

## COURSE OUTLINE

**COURSE:** **Metal Structural Repair**

**PROGRAM:** 280.C0 Aircraft Maintenance

**DISCIPLINE:** 280 Aeronautics

**WEIGHTING:** Theory: 2                      Practical: 4                      Personal Study: 1

| Instructor(s) | Office | ☎ extension | ✉ e-mail or website  |
|---------------|--------|-------------|--|
| Joaquin Mora  | C-186  | 4220        | <a href="mailto:joaquin.mora@cegepmontpetit.ca">joaquin.mora@cegepmontpetit.ca</a> |

### OFFICE HOURS

|           | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|-----------|--------|---------|-----------|----------|--------|
| Morning   |        |         |           |          |        |
| Afternoon |        |         |           |          |        |

| Dep. Coordinator(s) | Office | ☎ Extension | ✉ Email or Website   |
|---------------------|--------|-------------|--|
| Ashby, Paul-Anthony | C-160  | 4225        | <a href="mailto:paul-anthony.ashby@cegepmontpetit.ca">paul-anthony.ashby@cegepmontpetit.ca</a> |
| Arpin Stéphanie     | C-160  | 4630        | <a href="mailto:stephanie.arpin@cegepmontpetit.ca">stephanie.arpin@cegepmontpetit.ca</a>       |

## 1 CONTEXT OF THIS COURSE IN THE PROGRAM

This course is offered during the third session of the program. By the end of the course, students will have developed:

- dexterity with the tools and equipment;
- research skills using technical manuals;
- familiarity with materials and hardware;
- the ability to propose a preliminary report of a major repair;
- the ability to make major repairs to an aircraft frame and skin

**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.C0) 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)

The student will perform maintenance on aircraft structural parts.

## 3 MINISTERIAL OBJECTIVE(S) AND COMPETENCIES

- |             |   |
|-------------|---|
| <b>025X</b> | Conduct cleaning, inspection and protect aircraft materials (reinvestment only) |
| <b>025Z</b> | Prepare and assemble sheet metal  |
| <b>0261</b> | Maintain metal structures and structural components of an aircraft              |

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

At the end of this course, the student will know the nomenclature of an aluminum structure. He will be able to assess the severity of a damage, prepare a plan for its repair and finally, with the necessary tools, he will be able to perform the structural repair.

## 5 TEACHING AND LEARNING STRATEGIES

### Theory

The theoretical part of the course "Metal Structural Repair" is composed of different themes:

Riveting - Bending of aluminum sheets - Introduction to aluminum structures - Construction of an aluminum structure - Inspection of an aluminum structure - Tools for working aluminum sheet - Repairing an aluminum structure - Special fasteners - Aircraft center of gravity - Control surface balancing - Alignment and structural symmetry

Exercises and discussions in class will be used as a strategy to allow students to develop the necessary skills to perform maintenance on aircraft. Research assignments in technical manuals and the use of multimedia tools will reinforce the learning process.

### Practical Work

During the laboratory periods, the instructor will guide students with practical demonstrations of different tools and measuring instruments. Students will acquire manual dexterity and the competence necessary to be aircraft maintenance technicians through a variety of practical exercises that involve evaluating damage, treating corrosion and other observed defects. The different minor repair projects during the session will be assembled by riveting according to aeronautical standards. All activities will comply with the health and safety procedures applicable to the aeronautical industry.

## 6 COURSE PLAN

### THEORY

#### Competence 025Z: To prepare and assemble sheet metal

| Learning Objective  | Content  | Personal Study Activities   |
|---|--|---|
| 1- Describe methods of shaping and assembly of sheet metal.                           | <ul style="list-style-type: none"> <li>▪ Techniques of shaping sheet metal</li> <li>▪ Techniques of assembly</li> <li>▪ Hardware:                             <ul style="list-style-type: none"> <li>- Solid rivets;</li> <li>- Blind rivets;</li> <li>- High-stress fasteners;</li> <li>- Specialized fasteners.</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>▪ Review weekly formative questionnaire</li> <li>▪ Consult course website (280-376).</li> <li>▪ Consult recommended readings.</li> <li>▪ Review personal notes.</li> </ul> |
| 2- Describe the characteristics of sheet metal tools and demonstrate their operation. | <ul style="list-style-type: none"> <li>▪ Rules, characteristics and operation of cutting, measuring, marking, folding and finishing tools</li> </ul>   |   |
| 3- Recognize the risks to health and safety.  | <ul style="list-style-type: none"> <li>▪ Safe handling</li> <li>▪ Standards and guidelines that apply to the materials and technique used.</li> </ul>  |   |
| 4- Interpret technical drawings.  | <ul style="list-style-type: none"> <li>▪ Structural repair manual</li> <li>▪ Technical drawing</li> </ul>  |   |
| 5- Prepare and perform bending.   | <ul style="list-style-type: none"> <li>▪ Steps to follow :                             <ul style="list-style-type: none"> <li>- Establish the dimensions;</li> <li>- Draw a line of sight;</li> <li>- Bend using a press brake</li> <li>- Measure an angle</li> </ul> </li> </ul>  |   |

