

## Course outline

COURSE : **Aircraft system maintenance**

PROGRAM : 280.C0 Aircraft Maintenance

DISCIPLINE : 280 Aeronautics

WEIGHTING : Theory :0 Practice :4 Personal Study :2

Teacher(s)	Office	☎ extension	✉ e-mail ou website
Yvan Larivière	C182	4761	yvan.lariviere@ena.ca

### Office hours

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Morning	11 :00 to 13 :00				
Afternoon		12 :00 to 13 :00			12 :00 to 13 :00
Other					

Coordinator(s)	Office	☎ extension	✉ e-mail
Ashby, Paul-Anthony	C- 160	4225	<a href="mailto:paul-anthony.ashby@cegepmontpetit.ca">paul-anthony.ashby@cegepmontpetit.ca</a>
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## 1 CONTEXT OF THIS COURSE WITHIN THE PROGRAM

This course is offered during the sixth session of the Aircraft Maintenance Program and the main practical activity is devoted to aircraft systems.

The knowledge gained in previous courses, in particular those related to general electricity, aerodynamics, flight instruments, hydraulics, pneumatics and systems operation is essential in order to follow this course.

Inspecting, servicing and maintaining aircraft systems are a top priority for an AME and this is the goal of this course.

In order to enable students to achieve the ministry objective, the activities reflect the following framework:

- systems standards, specifications and specific regulations
- methods used to inspect and test a system
- identification of all the possible causes of a defect
- use of simulation and defect diagnosis software (if possible)
- follow-up of maintenance procedures
- appropriate technical vocabulary
- workplace hazardous materials information system
- professionalism: safe attitude and behaviour

Students must keep this course outline for the duration of their studies as it will be useful for the comprehensive assessment at the end of the program.

**Transport Canada** : This course outline meets the requirements of Training Organisation Certification Manual (MCF) of Transport Canada. The Department applies Transport Canada standard which allows a maximum absence of 5% for the course (theory and laboratory). The department compiles absences of all students enrolled in Aircraft Maintenance (280.CO) according to Transport Canada requirements. The application of Transport Canada policies regarding absences is available on the [Ma réussite à l'ÉNA](#) website under the heading « Privilèges accordés par Transports Canada ».

## 2 COMPETENCIES OF THE EXIT PROFILE (STUDENT SKILL PROFILES)

Execute maintenance on aircraft systems.

## 3 MINISTERIAL OBJECTIVE(S) AND COMPETENCIES

0269 Perform maintenance on aircraft systems.  
026C Perform maintenance on aircraft landing gear systems.

## 4 TERMINAL OBJECTIVE OF THE COURSE (FINAL COURSE OBJECTIVE)

Develop a methodology and technic of work on aircraft systems according to the manufacturer's procedures and in compliance with Transport Canada standards.

## 5 TEACHING AND LEARNING STRATEGIES

Each week for every team a crew chief will be named for the conduction of the activity. Crew chief role will be to report to the teacher and guide his teammates throughout the activity. Teamwork is mandatory for this course.

As a team, students will be asked to perform exercises and functional checks to maintain aircraft systems on aircraft or models and evaluate the performances of the aircraft systems.

Each activity requires the use of prior knowledge and the application of strict standards and regulations previously established that may come from various levels: Transport Canada, aircraft parts manufacturers, employers, recognized organizations, maintenance policy manual, etc

The work orders and the questionnaires will need to be completed before the end of each class and handed to the teacher.

## 6 COURSE PLAN

### LEARNING OBJECTIVES

1. Retrieve the proper information
2. Plan the work
3. Perform activities related to the maintenance on different aircraft systems and understanding of the different systems
4. Trouble shoot anomalies
- 5- Clean properly the work area

