

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



**SAULT
COLLEGE**

COURSE OUTLINE

COURSE TITLE: Introduction to Aviation Fundamentals

CODE NO. : AVF100-3 **SEMESTER:** 1

PROGRAM: General Arts and Science (1 year) No. 1105

AUTHOR: Ben Mears

DATE: Feb 14, 2012 **PREVIOUS OUTLINE DATED:** N/A

APPROVED: Steven A. Hause

	_____ CHAIR	_____ DATE
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TOTAL CREDITS: 3

PREREQUISITE(S): N/A

HOURS/WEEK: 3

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I. COURSE DESCRIPTION:

This course provides an introductory look at four important subject matter areas as identified by Transport Canada in preparation for the Private Pilot ground school. This includes classes on Air Law, Introduction to Meteorology, Navigation and Aviation General Knowledge. The student will explore fundamentals such as the Canadian Aviation Regulations (CARs), basic weather terminology and classification, aviation charts and navigation basics, aircraft classification and components, engines and instruments, aircraft performance and basic human factors.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Understand the structure of the Canadian Air Regulations, Airspace and Airport Procedures. Become familiar with the Canadian Aviation Regulations online. Explore CARs Part IV Personnel Licensing and Training.

Topics:

- Canadian Airspace Structure and Classification.
 - Standard Pressure and Altimeter-Setting Regions.
 - Northern and Southern Domestic Airspace.
 - Controlled and Un-Controlled Airspace.
 - Control Zones, Terminal Control Areas.
 - Airways, Air Routes and Control Area Extensions.
 - Controlled and Un-Controlled Airport Procedures.
 - Transport Canada website and CARs
2. Comprehend and apply basic theory of meteorology in preparation for more in-depth study required to successfully complete the meteorology portion of the Transport Canada Private Pilot written examination.

Topics:

- The Atmosphere and its components.
- Air Temperature, Pressure and Density.
- Air Masses and Frontal Systems
- Cloud Formation and Classification
- VFR weather minima

3. Understand the foundation elements required for basic navigation. Identify and interpret Aeronautical Charts and Publications and prepare a VFR navigation chart for dead reckoning navigation

Topics:

- Latitude and Longitude
 - True north, magnetic north, variation and magnetic dip
 - Great circle routes and rhumb lines.
 - VNC, VTA and LO charts
 - Canada Flight Supplement
 - Basic map preparation and trip planning.
 - Basic dead reckoning problems
4. Understand and appreciate flight theory fundamentals as well as aircraft structures and reciprocating engine theory as it pertains to aircraft performance.

Topics:

- Aircraft configuration based on mission
 - Basic airfoil terminology
 - Basic lift and drag theory.
 - Range and Endurance concepts
 - Airframe construction theory and techniques
 - Piston engine types and applications
 - Piston engine theory and the 4-stroke cycle
 - Propeller types and operation
 - Basic aircraft systems
5. Appreciate the necessity to be aware of the impact of human factors on flight operations.

Topics:

- Basic flight physiology concerns
- IMSAFE checklist
- Hazardous Attitudes
- Pilot Decision Making basics.

III. REQUIRED RESOURCES/TEXTS/MATERIALS:

1. Study and Reference Guide, Private Pilot Licence - Aeroplane TP12880E
2. Aeronautical Information Manual (AIM) Canada
3. From the Ground Up - A. F. MacDonald
4. Canada Flight Supplement - GPH 205

IV. EVALUATION PROCESS/GRADING SYSTEM:

- The student will be assessed by five unit tests, each worth 20% of the final mark.
- A minimum mark of 50% is required to pass the course.
- 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.
- 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:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
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	

V. SPECIAL NOTES:

Make-up Policy

- Make-up tests will only be done under a Learning Plan.
- Any student that requires 100% or greater on a make-up test to pass the course will not be allowed to write a make-up test.

VI. COURSE OUTLINE ADDENDUM

Disability Services:

If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Disability Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Communication:

The College considers *LMS* as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the *Learning Management System* communication tool.

Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Code of Conduct*. A professor/instructor may assign a sanction as defined below, or make recommendations to the Academic Chair for disposition of the matter. The professor/instructor may (i) issue a verbal reprimand, (ii) make an assignment of a lower grade with explanation, (iii) require additional academic assignments and issue a lower grade upon completion to the maximum grade “C”, (iv) make an automatic assignment of a failing grade, (v) recommend to the Chair dismissal from the course with the assignment of a failing grade. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Electronic Devices in the Classroom:

NOTE: In accordance with the Sault College Student Code of Conduct Article 2, Section 22, all students are requested to turn OFF their cellular phones (including Blackberry and iPhone devices) prior to class commencing. Failure to do so may result in the student being dismissed from the lesson. Texting, e-mailing and social networking are all distractions that are not commensurate with the learning of new material or participation in class discussions. Exceptions may be granted with the professor’s prior consent.

Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.