



**I. COURSE DESCRIPTION:**

This course provides the preparatory ground instruction for radio navigation using VOR, ADF and GPS navigation aids. This is in preparation for the skills required for the Transport Canada Commercial Flight Test and written exam

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

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

1. Understand the theory and use of the VHF Omni Range (VOR)

Potential Elements of the Performance:

theory of operation, the equipment, serviceability checks, orientation, intercepting inbound and outbound tracks, advantages and disadvantages, the HSI

2. Understand the theory and use of the Automatic Direction Finder (ADF) and the Non-directional Beacons (NDB)

Potential Elements of the Performance:

theory of operation, the equipment, serviceability checks, orientation, intercepting inbound and outbound tracks, advantages and disadvantages, inaccuracies of the ADF, the RMI

3. Understand the theory of Global Positioning System (GPS) technology and use the KLN94 GPS that is used in Sault College aircraft and simulators

Potential Elements of the Performance:

GPS theory, RAIM, databases, signal augmentation, the KLN94 GPS usage

4. Understand and apply the use of radio navigation aids in preparation for the Sault College Commercial Qualification exam and the Transport Canada Commercial Pilot exam.

Potential Elements of the Performance:

The theory and practical knowledge prepares students for the Transport Canada Commercial Pilot written exam and flight test, as well as the Commercial Qualification exam

**III. TOPICS:**

1. The VHF Omni Range (VOR)
2. The Non-Directional Beacon (NDB)
3. The Automatic Direction Finder (ADF)
4. The Global Position System (GPS)
5. Preparation for the Transport Canada Commercial Pilot written exam and flight test, and the Sault College Commercial Qualification exam

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

From the Ground Up  
 Aeronautical Information Manual (AIM)  
 Navigational Plotting Instruments

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

The student will be assessed by a combination 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:

<b>Grade</b>	<b>Definition</b>	<i>Grade Point Equivalent</i>
A+	90 – 100%	
A	80 – 89%	4.00
B	70 - 79%	3.00
C	assigned if a make-up exam was required	2.00

F (Fail)	to complete the course 69% 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:

### 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

### 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.