



COURSE OUTLINE

AVT375

Prepared: Earl Turner Approved: Greg Mapp

Course Code: Title	AVT375: AIRFRAMES, ENGINES AND MAINT REQUIREMENT
Program Number: Name	4061: AVIATION TECHNOLOGY
Department:	AVIATION TECHNOLOGY
Semester/Term:	17F
Course Description:	A study of airframes and engines including the internal combustion engine and the basic gas turbine engine, fuels and fuel systems, lubrication and oil, ignition systems, engine instruments, propellers, airframes. Also study of aircraft maintenance requirements to the level required of a Person Responsible for Maintenance (PRM) for an Air Operator.
Total Credits:	4
Hours/Week:	4
Total Hours:	60
Prerequisites:	AFT240, AVT361, AVT363, AVT364, AVT366, AVT369
Essential Employability Skills (EES):	<p>#1. Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>#2. Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>#3. Execute mathematical operations accurately.</p> <p>#4. Apply a systematic approach to solve problems.</p> <p>#5. Use a variety of thinking skills to anticipate and solve problems.</p> <p>#6. Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>#7. Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>#10. Manage the use of time and other resources to complete projects.</p> <p>#11. Take responsibility for ones own actions, decisions, and consequences.</p>
Course Evaluation:	Passing Grade: 70%, B
Other Course Evaluation & Assessment Requirements:	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) 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 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 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.

If a faculty member determines that a student is at risk of not being successful in their academic pursuits and has exhausted all strategies available to faculty, student contact information may be confidentially provided to Student Services in an effort to offer even more assistance with options for success. Any student wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Final Exam	50%
Quizzes	20%
Tests	30%

Books and Required Resources:

Canadian Aviation Regulations
Available for download from the Internet - Link on LMS

Sault College Maintenance Policy and Control Manual

Sault College Maintenance Schedules – Zlin Z-242-L and Piper PA44

From the Ground Up
Publisher: Aviation Publishers Co. Limited
No author indicated

Flight Training Manual
No author indicated

Sault College Ground School Manual – Zlin Z-242-L
Printed by Sault College book store

Piper PA44 Seminole Information Manual
From AVT 366

Course Outcomes and Learning Objectives:

Course Outcome 1.

Perform the duties of a Person Responsible for Maintenance of an air operator or flight training unit.

Learning Objectives 1.

Knowledge of general maintenance requirements prescribed by CARs.
Knowledge of the additional requirements for an air operator or FTU.
Knowledge of a typical Maintenance Control Manual and its related sub manuals (i.e. Sault College MPCM)
Familiarity with the format of typical maintenance publications such as Airworthiness Directives, Type Certificates, Manufacturer's Service Bulletins etc.

Course Outcome 2.

Describe the layout and operation of typical aviation powerplants and their systems

Learning Objectives 2.

Knowledge of piston engine layout, operational cycles etc.
Knowledge of turbine theory, layout, gas flow etc.
Knowledge of propeller terminology, types, control systems, operation etc.
Knowledge of fuel, lubrication, induction, exhaust, ignition, starting, fire, monitoring and control systems.
Ability to properly operate engines efficiently while optimizing their reliability and longevity.
Ability to detect and troubleshoot common engine problems.
Rationalization of the checklists and procedures associated with aircraft engines.

Course Outcome 3.

Describe the various types and styles of airframe construction, the properties of the materials used and the systems associated with aircraft such as electrical, pneumatic, vacuum, hydraulic, anti/de-ice, heating/ventilating/cooling and pressurization

Learning Objectives 3.

Knowledge of various construction materials and their properties.
Knowledge of the various airframe styles and types of construction
Understanding of stress and strain and the limitations imposed on airframes.
Understanding of corrosion concerns
Knowledge of the various systems.
Ability to operate the systems.
Ability to detect faults and common airframe defects and to troubleshoot the systems.
Ability to properly operate airframes efficiently while optimizing their reliability and longevity.
Rationalization of the checklists and procedures associated with aircraft systems.

Date:

Thursday, February 8, 2018

Please refer to the course outline addendum on the Learning Management System for further information.