COURSE OUTLINE: MCH221 - HYDRAULICS SYSTEMS

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Approved: Greg Farish, Chair, Aviation Technology - Flight

Course Code: Title	MCH221: HYDRAULICS SYSTEMS
Program Number: Name	4061: AVIATION TECHNOLOGY
Department:	AVIATION TECHNOLOGY
Semesters/Terms:	21W
Course Description:	Fluid power is used for power and control of many operations on aircraft. This course is intended to provide a fundamental understanding of fluid theory, fluid power, theory, component operations, circuit design and system troubleshooting.
Total Credits:	4
Hours/Week:	4
Total Hours:	4
Prerequisites:	MCH298
Corequisites:	There are no co-requisites for this course.
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 3 Execute mathematical operations accurately. 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 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
General Education Themes:	Science and Technology
Course Evaluation:	Passing Grade: 50%, D A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation &	A+ 90 - 100% 4.00

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.

Assessment Requirements:

A 80 - 89%
B 70 - 79% 3.00
C 60 - 69% 2.00
D 50 - 59% 1.00
F (Fail) 49% and below 0.00

CR (Credit) Credit for diploma requirements has been awarded.
S Satisfactory achievement in field /clinical placement or non-graded subject area.
U Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR Grade not reported to Registrar`s office.
W Student has withdrawn from the course without academic penalty.

Attendance:
Sault College is committed to student success. There is a direct correlation between academic performance and class attendance, therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

Books and Required Resources:

Fluid Power with Applications by Anthony Esposito
Publisher: Pearson Edition: 7
ISBN: 13-978-0-13-513690-4

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Understand fundamental fluid principles.	1.1 Determine solutions to assorted fluid mechanic problems.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Be familiar with terminology and schematics.	2.1 Develop with sketches and calculations, basic hydraulic circuits using proper symbols.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Demonstrate knowledge of key components in fluid power systems.	3.1 Identify components and explain their function.
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Demonstrate knowledge of aircraft hydraulic systems.	4.1 Study schematics and manufacturers` literature.
Course Outcome 5	**Learning Objectives for Course Outcome 5**
5. Understand basic aircraft control systems.	5.1 Explain sequence of operation using electrical over hydraulic schematics.
Course Outcome 6	**Learning Objectives for Course Outcome 6**
6. Apply troubleshooting skills.	6.1 Solve hydraulic problems using simulated scenarios.

Evaluation Process and

Evaluation Type	Evaluation Weight

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Grading System:	

2 Practical Tests	15%
3 Assignments	15%
3 Written Tests	60%
Lab Reports	10%

Date:	June 11, 2020
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.