tc.gc.ca/eng/civilaviation/publications/tp14371-menu-3092.htm

Royal Canadian Air Force Weather Manual by 1 Canadian Air Division
Publisher: 17 Wint Publishing Office
ISBN: 978-0-660-20260-0
Library and Archives Canada Cataloguing in Publication

Royal Canadian Air Force Weather Workbook

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
Understand the foundation theory required for further exploration of Meteorology.	Moisture in the atmosphere, heating and cooling the atmosphere, stability, pressure and circulation, air masses
Course Outcome 2	**Learning Objectives for Course Outcome 2**
Understand the structure of Fronts	Warm, cold and quasi-stationary fronts, frontal waves and occlusions, discontinuities across fronts
Course Outcome 3	**Learning Objectives for Course Outcome 3**
Understand the formation of Clouds and Precipitation	Formation mechanisms of clouds and precipitation, classification of clouds, how clouds and precipitation affect flight
Course Outcome 4	**Learning Objectives for Course Outcome 4**
Understand Aircraft Icing	Formation of airframe ice, conditions that lead to icing, aerodynamic factors, effects of airframe ice
Course Outcome 5	**Learning Objectives for Course Outcome 5**
Understand the factors that affect flight visibility	Measuring visibility, Lithometers, Precipitation, formation of fog and fog types, white out, calculate the distance to the visible horizon
Course Outcome 6	**Learning Objectives for Course Outcome 6**
Understand the types of boundary layer winds and turbulence	Classification and effect of wind shear, types of winds, wake turbulence
Course Outcome 7	**Learning Objectives for Course Outcome 7**
Understand Altimetry	The altimeter, the ISA, altimeter setting, drift and altimeter error, terrain clearance, combined errors, density altitude
Course Outcome 8	**Learning Objectives for Course Outcome 8**
Understand the formation of Mountain Waves	Formation, cloud types, mountain wave turbulence, effect on aircraft
Course Outcome 9	**Learning Objectives for Course Outcome 9**
Understand the formation and hazards of Thunderstorms	The three stages, gust front, downdraft, hail, lightning, severe storm structure, classification, hazards
Course Outcome 10	**Learning Objectives for Course Outcome 10**
Interpret Aviation Weather	Graphical Area Forecasts (GFA), Terminal Area Forecasts

	Forecasts	(TAF), Upper wind and temperature forecasts (FD), Air Meteorological Advisory (AIRMET), Significant In-Flight Weather Warning Messages (SIGMET)
	Course Outcome 11	**Learning Objectives for Course Outcome 11**
	Interpret Aviation Weather Reports	Aviation Routine Weather Report (METAR), Pilot Reports (PIREP)
	Course Outcome 12	**Learning Objectives for Course Outcome 12**
	Interpret Weather Maps	Surface Analysis charts, Upper air charts

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Final exam	50%
Tests	50%

Date: August 1, 2019

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.