COURSE OUTLINE: AVF245 - AIRFRAMES,ENGINES II

Prepared: Ryan London
Approved: Greg Farish, Dean, Aviation

Course Code: Title	AVF245: AIRFRAMES, ENGINES AND INSTRUMENTS II
Program Number: Name	4061: AVIATION TECHNOLOGY
Department:	AVIATION TECHNOLOGY
Academic Year:	2024-2025
Course Description:	A study of engines and airframes including the internal combustion engine and the basic gas turbine engine, fuels and fuel systems, lubrication and oil, ignition systems, engine instruments, propellers, airframes, and electrical systems.
Total Credits:	2
Hours/Week:	2
Total Hours:	28
Prerequisites:	AVF115
Corequisites:	There are no co-requisites for this course.
This course is a pre-requisite for:	AFT131, AFT132, AVT247, AVT252, AVT257
Essential Employability Skills (EES) addressed in this course:	EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others. EES 11 Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Passing Grade: 70%, B A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	Evaluation Considerations: Students will be assessed by a combination of attendance and deportment, quizzes, tests, and a final exam. Weighting of each will be as follows: 30% for quizzes, 30% for all tests prior to the final exam and 40% for the final exam. A minimum mark of 70% (B) is required to pass the

course.

Dates of tests will be announced at least 1 week in advance.

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-up evaluations will not be permitted without prior notice regardless of the circumstances.

Attendance:

Attendance is mandatory for courses which appear on the student`s formal Ground School Record required by Transport Canada.

To be excused from class due to illness or other unforeseen circumstance, students must inform their instructor/professor prior to the start of class. A make-up class may be required.

Unexcused absences will result in 2% deduction from the final mark for each occurrence. Arriving for class late will result in a 1% deduction from the final mark for each occurrence.

Classroom Conduct:

A classroom code of conduct can be found in the Sault College Student Code of Conduct policy, on the Sault College Website. This along with the list of Unacceptable Behaviours in the Sault College Aviation`s SOPs must be adhered to.

Violations of the dress code will result in a Letter of Warning (LOW). Refer to the Sault College Aviation Standard Operating Procedures (SOPs) manual, Section 10, for dress code policies.

Student Support and Students at Risk:

Student support services are provided through Sault College`s Student Services department. All students are encouraged to use these services to enhance their learning experience. Services like peer tutoring provides support from Aviation students in years ahead, who have demonstrated success in the program.

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 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.

Books and Required Resources:

FROM THE GROUND UP by MCDONALD
Publisher: AVIATION PUBLISHERS Edition: 29
ISBN: 0973003634

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
Demonstrate a practical working knowledge of aircraft engines.	Describe and understand the difference between a two/four stroke cycle. Describe and understand the methods of cooling aviation

		engines. Describe and understand turbine theory and layout. Describe the proper handling procedures of aviation engines in flight. Describe the effects of forced induction in aircraft engines.
	Course Outcome 2	**Learning Objectives for Course Outcome 2**
	Demonstrate a practical knowledge of aircraft fuel systems.	Describe and understand the principles of carburation and fuel injection in aircraft engines. Describe and understand malfunctions associated with aircraft fuel systems. Describe and understand fuel storage, delivery systems and identification of common fuels used in aviation.
	Course Outcome 3	**Learning Objectives for Course Outcome 3**
	Demonstrate a practical knowledge of aircraft pressurization, environmental, electrical and de-icing/ anti-icing systems.	Describe and understand pressurization systems used in turbine powered aircraft. Describe and understand various environmental systems used in aircraft to control cabin temperature. Describe and understand AC and DC power generation and systems and malfunctions. Describe and understand various methods to de-ice an aircraft or prevent the accumulation of ice in flight.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
FINAL EXAM	40%
MIDTERM EXAM	30%
QUIZZES	30%

Date: December 3, 2024

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