

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



Sault College

**COURSE OUTLINE**

**COURSE TITLE:** Navigation and Instrument Procedures

**CODE NO. :** AVT3690-3

**SEMESTER:** Six

**PROGRAM:** Aviation Technology (Flight)

**AUTHOR:** Earl Turner

**DATE:** 01-Aug-17

**PREVIOUS OUTLINE**

new

**DATED:**

**APPROVED:**

\_\_\_\_\_  
**DATE**

\_\_\_\_\_  
**DEAN**

**TOTAL** 3

**CREDITS:**

**PREREQUISITE(S):** AVT2590

**HOUR/WEEK:** 3

**Copyright ©2001 The Sault College of Applied Arts & Technology**

*Reproduction of this document by any means, in whole or in part, without prior written permission of Sault College of Applied Arts & Technology is prohibited.*

*For additional information, please contact The Dean*

*School of School of Technology, Engineering and Technical Trades*

## I. COURSE DESCRIPTION:

This course provides for you to incorporate the knowledge acquired from AVT259 into practical navigation exercises required for IFR flight. Included will be the preparatory ground instruction for all phases of instrument flying as well as a review of basic instrument flying, instrumentation, navigation systems and physiological factors.

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

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

1. Plan a navigation trip using instrument flight rules.  
Potential Elements of the Performance:
  - Obtain and interpret weather, NOTAMS and PIREPS which are required for the trip
  - Apply the weather information to ensure you meet or exceed the minimums as set in the regulations.
  - Have a clear understanding of the rules and their application for each phase of the trip.
  - Utilization of all publications required for the trip. This includes the Canada Air Pilot (CAP), Low Enroute Charts (LO), Canada Flight Supplement (CFS) and the Aeronautical Information Publication (AIP).
  
2. 1) Depart, navigate enroute, hold, approach and execute a missed approach all using instrument flight rules.  
Potential Elements of the Performance:
  - Departure procedures including taxi, clearances and take off criteria
  - Enroute procedures including position reports, IFR altitudes, climbs , descents and clearance limits
  - Holding procedures including types of holds, entry procedures, timing, shuttle holds and speed limitations.
  - Arrival procedures including descent, standard arrivals, profile descents, control transfers, types of approaches, approach clearance and approach.
  - Missed approach procedures including missed approach point or decision height, holds, clearances and alternate airports.
  
3. 2) Respond to or anticipate physiological factors which may affect flight safety in instrument conditions.  
Potential Elements of the Performance:
  - Effects of altitude, symptoms and prevention of hypoxia,

- hyperventilation and the treatment of hypoxia and hyperventilation
- Visual and vestibular illusions, when they occur and how to avoid them
- Effect of drugs and alcohol on flight performance.
- The need for proper rest and the effects of fatigue and stress on a pilot's performance

### **III. TOPICS:**

1. Radio Aids - VOR, ADF, RMI, DME, GPS - for navigation and approaches.
2. Meteorology - it's practical application for IFR navigation
3. Departure - weather requirements, standard instrument departures, rules
4. Enroute - altitudes, position reporting, in range checks, descent planning
5. Holds - types, entry procedures and rules.
6. Approaches - types, how to fly them, rules to follow.
7. Missed approaches - alternate minima, rules.
8. Flight instruments, operation and errors
9. Flight physiology - effects of altitude, illusions
10. Emergency scenarios

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

- 1) Instrument Procedures Manual  
Aeronautical Publishing Services  
Transport Canada
- 2) A.I.P.
- 3) Jeppeson Computer
- 4) Enroute Low Altitude - LO 3&4
- 5) Canada Air pilot - CAP 4
- 6) Terminal Area Charts
- 7) Canada Flight Supplement

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

Enter description of how they will be graded

The student will be assessed by a combination of attendance and deportment, quizzes, tests, a qualification exam and the Transport Canada INRAT exam. Weighting of each will be as follows: 10% for attendance and deportment, 10% for quizzes, 20 % for all tests prior to the qualification exam, 30% for the qualification exam and 30% for the Transport Canada INRAT exam. A minimum mark of 70% is required to pass the course, as well as a minimum mark of 70% on the qualification exam and 70% on the Transport Canada INRAT exam. 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 qualification 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>	<u>Grade Point Equivalent</u>
A+	93 - 100%	4.00
A	87 - 92%	3.75
B	80 - 86%	3.00
C	70 - 79%	2.00
R (Repeat)	70% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field placement or non-graded subject areas.	
U	Unsatisfactory achievement in field placement or non-graded subject areas.	
X	A temporary grade. This is used in limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see <i>Policies &amp; Procedures Manual – Deferred Grades and Make-up</i> ).	
NR	Grade not reported to Registrar's office. This is used to	

facilitate transcript preparation when, for extenuating circumstances, it has not been possible for the faculty member to report grades.

## **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 or quizzes prior to the qualification exam.
- No re-writes on any Transport Canada exam.
- The qualification exam may be re-written provided the overall semester average to that point is 70% or greater. The re-written qualification exam will be averaged with the failed qualification exam to determine the resulting mark, which must be 70%, or above to qualify to write Transport Canada's INRAT exam.
- In the event that a second qualification 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.

