

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: Navigation 1

CODE NO. : AVT112-1 **SEMESTER:** One

PROGRAM: Aviation Technology (Flight)

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DATE: June 2010 **PREVIOUS OUTLINE DATED:** June 2009

APPROVED: "B. Punch"

	CHAIR	DATE
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TOTAL CREDITS: 1

PREREQUISITE(S): none

HOURS/WEEK: 1

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I. COURSE DESCRIPTION:

This course covers most of the theory and some practical application of Dead Reckoning Navigation as required for the Transport Canada Private Pilot Written Exam (PPAER)

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Understand the foundation elements required for navigation

Potential Elements of the Performance:

Geographical Coordinates, Time and longitude, Time zones, Great circle and Rhumb lines

2. Understand Earth's magnetism

Potential Elements of the Performance:

Variation, converting from True to Magnetic, The Magnetic Compass, compass errors, magnetic dip

3. Identify and interpret Aeronautical Charts and Publications

Potential Elements of the Performance:

VNC, VTA, WAC, LO, CFS, basic chart information

4. Understand and apply the principles of Dead Reckoning Navigation

Potential Elements of the Performance:

Departure procedures, drift correction, groundspeed calculations, ETA and ETE, arrival procedures

5. Prepare a navigation chart for dead reckoning navigation

Potential Elements of the Performance:

Using plotting instruments to prepare a chart that can be used by a pilot/navigator

6. Use the "Circular Slide Rule" flight computer (Jeppesen CR5 or APR CR-3 or equivalent) to perform various calculations required for navigation

Potential Elements of the Performance:

Heading and Groundspeed, TAS to CAS, conversions, $V=D/t$, etc.

8. Understand and apply the theory and techniques of dead reckoning navigation required for the completion of the navigation portion of the Transport Canada Private Pilot Exam

Potential Elements of the Performance:

All topics learned in this semester are for preparing the student for the Private Pilot Written exam and lays the foundation for the Commercial Exam.

Note: any of the topics above not covered in AVT112 will be completed in AVT122 in Semester 2

III. TOPICS:

1. Navigation basics
2. Earth's Magnetism
3. Aeronautical charts and publications
4. Dead Reckoning Navigation
5. Chart Preparations
6. Mental Dead Reckoning
7. The VOR
8. Preparation for the Transport Canada Private pilot exam

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

From the Ground Up
Sault Ste Marie VNC
Aeronautical Information Manual (AIM)
Navigational Plotting Instruments

V. EVALUATION PROCESS/GRADING SYSTEM:

The student will be assessed by a combination of quizzes, tests and a final exam. Weighting of each will be as follows: 20% for quizzes, 30% for the mid-term test and 50% for the final exam. A minimum mark of 70% is required to pass the course. Make-up tests are not permitted except in accordance with section VI of this outline.

- Quizzes will be given without prior notice. If a student is absent for a quiz without excuse, the student will get 0% on the quiz. There will be no make-ups of missed quizzes when missed due to unexcused absence.
- 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.**
- **"F" grades in any subject at the end of a semester will result in termination from the Aviation program.**
- 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:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	assigned if a make-up exam was required to complete the course	0.00
F (Fail)	69% 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.	

VI. SPECIAL NOTES:

Attendance:

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. It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivers may not be granted admission to the room.

- 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 section for dress code policies and for policy regarding absence from classes
- Students are expected to have their VFR navigation charts (VNC), plotting instruments and calculator with them for every class. If a student does not have the required equipment when needed for a class, a 1% deduction of the final mark will be made for each occurrence. Repeatedly not bringing proper equipment to class will result in the student being asked to leave the class.
- Note: You may not know which class this equipment is needed, so it must be brought to all classes.

Make-up Policy

- No make-ups on tests occurring prior to final exams.
- No make-ups on quizzes.
- 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 grading system will be modified as follows: the first exam attempt will be weighted at 25% instead of the original 50% of the final mark, and the make-up exam will be weighted at 25% of the final mark. The minimum mark for the course is still 70% or better after the grade has been re-calculated to include the make-up exam.
- In the event that a second final exam is required, the highest achievable overall grade for this course will be a C
- Any student that requires 90% or greater on a make-up exam to pass the course will not be allowed to write a make-up exam.

VII. COURSE OUTLINE ADDENDUM:

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