Collège
Édouard-Montpetit
École nationale d'aérotechnique

280-5B3-EM
FALL 2011
Pre-Flight

COURSE OUTLINE

COURSE: **Internship on Planes 1**

PROGRAM: 280.CO Aircraft Maintenance Technology

DISCIPLINE: 280 Aeronautics

WEIGHTING: Theory: 0 Practical Work: 3 Personal Study : 1

Instructor(s)	Office	☎ Extension	✉ Email or Website
Michel Payette	C-186	4656	michel.payette@college-em.qc.ca
Gilbert Bureau	C-186	4545	gilbert.bureau@college-em.qc.ca

OFFICE HOURS

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Morning					
Afternoon					

Coordinator(s)	Office	☎Extension	✉ Email or Website
Pierre Ménard	C-160	4207	pierre.menard@college-em.qc.ca
Gérard Leblanc	C-160	4531	gerard.leblanc@college-em.qc.ca

CONTEXT OF THIS COURSE IN THE PROGRAM

This course is offered during the fifth session of the program.

By the end of this course, students will have developed the ability to:

- conduct research in technical manuals
- apply inspection procedures
- identify defects
- record information
- determine the maintenance schedule

This course is a mandatory pre-requisite for the course 280-624-EM.

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.

MINISTRY OBJECTIVE(S) AND COMPETENCIES

026D To perform activities related to inspecting airplanes and helicopters.

TEACHING AND LEARNING STRATEGIES

Using an inspection log set, students carry out a maintenance job on an aircraft using the maintenance manual as the source of information.

Real and simulated scenarios are very important in this course. Students work in teams of two or three.

Before any summative evaluations, students will have had a formative evaluation to maximize the opportunity to succeed.

COURSE PLAN

026D To perform activities related to inspecting airplanes and helicopters.

Activity Periods:

Learning Objectives	List of Activities
1.1 Identify precisely Transport Canada inspection standards for inspection and maintenance for aircraft. (TC Appendic C - Part 2 - 23.0.1 à 23.0.10 - 566.13 - 566.14)	2, 3, 4, 6, 7, 9, 10
1.2 Identify precisely the manufacturer's specifications for inspections and maintenance to be performed on an aircraft (TC AppendixC - Part 2 - 23.0.1 à 23.0.10 - 566.13 - 566.14)	2, 3, 4, 6, 7, 9, 10
1.3 Identify the type of inspection to carry out on an aircraft. (TC Appendix C - Part 1 – Regulatory Structure and CAR Part IV Sub-Part 3)	2
1.4 Find technical history of the aircraft to be inspected. (Appendix C Part 1 CAR Part VII)	2

Activity Periods:

Learning Objectives	List of Activities
2.1 Establish in detail the relevance and type of intervention to be carried out from the history of the aircraft to be inspected and technical documentation. (Appendix C Part 2 23.0.1, 23.0.2, 23.0.10)	2
2.2 Determine the steps to carry out the inspection work. (Appendix C Part 2 23.0.1, 23.0.2, 23.0.10)	2
2.3 Identify the equipment necessary to carry out operations and check their availability. (Appendix C Part 2 23.0.1, 23.0.2, 23.0.10)	2, 3, 4, 6, 7, 9, 10
2.4 Respect the limits ofintervention and responsibilities as an aircraft maintenance engineer (technician?) (AME) (Appendix C Part 2 23.0.1, 23.0.2, 23.0.10)	2, 3, 4, 6, 7, 9, 10

Activity Periods:

Learning Objectives	List of Activities
3.1 Follow and respect standards and specifications.	2, 3, 4, 6, 7, 9, 10
3.2 Implement health and safety rules.	All
3.3 Use aircraft systems.	7
3.4 Use maintenance software.	3, 4, 6, 7, 8, 9, 10
3.5 Use equipment and tools appropriately.	3, 4, 6, 7, 9, 10
3.6 Implement inspection procedures.	3, 4, 6, 7, 9, 10
3.7 Evaluate the serviceability of components and systems.	3, 4, 6, 7, 9, 10
3.8 Identify defects (snags).	3, 4, 6, 7, 9, 10
3.9 Check the operating condition of system components.	3, 4, 6, 7, 9, 10
3.10 Make written records or use aircraft maintenance software to record defects (snags), checks and inspects	8

Activity Periods:

Learning Objectives	List of Activities
4.1 Store equipment and clean the work area. .	All
4.2 Remove parts and handle them safely.	3, 4, 6, 7, 9, 10

List of Activities

1.	Introduction	3 hours
2.	Planning	3 hours
3.	Daily inspection on the Cessna 172 and the Piper PA 31P	3 hours
4.	Daily inspection on the Falcon 20	3 hours
5A.	Exam	1.5 hours
5B.	Inspection of engine controls	1.5 hours
6.	Inspection of the ignition system of a piston engine	3 hours
7.	Verification of the differential compression of a piston engine	3 hours
8.	Inspection of the airframe of an aircraft	3 hours
9.	Inspection and test operation of the retractable landing gear of an aircraft	3 hours
10.	Establish a ground run on a single engine or twin engine piston engine aircraft	3 hours
11.	Write up technical problems	3 hours
12.	Removal, inspection and installation of a Falcon 20 wheel	3 hours
13.	Implement an airworthiness and/or service bulletin	3 hours
14.	Carry out lubrification on an aircraft.	3 hours
15.	Final exam.	3 hours
	Total :	**45** hours