#### Competence 0261: To maintain the metal structures and structural components of an aircraft

| Learning Objective   | Content  | Personal Study Activities   |
|--|--|---|
| 1- Identify the structural members                                 | <ul style="list-style-type: none"> <li>▪ frames</li> <li>▪ spars</li> <li>▪ ribs</li> <li>▪ stringers</li> <li>▪ skin</li> <li>▪ struts</li> <li>▪ reinforcements (stiffeners)</li> <li>▪ bulkheads</li> </ul>                                       | <ul style="list-style-type: none"> <li>▪ Review weekly formative questionnaire</li> <li>▪ Consult course website (280-376).</li> <li>▪ Consult recommended readings.</li> <li>▪ Review personal notes.</li> </ul> |
| 2- Recognize the stresses applied to the metal structural members. | <ul style="list-style-type: none"> <li>▪ Tension</li> <li>▪ Compression</li> <li>▪ Shearing</li> <li>▪ Bending</li> <li>▪ Torsion</li> <li>▪ Flight control area</li> </ul>  |   |
| 3- Explain the structure of structural repair manuals.             | <ul style="list-style-type: none"> <li>▪ ATA Classification</li> <li>▪ Manufacturers' Manuals</li> </ul>   |   |
| 4- Identify the causes of damage.                                  | <ul style="list-style-type: none"> <li>▪ Possible causes :                             <ul style="list-style-type: none"> <li>- corrosion</li> <li>- collision</li> <li>- fatigue</li> <li>- lightning strike</li> <li>- heat</li> </ul> </li> </ul> |   |

| Learning Objective  | Content   | Personal Study Activities |
|---|---|---------------------------|
| 5- Follow the path of stresses in the adjacent structures to detect damage.   | <ul style="list-style-type: none"> <li>▪ Tension</li> <li>▪ Compression</li> <li>▪ Shearing</li> <li>▪ Bending</li> <li>▪ Torsion</li> <li>▪ Bending moment</li> <li>▪ Shear force</li> </ul> |                           |
| 6- Identify the tolerances of damaged areas in the structural repair manuals. |   |                           |
| 7- Determine the action to take following the inspection.                     | <ul style="list-style-type: none"> <li>▪ Treatment</li> <li>▪ Typical repair</li> <li>▪ Specific repair</li> <li>▪ Temporary repair</li> <li>▪ Replacement</li> </ul>                         |                           |
| 8- Write a work report.   | <ul style="list-style-type: none"> <li>▪ Preliminary report</li> <li>▪ Work report</li> </ul>   |                           |

### PERIODS OF THEORETICAL ACTIVITIES

- Week 1**
  - Presentation of the Course Outline
  - Theory: Tooling and Riveting Review
- Week 2**
  - Theory: Sheet metal bending
- Week 3**
  - Theory: Corner bends – Doublers - Insertion
- Week 4**
  - **Exam # 1**
- Week 5**
  - Theory: ATA 100 – Repair Manuals – Corrosion Protection – Aircraft Structures
- Week 6**
  - Theory: Basic principles of Structural Repairs – Structure Loads pt.1
- Week 7**
  - Theory: Structure Loads pt.1 – Load Factor - Fatigue
- Week 8**
  - Theory: Preliminary report for a typical repair
- Week 9**
  - **Exam # 2**
- Week 10**
  - Theory: Special Fasteners
- Week 11**
  - Theory: Weight and balance- Center of Gravity (CG)
- Week 12**
  - Theory: Flight Controls Balancing
- Week 13**
  - Theory: Structure symmetry and alignment
- Week 14**
  - **Exam # 3**
- Week 15**
  - Feedback Return on the final exam