WEEK	# OBJECTIVE	CONTENT	MODE OF INSTRUCTION AND LEARNING ACTIVITIES	DOCUMENTATIONS, RESOURCES, TECHNOLOGICAL TOOLS AND URL ADDRESS
1	1-2	Introduction Presentation of all the paperwork and all the activities Creation of the teams D60 hangar visit	Course will be held in a computer room for the start of the class. Teacher presentation Hangar visit	All the documents will be available on LÉA and computer access will be required by the students.  Technical library can be accessed with the following link: <a href="https://bit.ly/3fJUIJC">https://bit.ly/3fJUIJC</a>
2 3 4	ALL	Each team will perform in a rotation pattern the related activities on different aircrafts	ACTIVITIES <b>DO328</b> Deice system  <b>Lear60</b> Anti-Skid and gear extension/retraction  <b>CL601</b> Nose wheel steering system	All the work orders and the questionnaires are available on LÉA and access to the technical library on a computer.
5	1-2-3-4	<b>EXAM #1</b>	Written exam with short answers and multiple choices questions based on all 3 activities from weeks 2-3-4	Computer access will be mandatory for each student. Exam copy will be provided by the teacher.
6 7 8	ALL	Each team will perform in a rotation pattern the related activities on different aircrafts	ACTIVITIES <b>C421</b> Pressurisation system <b>Lear60</b> Thrust reversers system  <b>CL601</b> Landing gear extension/retraction and aircraft jacking / unjacking	All the work orders and the questionnaires are available on LÉA and access to the technical library on a computer.

WEEK	# OBJECTIVE	CONTENT	MODE OF INSTRUCTION AND LEARNING ACTIVITIES	DOCUMENTATIONS, RESOURCES, TECHNOLOGICAL TOOLS AND URL ADDRESS
9 10 11	ALL	Each team will perform in a rotation pattern the related activities on different aircrafts	<p>ACTIVITIES</p> <p><b>DO328</b> Hydraulic system and brake bleeding</p> <p><b>C421</b> Landing gear inspection and retraction/extension</p> <p><b>CL601</b> Thrust reversers system</p>	All the work orders and the questionnaires are available on LÉA and access to the technical library on a computer.
12 13 14	ALL	Each team will perform in a rotation pattern the related activities on different aircrafts	<p>ACTIVITIES</p> <p><b>C421</b> Deice system</p> <p><b>DO328</b> Engine oil chip detection system</p> <p><b>Lear60</b> Engine fire detection system</p>	All the work orders and the questionnaires are available on LÉA and access to the technical library on a computer.
15	1-2-3-4	<b>FINAL EXAM</b>	Written exam with short answers and multiple choices questions based on all 9 activities from weeks 6 to 14	Computer access will be mandatory for each student. Exam copy will be provided by the teacher.

## 7 SYNTHESIS OF SUMMATIVE EVALUATION METHODS

Description of Evaluation Activity	Context	Learning objective(s)	Evaluation Criteria <sup>1</sup>	Due Date (approximate date assignment due or exam given)	Weighting (%)
<p><b>EXAM #1</b></p> <p>Written exam based on all 3 activities from weeks 2-3-4</p> <p>Short answers and multiple choices questions</p>	<p>Individual evaluation</p> <p>Approximately 3 hours allowed for the exam</p> <p>Computer access will be mandatory for each student</p>	1-2-3-4	<p>Precise identification of standards</p> <p>Understanding of all activities performed on the different systems during weeks 2-3-4</p>	WEEK 5	<b>25%</b>

<sup>1</sup> Issus du programme d'études (critères de performance) et adaptés au niveau des étudiants (exigences évolutives) d'une session à l'autre. Les critères d'évaluation doivent être explicites et permettre l'observation des résultats (processus, produits, propos). Les critères d'évaluation seront présentés par écrit aux étudiants au moins une semaine avant l'activité d'évaluation sommative (article 5.1j PIEA)

Technical record Work Order completion Questionnaires	Each student will be required to complete the work orders and the questionnaires  Individual evaluation on the completion of the work orders as per the class technical record rules available on LÉA.	1-2-3-4	The technical record evaluation grid is available on LÉA	WEEKS 4-6-9-12	<b>15%</b>
Competencies evaluation Performances	The competencies and the performances during the activities  Individual evaluation	1-2-3-4-5	The competencies and performances evaluation grid is available on LÉA	WEEKS 7-8 10-11 13-14	<b>20%</b>
<b>FINAL EXAM</b> Terminal evaluation	Individual evaluation Approximately 3 hours allowed for the exam  Computer access will be mandatory for each student	1-2-3-4	Precise identification of standards  Understanding of all activities performed on the different systems during weeks 6 to 14	WEEK 15	<b>40%</b>
				<b>TOTAL</b>	<b>100 %</b>

## 8 REQUIRED MATERIAL

### SAFETY MEASURES IN THE HANGARS

Following items are **MANDATORY** for all activities inside the hangar

- 1- Safety shoes
- 2- Safety goggles
- 3- Safety working clothes (polo or t-shirt with ÉNA logo with working pants or a Coverall)

All paperwork required during the course will be available for print on LÉA. Please make sure you print the required documents for the proper activity. Paper copy OR electronic copy are acceptable.