SYNTHESIS OF SUMMATIVE EVALUATION METHODS

Description of Evaluation Activity	Context	Learning Objective(s)	Due Date (approximate date assignment due or exam given)	Weighting (%)
Exam	Individually	1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4	Week 5	30%
Written reports of technical problems.	Individually	1.3, 1.4, 2.1, 3.9	Week 10 or 11	20%
Évaluation of competencies acquired during Activities 2, 3, 4, 6, 7, 9 and 10.	Work will be done in teams of 2 or 3 but evaluations will be individual	3.1, 3.2, 3.4, 3.6, 3.7, 4.1	Week 12	20%
Exam on Activities 2 through 9.	Individually	All	Week 15	30%
			TOTAL :	**100%**

List of Competencies Evaluatied During Pedagogical Activities:

Competency	Description	Weighting (%)
The ability to implement health and safety rules.	Clothing, tools, personal protection and equipment.	20%
The ability to follow and respect standards and specifications.	Maintenance manuals, CAR, AC43.13, airworthiness directives, service bulletins, advisory cirulars Manuels de maintenance, RAC, AC 43.13, consignes de navigabilité, bulletins de service, advisory circular type certificates	20%
The ability to evaluate the serviceability of components and systems.	Structural components, mechanical components, electrical components	20%
The ability to identify defects (snags).	Fuselage, wing, tail group, flight control surfaces, engines, landing gear, systems	20%
The ability to use equipment and tools appropriately.	Hand tools, electric tools pneumatic tools, equipment used for aircraft maintenance	10%
The ability to store and clean the work area.	Manuals, tools, aircraft components, workshop equipment	10%

REQUIREMENTS TO PASS THE COURSE

(1) Passing Mark

The passing mark for this course is 60%.

(2) Attendance for Summative Evaluations

Attendance at summative evaluation activities is mandatory.

(3) Submitting Assignments

Assignments must be submitted by the date, place and time determined by the instructor. Any assignment submitted after the due date will be penalized 10% per day for each day it is late up to a week. After one week, the assignment will receive a zero (0).

(4) Presentation of Written Work

Students must follow the standards adopted by the College for written work (*Normes de présentation matérielle des travaux écrits*). These can be found in the documentation centre on the College web site (http://ww2.college-em.qc.ca/biblio/normes.pdf) under the heading ***Aides à la recherché.***

REQUIREMENTS FOR CLASS PARTICIPATION

SECURITY MEASURES IN THE HANGARS

1. Smoking is prohibited.
2. Sitting on benches or machines is prohibited.
3. Shoes must be worn at all times (sandals are prohibited).
4. Machines must not be used without authorization for the instructor.
5. Caps or hairnets must be worn for long hair when working with the machinery.
6. Ties must be removed or tucked inside the shirt when working with machinery.
7. Sleeves with wide cuffs or fringe must not be worn when working near machinery.
8. Safety glasses must be worn when working on the machinery.
9. The machinery and benches must be cleaned after use.
10. The workshop must be cleaned after each course.
11. The bending machine may only be used by authorized personnel.
12. No aluminum or non-ferrous material on the grinders.
13. Suitcases, briefcases and towels are prohibited.
14. No one may circulate in the hangar unless authorized.
15. No visitors are allowed without authorization.

REQUIRED MATERIAL

Course notes, (the number will be provided by the instructor during the first course).

MEDIAGRAPHY

Maintenance d'aéronefs, méthodes, techniques et pratiques reconnues EA-AC 43.13-1A/2A, Department of Transportation (FAA), ©1989, 410 pages.

Aircraft Hardware Standards Manual and Engineering Reference, Stanley J. Dyik.

Airframe and Powerplant Mechanics AC 65-9A, General Handbook, Department of Transportation (FAA), ©1976.

Airframe and Powerplant Mechanics AC-65-12A, Powerplant Handbook, Department of Transportation (FAA), ©1976.

Airframe and Powerplant Mechanics EA-AC 65-15A, Airframe Handbook, Department of Transportation (FAA), ©1976.

Manuel de maintenance et de pièces des aéronefs.

Règlement de l'aviation canadien (RAC). Transports Canada, Centre d'édition du Gouvernement du Canada, Ottawa.

INSTITUTIONAL POLICIES AND REGULATIONS

All students enrolled at Collège 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, les conditions particulières concernant le maintien de l'admission d'un étudiant, la Politique de valorisation de la langue française, la Politique pour un milieu d'études et de travail exempt de harcèlement et de violence, les procédures et règles concernant le traitement des plaintes étudiantes.*

The full text of these policies and regulations is accessible on the College web site at the following address: www.college-em.qc.ca. 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.

OTHER DEPARTMENTAL REGULATIONS

Students are encouraged to consult the website for the specific regulations for this course:
www.college-em.qc.ca/ena/preenvol/reglements

NOTE: This Course Outline is a translation of the *Plan de cours* for 280-543-EM: *Stage en inspection d'avion*. If there is a discrepancy, then the original French version will be considered the official version for legal purposes.