COURSE OUTLINE: ATQ123 - AVIATION MOTIVE PWR

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Course Code: Title	ATQ123: AVIATION MOTIVE POWER
Program Number: Name	4161: AVIATION TECHNIQUES
Department:	CONTROL - SAULT
Semesters/Terms:	21W
Course Description:	This course is an introduction to basic aircraft power plant construction as it relates to small piston engines commonly found in general aviation type aircraft. In a lab environment the student will be exposed to various types of components found in engines and asked to identify them and state their purpose. Basic engine layout and ways of providing fuel sources for combustion will be explored, as well as the benefits and downside to each. At the end of the course the student should have a basic understanding of how piston engines work, what a stoichiometric ratio is, how and why aircraft engines are leaned and why proper fuel grades are important.
Total Credits:	3
Hours/Week:	3
Total Hours:	45
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Essential Employability Skills (EES) addressed in this course:	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: 50%, A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	The student will be assessed by a combination of attendance and deportment, quizzes, assignments and a final exam. Weighting of each will be as follows: 30% for quizzes, 30% for tests prior to the final exam, 40% for the final exam. A minimum mark of 50% overall, is required to pass the course. Quizzes will be given without prior notice.

In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2020-2021 academic year.

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 Sault College Student Code of Conduct, on the Sault College Website. This along with the list of Unacceptable Behaviours in the Aviation SOP will be adhered to.

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 Aviation SOP).

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.

Books and Required Resources:

From the Ground Up by Sandy A.F. MacDonald
Publisher: Aviation Publisher Co. Ltd. Edition: 29
ISBN: 978-0-9730036-3-5

Course Outcomes and Learning Objectives:

Course Outcome 1	**Learning Objectives for Course Outcome 1**
Demonstrate a practical working knowledge of engines and associated components.	Describe piston engine layout and their cooling methods. Demonstrate knowledge of piston engine components and their function. Describe induction systems. Describe the different types of piston engine lubrication systems. Describe ignition systems commonly found on aircraft engines. Describe aircraft fuels and the related problems aircraft engines may encounter if the wrong fuel is used. Describe the different types of propellers and the associated control devices.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
Demonstrate a practical working knowledge of piston engine fuel systems.	Describe the difference between fuel injection and carburation.
Course Outcome 3	**Learning Objectives for Course Outcome 3**

	Demonstrate a knowledge of aircraft electrical systems. | Describe a basic aircraft electrical system and their associated components.
Evaluation Process and Grading System:	**Evaluation Type** | **Evaluation Weight** Final Exam | 40% Quizzes | 30% Tests | 30%
Date:	January 5, 2021
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.