## 9 MEDIAGRAPHY

All technical manuals required for the activities will be available on the computers or via the following link:

<https://bit.ly/3fJUjDC>

## 10 REQUIREMENTS TO PASS THE COURSE

### 1. Passing Mark

The passing mark for this course is 60% by adding the marks for the theory and practical work for the course.

### 2. Attendance for Summative Evaluations

Students must be present for summative evaluations and must comply with the instructions given by the instructor to carry out the evaluation activity and written in the course outline. Unexcused tardiness for a summative evaluation could result in being excluded from the activity. Any absence from a summative evaluation that is not due to serious reasons (illness, death in the family, etc.) could result in a mark of zero (0) for the activity.

Students are responsible for meeting with the instructor before an evaluation activity is held or immediately upon returning to ENA to explain the reason for an absence. Proper documentation, such as a medical certificate, a death certificate, legal papers, etc., must be shown if the reason for absence is serious and recognized as such by the instructor(s), arrangements will be made between the instructor(s) and the student to make up the activity.

### 3. Submitting Assignments

All assignments must be submitted by the date, hour and location designated by the instructor(s). Late assignments will be penalized 10% per day that they are late and will receive a mark of zero (0) after 6 days.

### 4. Presentation of Written Work

The instructor(s) will provide students with information and guidelines regarding the presentation of written work. When the presentation of an assignment is unacceptable, the work will be penalized as a late assignment until an acceptable version is submitted. In this case, the penalties for late work will be applied (Late assignments will be penalized 10% per day that they are late and will receive a mark of zero (0) after 6 days).

Students must follow the standards adopted by the Cégep for written work (« *Normes de présentation matérielle des travaux écrits* »). These can be found at : <http://rmsh.cegepmontpetit.ca/normes-de-presentation-materielle-des-travaux-ecrits-du-cegep/>.

## 11 METHODS OF COURSE PARTICIPATION

All students will be required in person at D60 hangar for all activities except for week 1 where the course will be held in a computer room.

All health and safety rules for the hangar will need to be followed by each student. Each equipment used during the activities will need to be used safely and as per the procedures.

For each class, a crew chief will be named in a rotation pattern to conduct and lead the activity. Teamwork is mandatory and each student will be required to participate as per the crew chief instructions.

## **12 OTHER DEPARTMENTAL REGULATIONS**

Students are encouraged to consult the website for the specific regulations for this course:

<http://guideena-en.cegepmontpetit.ca/departement-rules/>

<https://mareussite.cegepmontpetit.ca/ena/mon-parcours/mon-programme/regles-departementales>

## **13 INSTITUTIONAL POLICIES AND REGULATIONS**

All students enrolled at Cégep Édouard-Montpetit must become familiar with and comply with the institutional policies and regulations. In particular, these policies address learning evaluations, maintaining admission status, French language policies, maintaining a violence-free and harassment-free environment, and procedures regarding student complaints. The French titles for the policies are: *Politique institutionnelle d'évaluation des apprentissages* (PIEA), la *Politique institutionnelle de la langue française* (PILF), la *Politique pour un milieu d'études et de travail exempt de harcèlement et de violence* (PPMÉTEHV), les *Conditions d'admission et cheminement scolaire*, la *Procédure concernant le traitement des plaintes étudiantes dans le cadre des relations pédagogiques*.

The full text of these policies and regulations is accessible on the Cégep web site at the following address:

<http://www.cegepmontpetit.ca/ena/a-propos-de-l-ecole/reglements-et-politiques>. If there is a disparity between shortened versions of the text and the full text, the full text will be applied and will be considered the official version for legal purposes.

## **14 STUDENT ACCESSIBILITY CENTER - FOR STUDENTS WITH DISABILITIES**

Students having received a professional diagnosis of impairment (motor skills, neurological, organic, sensory, learning difficulties, mental health, autism spectrum disorder or other) or suffering from a temporary medical condition may request special accommodations.

Students seeking these accommodations must forward their diagnosis to the CSA by either MIO to "Service, CSA-ENA" or email to "servicesadaptesena@cegepmontpetit.ca".

Students already registered with the CSA must communicate with their teachers at the beginning of the semester to discuss those accommodations they have been awarded by the CSA.

## **15 ANNEX**

NONE