



COURSE OUTLINE: AVF115 - AIRFRAMES, ENGINES

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Approved: Greg Farish, Chair, Aviation Technology - Flight

Course Code: Title	AVF115: AIRFRAMES, ENGINES AND ZLIN SYSTEMS
Program Number: Name	
Department:	AVIATION TECHNOLOGY
Academic Year:	2022-2023
Course Description:	A study of the topics necessary to determine that an aircraft is ready for flight, including an overview of airframes and engines and a study of the systems and performance for the aircraft used for flight training, documents and airworthiness, dispatch procedures, record keeping, weight and balance, servicing and elementary maintenance)
Total Credits:	2
Hours/Week:	2
Total Hours:	28
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
This course is a pre-requisite for:	AFT120, AVF122, AVT123, ELR104
Essential Employability Skills (EES) addressed in this course:	<p>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.</p> <p>EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>EES 4 Apply a systematic approach to solve problems.</p> <p>EES 5 Use a variety of thinking skills to anticipate and solve problems.</p> <p>EES 6 Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others.</p> <p>EES 10 Manage the use of time and other resources to complete projects.</p> <p>EES 11 Take responsibility for ones own actions, decisions, and consequences.</p>
Course Evaluation:	<p>Passing Grade: 70%, B</p> <p>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.</p>
Other Course Evaluation & Assessment Requirements:	The student will be assessed by a combination of attendance and department, 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 Final Exam exam is required to pass the course. Note: a pass mark of 70% on the final 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.

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 Sault College Aviation Standard Operating Procedures (SOP's) Section 10 for dress code policies and SOP Section 4 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 will 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 Sault College Student Code of Conduct, on the Sault College Website. This along with the list of Unacceptable Behaviours in the SOP 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 before class.

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 5.2 SOP). 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 and 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
Publisher: Aviation Publishers Co. Limited

Sault College Ground School Manual (Flight Manual)
Edition: 2022 Edition
Printed by book store

Sault College Aviation Technology Maintenance Policy and Control Manual (MPCM)
Downloadable from the Internet (Link on LMS)

Sault College Aviation Technology Maintenance Schedule
Downloadable from the Internet (Link on LMS)



Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
Demonstrate a practical working knowledge of airframes and engines.	Demonstrate knowledge of piston engine cycles, theory of operation, describe typical aviation engine layouts. Describe propeller terminology, different types of propellers, the operation of the propeller as it relates to the Zlin 242L. Describe the types of aviation fuel, hazards while handling and contaminants found. Describe the type of fuel system installed in the Zlin 242L. Describe various construction techniques found in aircraft manufacturing, the type of construction found on the Zlin 242L, as well as materials used and concerns regarding corrosion. Identify different airframe styles, wing placements and landing gear construction. Describe the stress and strain limitations imposed on airframes, as well as load limitations.
Course Outcome 2	Learning Objectives for Course Outcome 2
Describe the aircraft and its systems with sufficient detail to demonstrate a practical working knowledge.	Demonstrate knowledge of various terminology, abbreviations and definitions used in the flight manual. Recall various operating limitations for the Zlin 242L. Explain the technical operation of various systems found in the Zlin 242L.
Course Outcome 3	Learning Objectives for Course Outcome 3
Apply the Normal and Emergency Procedures applicable to the aircraft.	Demonstrate knowledge of checklist items. Demonstrate memorization of necessary memory items as found on the Zlin 242L checklist. Use logical reasoning to determine a procedure when there is no applicable checklist procedure.
Course Outcome 4	Learning Objectives for Course Outcome 4
Accomplish all necessary pre-flight calculations applicable to the aircraft.	Perform weight & balance calculations. Calculate performance requirements for take-off, climb, cruise, landing etc.
Course Outcome 5	Learning Objectives for Course Outcome 5
Determine that the aircraft is certified & fit for flight.	Have an understanding of the Maintenance Policy and Control Manual. Demonstrate understating of Maintenance and Servicing requirements of aircraft. Demonstrate understanding of Sault College dispatch procedures.

Evaluation Process and Grading System:

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



Date:

July 5, 2022

Addendum:

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