**PRACTICAL WORK (LABORATORY)**

**Competence 025X: To clean, inspect and protect aircraft materials (reinvestment only)**

| Learning Objective                         | Content   | Personal Study Activities                           |
|--|---|---|
| Review of course material<br>Minor repairs | <ul style="list-style-type: none"> <li>▪ Treat damage that has been authorized</li> <li>▪ Polish damage</li> <li>▪ Drill stop holes</li> <li>▪ Filling compound</li> <li>▪ Reinforcement and plug</li> <li>▪ Protection of the materials</li> </ul> | All activities aimed at improving manual dexterity. |

**Competence 025Z: To prepare and assemble sheet metal**

| Learning Objective                            | Content  | Personal Study Activities                           |
|---|--|---|
| Recycling of course material<br>Minor repairs | <ul style="list-style-type: none"> <li>▪ Consult structural repair manual for general tolerances and the type of minor or major repair.</li> <li>▪ Use appropriate measuring tools.</li> <li>▪ Assess damage regarding tolerances, standards and specifications.</li> <li>▪ Treat for authorized damage.</li> <li>▪ Eliminate and treat for corrosion</li> </ul> | All activities aimed at improving manual dexterity. |

| Learning Objective   | Content  | Personal Study Activities                           |
|--|--|---|
| 1- Describe the characteristics of sheet metal tools and demonstrate their operation.    | <ul style="list-style-type: none"> <li>▪ Rules, characteristics and operation of cutting, measuring, tracing, bending and finishing tools.</li> </ul>  | All activities aimed at improving manual dexterity. |
| 2- Choose tools depending on the shaping and assembly technique used in the repair work. | <ul style="list-style-type: none"> <li>▪ How to use tools and repair equipment.</li> <li>▪ Planning</li> <li>▪ Organising</li> </ul>   |   |
| 3- Interpret technical drawings.   | <ul style="list-style-type: none"> <li>▪ Structural Repair Manual</li> <li>▪ Technical drawing</li> </ul>  |   |
| 4- Size and trim materials.  | <ul style="list-style-type: none"> <li>▪ Calculations of developed pieces of sheet metal</li> <li>▪ Measurements</li> <li>▪ Portable cutting tool</li> <li>▪ Fixed cutting tool</li> </ul>   |   |
| 5- Prepare and perform bending   | <ul style="list-style-type: none"> <li>▪ Steps to follow :                             <ul style="list-style-type: none"> <li>- Establish the dimensions;</li> <li>- Draw a line of sight;</li> <li>- Bend with a press brake;</li> <li>- Measure an angle</li> </ul> </li> </ul>  |   |
| 6- Prepare and perform riveting.   | <ul style="list-style-type: none"> <li>▪ Steps to follow :                             <ul style="list-style-type: none"> <li>- Select the rivet</li> <li>- center</li> <li>- drill</li> <li>- deburr</li> <li>- mill</li> <li>- rivet installation using mobile and fixed tools;</li> <li>- install mechanical rivets</li> <li>- remove the rivets</li> </ul> </li> </ul> |   |

| Learning Objective   | Content   | Personal Study Activities |
|--|---|---------------------------|
| 7- Finish the shaped and assembled part  | <ul style="list-style-type: none"> <li>▪ File and polish</li> </ul>   |                           |
| 8- Select and use measurement tools to check assembly compliance with technical drawings and aeronautical standards. | <ul style="list-style-type: none"> <li>▪ Ruler</li> <li>▪ Micrometer</li> <li>▪ Vernier.</li> <li>▪ Protractor</li> </ul> |                           |
| 9- Respect the health and safety standards related to the work performed.  | <ul style="list-style-type: none"> <li>▪ Respect standards and instructions.</li> </ul>                                   |                           |
| 10- Store tools and equipment. Clean the work area.  | <ul style="list-style-type: none"> <li>▪ Follow instructions</li> <li>▪ Professionalism</li> </ul>                        |                           |

