

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**SAULT  
COLLEGE**

**COURSE OUTLINE**

**COURSE TITLE:** Safety and Human Factors  
**CODE NO. :** AVT378-3 **SEMESTER:** Seven  
**PROGRAM:** Aviation Technology (Flight)  
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**DATE:** Jan 2017 **PREVIOUS OUTLINE DATED:** Jan 2016

**APPROVED:**

**Greg Mapp**  
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**CHAIR**

**Jan 2017**  
**DATE**

**TOTAL CREDITS:** 4

**PREREQUISITE(S):** AVT248

**HOURS/WEEK:** 4

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*For additional information, please contact Greg Mapp, Director of Aviation*  
*705 759-2554, Ext 2865*

## I. COURSE DESCRIPTION:

This course will focus on safety defense strategies, which can, if applied, reduce the likelihood of you being involved in an incident or an accident. These safety defense strategies will be developed from a personal level, a multi crew level and an organizational level.

The Instructor may change or omit some sections of this outline as needed.

## II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Develop personal defense strategies to reduce the occurrence of unsafe acts.

### Potential Elements of the Performance:

- Investigate an accident to identify failures in both the pre-condition and productive activity levels (Reason's model).
- Develop personal strategies which can help you avoid the same pitfall.
- Explain how you intend to apply your personal defense strategy.

2. Apply the process of Single Pilot Resource Management (SRM)

### Potential Elements of the Performance:

- Definition and goal of Single Pilot Resource Management (SRM)
- Application of the 5 concepts
- The "5P" check

3. Assess his or her behaviour markings indicating the application of single pilot human.

### Potential Elements of the Performance:

- Effective lookout.
- Maintains situation awareness.
- Assess situations and make decisions.
- Sets priorities and manage tasks.
- Maintains effective communications and interpersonal relationships.

4. Explain the rationale and process in applying threat and error management.

### Potential Elements of the Performance:

- Definitions.

- Types of threats.
  - Types of errors.
  - Handling threats, errors and undesired aircraft states.
5. Effectively participate on a team or in a crew.  
Potential Elements of the Performance:
- Communicate effectively to make decisions and manage resources.
  - Provide leadership and followership.
  - Establish priorities to manage workload.
  - Be aware of how decisions related to problem solving fit in the big picture.
  - Resolve conflicts.
  - Provide constructive critiques.
  - Manage threats to reduce or trap errors.
6. Explain industry training initiatives and strategies to reduce accidents.  
Potential Elements of the Performance:
- The industries safety record - where we are now; the improvements made over the past twenty years.
  - The why, where and how to reduce the likelihood of the major killers in aviation today (Loss of control) (LOC), Controlled Flight into Terrain (CFIT), Approach and Landing Accident Reduction (ALAR).

### III. TOPICS:

1. Personal Defense
2. Single Pilot Resource Management and Human Factors
3. Threat and Error Management
4. Terms and Team Building
5. Communications
6. Situational Awareness
7. Leadership/Fellowship
8. Interpersonal Skills
9. Safety Management Systems
10. Loss of Control
11. Controlled Flight into Terrain
12. Approach and Landing Accident Reduction
13. Two Crew Standard Operating Procedures

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

- 1) Human Factors for Aviation - Advanced Handbook / Published by Transport Canada ISBN # 0-660-16656-9
- 2) Internet Access

**ADDITIONAL RESOURCES/TEXTS/MATERIALS:**

Your Sault College Library is an excellent resource!  
A.I.M. – Aeronautical Information Manual

**Web Links:**

<http://www.tc.gc.ca/eng/civilaviation/opssvs/aviationsafety-menu.htm>

<http://www.faa.gov/pilots/safety/pilotsafetybrochures/>

<http://flightsafety.org/>

<http://www.airforce.forces.gc.ca/dfs-dsv/index-eng.asp>

<http://www.casa.gov.au/scripts/nc.dll?WCMS:HOMEPAGE::pc=HOME>

**V. EVALUATION PROCESS/GRADING SYSTEM:**

The student will be assessed by a combination of attendance and department, quizzes, tests and a final exam. Weighting of each will be as follows: 30% for quizzes, 30% for all tests prior to the final exam and 40% for the final exam. In order to pass the course, A minimum grade of B must be achieved, otherwise the course must be repeated in accordance with the Aviation Standard Operating Procedures. Make-up tests are not permitted except in accordance with section VI of this outline.

- 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 1.3 for dress code policies and SOP GEN 1.6.7 for policy regarding absence from classes
- Quizzes will be given without prior notice.
- 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.**
- Although attitude, co-operation, etc., are not graded, students may be terminated based on their performance in this area (see section VI). These attributes are also considered in the selection of the Air Canada Award and other scholarships.
- 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:

<b>Grade</b>	<b><u>Definition</u></b>	<b><i>Grade Point Equivalent</i></b>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 – 69.4%	1.00
D	50 – 59%	0.00
F (Fail)	49% 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.

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.

## VI. SPECIAL NOTES:

### 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.

### Prior Learning Assessment:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.

Substitute course information is available in the Registrar's office.

### Accessibility 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 Accessibility Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

### Communication:

The College considers ***Desire2Learn (D2L)*** 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 this Learning Management System (LMS) communication tool.

**Plagiarism:**

Students should refer to the definition of “academic dishonesty” in *Student Code of Conduct*. Students who engage in academic dishonesty will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. 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.

**Tuition Default:**

Students who have defaulted on the payment of tuition (tuition has not been paid in full, payments were not deferred or payment plan not honoured) as of the first week of *<choose November, March, or June>* will be removed from placement and clinical activities due to liability issues. This may result in loss of mandatory hours or incomplete course work. Sault College will not be responsible for incomplete hours or outcomes that are not achieved or any other academic requirement not met as of the result of tuition default. Students are encouraged to communicate with Financial Services with regard to the status of their tuition prior to this deadline to ensure that their financial status does not interfere with academic progress.

**Student Portal:**

The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. Go to <https://my.saultcollege.ca>.

**Electronic Devices in the Classroom:**

**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.**

**VII. COURSE OUTLINE ADDENDUM:**

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