


**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



**SAULT  
COLLEGE**

**COURSE OUTLINE**

**COURSE TITLE:** Aircraft systems and Preparation for Flight  
**CODE NO. :** AVT366-2 **SEMESTER:** Six  
**PROGRAM:** Aviation Technology (Flight)  
**AUTHOR:** Earl Turner  
**DATE:** June 7, 2013 **PREVIOUS OUTLINE DATED:** Aug. 14, 2012  
**APPROVED:**   
**AVIATION OPERATIONS MANAGER** **DATE**  
**TOTAL CREDITS:** 2  
**PREREQUISITE(S):** AVF 115, AVF 245, AFT 240  
**HOURS/WEEK:** 2

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*For additional information, please contact Greg Mapp, Aviation Operations Manager,*  
*Aviation (Flight) Technology Program*  
*(705) 759-2554, Ext. 2865*  
*[greg.mapp@saultcollege.ca](mailto:greg.mapp@saultcollege.ca)*

**I. COURSE DESCRIPTION:**

A study of electrical, hydraulic, fuel, oil, oxygen, and fire fighting systems and procedures in the aircraft used for multi-engine training as well as in a modern, turbine, pressurized transport aircraft.

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

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

1. Describe the PA44 and its systems with sufficient detail to demonstrate a practical working knowledge.  
Potential Elements of the Performance:
  - Have a clear understanding of the terminology, abbreviations and definitions used in the flight manual.
  - Have a clear understanding of the technical description of the aircraft and its systems.
  - Know the operating limitations of the aircraft.
2. Apply the Normal and Emergency Procedures applicable to the PA44.  
Potential Elements of the Performance:
  - Practical knowledge of all checklist items including the rationale for each item.
  - Memorization of necessary memory items.
  - Ability to satisfactorily determine a procedure to use where there is no checklist procedure.
  - Practical knowledge of good flying practices.
3. Accomplish all necessary pre-flight tasks applicable to the PA44.  
Potential Elements of the Performance:
  - Perform weight & balance calculations.
  - Calculate performance requirements for take-off, climb, single engine flight, cruise, landing etc.
  - Determine that maintenance requirements have been met and that the aircraft is certified and fit for flight.
4. Be knowledgeable about the systems of a typical pressurized multi-engine turbine aircraft (the Beech King Air)  
Potential Elements of the Performance:
  - Engine & propeller operation.
  - Systems operation.

- Normal & emergency procedures
- Performance calculations
- Servicing requirements

### III. TOPICS:

- PA44
1. Introduction – Airport visit
  2. General Information
  3. Limitations
  4. Description and Operations of the Airplane and Its Systems
  5. Normal Procedures
  6. Emergency Procedures
  7. Performance
  8. Weight and Balance
  9. Airplane Handling, Servicing and Maintenance
  10. Supplements
- King Air
11. Self Paced Computer Study Program

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

1. Piper Seminole (PA44) Information Manual (manual part number 761-873 applicable to aircraft SN 4496001 and up)
2. Sault College Approved Maintenance Schedule – PA44 (on LMS)
3. Access to Computer Program for King Air.

### V. EVALUATION PROCESS/GRADING SYSTEM:

The student will be assessed by a combination of attendance and deportment, quizzes, tests and a 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) overall, as well as a minimum of 70% on the PA44 exam is required to pass the course.

- 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 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.
- Note: a pass mark of 70% on the PA44 exam is necessary to indicate that the student has sufficient knowledge to safely operate the aircraft systems and is a necessary part of the qualifications which allow the student to fly the aircraft.

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	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% 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:**

**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.**