**Competence 0261: To maintain the metal structures and structural components of an aircraft.**

| Learning Objective   | Content   | Personal Study Activities                           |
|--|---|---|
| 1- Identify damage on parts.   | <ul style="list-style-type: none"> <li>▪ Wrinkling, cracking, folds, rubbing, scratching, hollows, notches, breaks, swelling, buckling, warping, erosion, delamination, blisters, bumps, cuts, vacuum, wear, corrosion, brittleness</li> </ul>  | All activities aimed at improving manual dexterity. |
| 2- Inspect structures and metal components on the aircraft to identify damage.                                   | <ul style="list-style-type: none"> <li>▪ Measuring tools</li> <li>▪ Structural alignment</li> <li>▪ NDT methods</li> </ul>  |   |
| 3- Follow the path of stresses in the adjacent structures to detect damage                                       | <ul style="list-style-type: none"> <li>▪ Tension</li> <li>▪ Compression</li> <li>▪ Shearing</li> <li>▪ Bending</li> <li>▪ Torsion</li> <li>▪ Bending moments</li> <li>▪ Shear force</li> </ul>  |   |
| 4- Identify the tolerances of the damaged areas in the structural repair manuals.                                |   |   |
| 5- Compare the inspection results with the specifications for structural repair manuals.                         |   |   |
| 6- Determine the action to take based on the inspection results  | <ul style="list-style-type: none"> <li>▪ Treatment</li> <li>▪ Typical repair</li> <li>▪ Specific repair</li> <li>▪ Temporary repair</li> <li>▪ Replacement</li> </ul>   |   |
| 7- Organize the work environment based on the work that needs to be done.  | <ul style="list-style-type: none"> <li>▪ Structural repair manual</li> <li>▪ Airworthiness standards</li> <li>▪ Temps available</li> <li>▪ Workplace</li> </ul>   |   |
| 8- Perform a repair on an unpressurized aircraft structure (skin, extruded parts, molded parts, machined parts). | <ul style="list-style-type: none"> <li>▪ Following a procedure</li> <li>▪ Interpreting a drawing</li> <li>▪ Using marking, cutting, drilling, riveting, assembly, shaping and finishing tools.</li> <li>▪ Protection of materials</li> <li>▪ Sealants</li> <li>▪ Interior set up</li> </ul> |   |

| Learning Objective   | Content   | Personal Study Activities |
|--|---|---------------------------|
| 9- Perform a repair on a pressurized aircraft structure (skin, extruded parts, molded parts, machined parts).                | <ul style="list-style-type: none"> <li>▪ Following a procedure</li> <li>▪ Interpreting a drawing</li> <li>▪ Using marking, cutting, drilling, riveting, assembly, shaping and finishing tools.</li> <li>▪ Protection of materials</li> <li>▪ Sealants</li> <li>▪ Interior set up</li> </ul>                       |                           |
| 10- Select and use measurement tools to verify compliance of an assembly with technical drawings and aeronautical standards. | <ul style="list-style-type: none"> <li>▪ Ruler</li> <li>▪ Micrometer</li> <li>▪ Vernier</li> <li>▪ Protractor</li> <li>▪ Compass</li> <li>▪ Flight control balancing tools</li> <li>▪ Structural alignment</li> </ul>   |                           |
| 11- Write a work report.   | <ul style="list-style-type: none"> <li>▪ Preliminary report</li> <li>▪ Work report</li> </ul>   |                           |
| 12- Respect the health and safety standards related to the work done.  | <ul style="list-style-type: none"> <li>▪ Respecting standards and instructions</li> </ul>   |                           |
| 13- Use the standards for hazardous materials.   | <ul style="list-style-type: none"> <li>▪ Using the information system on hazardous materials at work (WHMIS)</li> <li>▪ Using material safety data sheets and following precautions when handling.</li> </ul>   |                           |
| 14- Put away tools and equipment and clean up the work area.   | <ul style="list-style-type: none"> <li>▪ Following instructions</li> <li>▪ Professionalism</li> </ul>   |                           |
| 15- Demonstrate professional skills.   | <ul style="list-style-type: none"> <li>▪ Dexterity.</li> <li>▪ Organization.</li> <li>▪ Planning.</li> <li>▪ Autonomy.</li> <li>▪ Quality of work.</li> <li>▪ Cleanliness at work.</li> <li>▪ Yield.</li> <li>▪ Health safety.</li> <li>▪ Communication.</li> <li>▪ Ability to understand and execute.</li> </ul> |                           |
| 16- Demonstrate personal skills.   | <ul style="list-style-type: none"> <li>▪ Interest in work.</li> <li>▪ Punctuality.</li> <li>▪ Attendance.</li> <li>▪ Sense of responsibility.</li> <li>▪ Relationship with others.</li> <li>▪ Judgment.</li> </ul>  |                           |

