

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



**SAULT
COLLEGE**

COURSE OUTLINE

COURSE TITLE: Navigation and Instrument Procedures
CODE NO. : AVT369-3 **SEMESTER:** Six
PROGRAM: Aviation Technology (Flight)
AUTHOR: Earl Turner
DATE: July 4, 2016 **PREVIOUS OUTLINE DATED:** June, 2015
APPROVED: _____ *Greg Mapp* **DATE** *August 22, 2016*
TOTAL CREDITS: 3
PREREQUISITE(S): AVF 115, AVF 245, AVT252, AVT259, AFT240
HOURS/WEEK: 3

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I. COURSE DESCRIPTION:

This course provides for you to incorporate the knowledge acquired from AVT259 and AVT252 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. 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. 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:

- PA44
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.M.
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:

The student will be assessed by a combination of attendance and department, quizzes, tests and the final exam. Weighting of each will be as follows: 20% for quizzes, 30 % for all tests prior to the final exam, and 50% for the final exam. A minimum mark of 70% (B) is required to pass the course. Students enrolled in this course are not permitted to write the Transport Canada INRAT without having first passed the qualification exam.

- 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.
- Students may request a deferment of a test or exam or exam 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.**
- A classroom code of conduct can be found in the SOP General section, and will be adhered to.
- Attendance is mandatory for all Aviation classes unless approval is granted. 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:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	
A	80 – 89%	4.00
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00
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 judgment. 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, students exhibiting one or several hazardous attitudes will be counseled and if necessary, will be put on a behavioral contract. If this is ineffective in modifying unacceptable behavior, 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.

Attendance:

Attendance is mandatory in this course. Please read the bullet on "Unexcused Absences" under **Section V: EVALUATION PROCESS/GRADING SYSTEM**

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

VII. COURSE OUTLINE ADDENDUM:

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

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 consent.