

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY
SAULT STE. MARIE, ONTARIO**



Sault College

COURSE OUTLINE

COURSE TITLE: Aerodynamics

CODE NO. : AVT364 (Commercial) **SEMESTER:** Six

PROGRAM: Aviation Technology (Flight)

AUTHOR: John Portas

DATE: Aug 28, 2003 **PREVIOUS OUTLINE DATED:** new

APPROVED:

	_____	_____
	DEAN	DATE

TOTAL CREDITS: 1

PREREQUISITE(S): N/A

HOUR/WEEK: 1

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For additional information, please contact Colin Kirkwood, Dean
School of Technology, Skilled Trades & Natural Resources
(705) 759-2554, Ext.688

I. COURSE DESCRIPTION:

This course is an introduction to aerospace engineering from both the technological and historical points of view. It is designed to give pilots a more comprehensive and a wider perspective into the technical maturity of their profession

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

- 1) Understand advanced aerodynamic concepts as they relate to the Commercial Pilot Level and beyond.
- 2) Feel comfortable in describing and applying a broad base knowledge of theory, formulas and graphs to many performance situations.

III. TOPICS:

1. Fundamental Gas Laws
2. The Standard Atmosphere
3. Basic Aerodynamics And Thermodynamics
4. Aerodynamic Shapes
5. Elements Of Airplane Performance
6. Principles Of Stability And Control
7. Space Flight (Astronautics)
8. Propulsion
9. Flight Vehicles Structures And Materials
10. Hypersonic Flight

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Introduction to Flight - Fourth Edition – John D. Anderson Jr. – Professor Emeritus, University of Maryland

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: 10% for attendance and department, 10% for quizzes, 40 % for all tests prior to the final exam and 40% for the final exam. A minimum mark of 70% is required to pass the course. Re-writes are not permitted except in accordance with section VI of this outline.

- When attendance is taken, the attendance mark will be awarded as follows: unexcused absences will result in 2% deduction, arriving for class late will result in a 1% deduction, and violations of the dress code will result in a 1% deduction up to a maximum of the attendance grade. In the event of illness, a telephone call must be made prior to the beginning of the class (a voice mail message is acceptable). Examples of dress code violations will include, but not limited to, not shaving, not wearing a tie, etc.
- Quizzes may be given without prior notice.
- If it is necessary to re-write the final exam in order to pass the course, the highest grade achievable will be a "C". (See re-write 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. **Rewrites will not be permitted after the fact for compassionate reasons.**
- **"R" grades in any subject at the end of a semester will result in termination from the Aviation program. Re-writes in aviation subjects are not permitted except as provided in the re-write policy below.**
- Attendance is mandatory for all Aviation classes unless approval is granted in advance. In the case of illness, a phone call , voice mail or e-mail message is expected.
- If a student expects to be late or will be delayed for any reason, every attempt should be made to contact the professor, or leave a message on voice mail or e-mail.
- 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.

The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	Grade Point
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		<u>Equivalent</u>
A+	93 - 100%	4.00
A	87 - 92%	3.75
B	80 - 86%	3.00
C	70 - 79%	2.00
F (Fail)	69% or below	0.00
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.	

VI. SPECIAL NOTES:

Attitude and Conduct

Attitude plays an important role in your ability to exercise good judgement. Although attitude is not being graded, it affects your ability to learn as well as your safety as a student and future as a professional pilot. Students who display a strong tendency towards any of the five hazardous attitudes pose a grave risk to themselves and others. For this reason these students will be counseled and will be put on a behavioural contract. If counseling is ineffective, then the student will be withdrawn from the program.

The five hazardous attitudes are identified as Anti-authority, Impulsivity, Invulnerability, Machismo, and Resignation. These hazardous attitudes are described in “Human Factors for Aviation – Basic Handbook” on pages 151 and 152.

Re-Write Policy

- No re-writes on tests occurring prior to final exams.
- No re-writes on any Transport Canada exam.

- 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 second exam will be averaged with the first exam to determine the resulting exam mark, and the final grade will be then calculated.
- In the event that a second final exam is required, the highest achievable overall grade for this course will be a C

Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 so that support services can be arranged for you.

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 Rights and Responsibilities*. 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.

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.

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

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.