**PERIODS OF LABORATORY ACTIVITIES**

- Week 1**
- Sheet metal paper plane
  - Formative evaluation: Sheet metal paper plane
- Week 2**
- Fuselage round reinforcement
- Week 3**
- Formative evaluation: Round fuselage patch
  - Homework: Wings bending presses
- Week 4**
- Homework verification: Wing bending presses
  - Bending practice
  - Precision bending of the wings of the biplane
- Week 5**
- Work on the biplane
  - Presentation Exam # 1
- Week 6**
- **Exam # 1: Manufacture and installation of an L-shaped stringer (10/60)**
- Week 7-8-9**
- Repair of the L-shaped stringer
  - **Summative evaluation: Repair of the L-shaped stringer (10/60)**
  - **Summative evaluation: The biplane (5/60)**
- Week 10**
- Manufacture and installation of a Z-shaped stringer
  - Formative Evaluation: Manufacture and installation of a Z-shaped stringer
- Week 11-12-13**
- Repair of skin near a Z-shaped stringer
- Week 14**
- **Summative evaluation: Repair of skin near a Z-shaped stringer (10/60)**
  - (Homework) Drafting of the repair document
- Week 15**
- **Exam # 2: Repair of the free flange of a Z-shaped stringer (25/60)**



**7 SYNTHESIS OF SUMMATIVE EVALUATION METHODS:**

**THEORY**

| Description of Evaluation Activity                 | Context of realization and mode of evaluation | Learning Objective(s)                      | Due Date<br>(Approximate date assignment due or exam given) | Weighting (%) |
|--|---|--|---|---------------|
| Exam # 1, on the notions activity periods 1 to 4   | Individual, written exam, (Without notes)     | 025Z<br>(1)<br>0261<br>(1, 2, 3, 5)        | Week 4  | 10            |
| Exam # 2, on the notions activity periods 6 to 9   | Individual, written exam, (Without notes)     | All objectives of the skills 025Z and 0261 | Week 9  | 10            |
| Exam # 3, on the notions activity periods 11 to 13 | Individual, written exam, (Without notes)     | All objectives of the skills 025Z and 0261 | Week 14   | 20            |

**Total: 40 points**

**PRACTICAL WORK**

| Description of the evaluation activity  | Context of realization and method of evaluation | Learning objective(s)  | Due Date<br>(Approximate date assignment due or exam given) | Weighting (%) |
|---|---|--|---|---------------|
| Manufacture and installation of a Z-Stringer  | Individually, practical work                    | 025Z<br>(1 to10)<br>025X   | Week 6  | 10            |
| <b>Evaluation criteria:</b> Accuracy of calculations, accuracy of drawing, dimensional accuracy of the manufactured part, precision and cleanliness of rivets executed, assembly corresponding to the drawing, cleanliness of the assembly. |   |  |   |               |
| Repair of Skin near L-Stringer.   | Individually, practical work                    | 025Z<br>(2, 3, 4, 5, 6, 7, 8)<br>0261<br>(1, 2, 6, 7, 8, 10, 11, 12, 13, 14) | Week 8  | 10            |
| <b>Evaluation criteria:</b> Dimensional accuracy of the repair, precision and cleanliness of the rivets executed, assembly corresponding to the drawing, cleanliness of the assembly.   |   |  |   |               |
| Building a biplane  | Individually, practical work                    | 025Z<br>(2, 3, 4, 5, 6, 7, 8)<br>0261<br>(1, 2, 6, 7, 8, 10, 11, 12, 13, 14) | Week 9  | 5             |
| <b>Evaluation criteria:</b> Dimensional accuracy of the repair, precision and cleanliness of the rivets executed, assembly corresponding to the drawing, cleanliness of the assembly.   |   |  |   |               |
| Repair of skin near a Z-shaped stringer   | Individually, practical work                    | 025Z<br>(2, 3, 4, 5, 6, 7, 8)<br>0261<br>(1, 2, 6, 7, 8, 10, 11, 12, 13, 14) | Week 14   | 10            |

|  |                              |  |         |    |
|--|------------------------------|--|---------|----|
| <b>Evaluation criteria:</b> Dimensional precision of the assembly, precision and cleanliness of the rivets executed, assembly corresponding to the drawing, cleanliness of the assembly. |                              |  |         |    |
| Repair of the free flange of a Z-shaped stringer   | Individually, practical work | 025X and 025Z<br>(2, 3, 4, 5, 6,<br>7, 8, 9, 10)<br><br>0261<br>(7, 8, 10, 11) | Week 15 | 25 |
| <b>Evaluation criteria:</b> Dimensional precision of the assembly, precision and cleanliness of the rivets executed, assembly corresponding to the drawing, cleanliness of the assembly. |                              |  |         |    |

