



## COURSE OUTLINE: AVF115 - AIRFRAMES, ENGINES

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Approved: Sherri Smith, Chair, Natural Environment, Business, Design and Culinary

<b>Course Code: Title</b>	AVF115: AIRFRAMES, ENGINES AND ZLIN SYSTEMS
<b>Program Number: Name</b>	4061: AVIATION TECHNOLOGY
<b>Department:</b>	AVIATION TECHNOLOGY
<b>Semesters/Terms:</b>	19F
<b>Course Description:</b>	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)
<b>Total Credits:</b>	2
<b>Hours/Week:</b>	2
<b>Total Hours:</b>	30
<b>Prerequisites:</b>	There are no pre-requisites for this course.
<b>Corequisites:</b>	There are no co-requisites for this course.
<b>This course is a pre-requisite for:</b>	AFT120, AVF122, AVT123, ELR104
<b>Essential Employability Skills (EES) addressed in this course:</b>	<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 3 Execute mathematical operations accurately.</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 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>
<b>Course Evaluation:</b>	Passing Grade: 70%, B
<b>Other Course Evaluation &amp; Assessment Requirements:</b>	<p>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</p> <p>Quizzes will be given without prior notice.</p> <p>Students may request a deferment of a test or exam for compassionate reasons.</p> <p>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.</p>



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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 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.  
 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.

**Books and Required Resources:**

From The Ground Up  
 Publisher: Aviation Publishers Co. Limited

Sault College Ground School Manual  
 Edition: 2013 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 Policy and Control Manual (MPCM)

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

Canadian Aviation Regulations (CARs)  
 Downloadable from the Internet (Link on LMS)

**Course Outcomes and Learning Objectives:**

<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
1. Demonstrate a practical working knowledge of airframes and engines.	1.1 Knowledge of piston engine layout, operational cycles etc. 1.2 Knowledge of turbine theory, layout, gas flow etc. 1.3 Knowledge of propeller terminology, types, operation etc. 1.4 Knowledge of fuel, lubrication, induction, exhaust and ignition systems. 1.5 Knowledge of various construction material and their properties. 1.6 Knowledge of the various airframe styles and types of construction. 1.7 Understanding of stress and strain and the limitations imposed on airframes. 1.8 Understanding of corrosion concerns.
<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
2. Describe the aircraft and its systems with sufficient	2.1 Have a clear understanding of the terminology, abbreviations and definitions used in the flight manual.



	detail to demonstrate a practical working knowledge.	2.2 Have a clear understanding of the technical description of the aircraft and its systems. 2.3 Know the operating limitations of the aircraft.
	<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
	3. Apply the Normal and Emergency Procedures applicable to the aircraft.	3.1 Practical knowledge of all checklist items including the rationale for each item. 3.2 Memorization of necessary memory items. 3.3 Ability to satisfactorily determine a procedure to use where there is no checklist procedure.
	<b>Course Outcome 4</b>	<b>Learning Objectives for Course Outcome 4</b>
	4. Accomplish all necessary pre-flight calculations applicable to the aircraft.	4.1 Perform weight & balance calculations. 4.2 Calculate performance requirements for take-off, climb, cruise, landing etc.
	<b>Course Outcome 5</b>	<b>Learning Objectives for Course Outcome 5</b>
	5. Determine that the aircraft is certified & fit for flight.	5.1 Have a clear understanding of the appropriate sections of the Maintenance Policy and Control Manual. 5.2 Have a clear understanding of the maintenance requirements for the aircraft. 5.3 Have a clear understanding of the Sault College Dispatch Procedures. 5.4 Know the actions to take following an abnormal occurrence or the discovery of an aircraft defect. 5.5 Be able to make the appropriate flight sheet and log entries.

**Evaluation Process and Grading System:**

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

**Date:** September 3, 2019

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