**Total                    60 points**

**Total Theory (40%) + Total Laboratory (60%) = 100%**

## 8 REQUIRED MATERIAL

In the laboratory, safety glasses, safety shoes are mandatory. Authorized clothing for students is ÉNA overalls OR ÉNA polo and black work pants only.

## 9 MEDIAGRAPHY

ACCEPTABLE METHODS, TECHNIQUES AND PRACTICES; V. 1 : AIRCRAFT INSPECTION AND REPAIR, AC 4313-1A, V. 2 : AIRCRAFT ALTERATIONS, AC 4313-2A, *Department of Transportation. Federal Aviation Administration.* Washington D.C., U.S. Government Printing Office, 1977, 2 volumes.

AIRCRAFT STRUCTURAL TECHNICIAN, *Dale Hurst*, Avotek Publishing, Harrisonburg, Virginia, 2001, 272 pages.

STANDARD AIRCRAFT HANDBOOK, *Leavell, Stuart et Stanley BUNGAY*, 3<sup>e</sup> éd., Fallbrook, Calif., Aero, 1980, 159 pages.

AIRCRAFT SHEET METAL, *Nick Bonaci*, International Aviation Publisher, EA-SM, Casper (Wyoming), 1987, 134 pages.

UNDERSTANDING AIRCRAFT STRUCTURE, *John Cutler*, Granada Publishing Ltd, Frogmore (England), 1981, 170 pages.

CELLULES ET SYSTÈMES D'AÉRONEFS, *Didier Féminier*, Modulo Éditeur, Mont-Royal, 1982, 315 pages, chapitres 1 à 4, pages 1 à 69.

A & P TECHNICAL AIRFRAME TEXTBOOK, *Jeppesen*, EA-ITP-A<sup>2</sup>, Englewood, Colorado, 1992, 794 pages, chapitres 3, 5 et 6.

## **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**

For pedagogical reasons, some courses may be recorded. It is the teacher's responsibility to clearly inform students beforehand when their images and voices are to be captured on video. Any student opposed to his image and/or voice being recorded may turn off his camera and microphone but will be required to participate in writing through means established by the teacher. Otherwise, students who activate their cameras or their microphones are deemed to have agreed to their images and voices being taped. These recordings of courses will be available for the express and sole use of those students registered in the courses for the duration of the semester. It is strictly forbidden to broadcast these recordings in any public manner or to use them other than for pedagogical purposes.

No student may record an online course without prior consent from the teacher. Students whose personal information (voices and images) is captured on video may exercise such remedies as provided by the right to access records and the right of rectification per the Act respecting access to documents held by public bodies and the protection of personal information through the Cegep's Secretary General's Office.

### **Safety Regulations for Workshop Personal**

1. Running is prohibited.
2. Loose clothing and hair must be pulled back, tightened or tucked in when using rotational equipment (e.g. ties, sleeves, long hair).
3. Hand tools and workshop equipment are to be used only after a demonstration.
4. No work may be done in the workshop without the supervision of an instructor.
5. Small metal parts to be drilled (manually or with a drill press) must be held in place with clamps.
6. All dangerous products should be used in a ventilated area (paint shop).
7. Sitting on the workbenches or machines is prohibited.
8. Visual and auditory instructions in case of a fire must be followed by everyone.
9. Any accident must be reported to authorized staff; the guard must be notified if first aid is not sufficient.

### **Safety Regulations for Workshop Equipment**

1. Clean the workshop after each course (tables, workbenches, floor, etc.)
2. Clean workshop equipment after each use (drill press, sandblaster, grinder, etc.)
3. No aluminum material or non-ferrous material may be used on the grinders.
4. Respect directives regarding materials when using the bandsaw.
5. Return all workshop equipment to its appropriate place after use.
6. Report any defective or damaged equipment or tools.
7. Correctly maintain the classification of rivets or bolts.

## **12 OTHER DEPARTMENT 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