

- COURSE DESCRIPTION:** This curriculum is based upon the Welding Curriculum designed for Heavy Equipment and Truck Coach Apprentices and approved by the Ministry of Training, Colleges and Universities. No changes should be made to it without prior examination of the specific Learning Outcomes / Content of the Ministry document.
- I.**
- II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

Upon successful completion of this course, the student will demonstrate the ability to:

1. ***Identify equipment and procedures required to assure personal safety while engaged in shop activities.***

Potential Elements of the Performance:

- identify proper work boots, gloves and eye protection
- identify recommended fabrics and materials for personal protective clothing
- understand the general organization and layout of the welding shop facility
- locate and identify shop lighting and ventilation controls
- locate and identify emergency exits
- identify and select proper shades of welding / cutting lens
- identify, select and adjust helmets for proper fit and vision
- understand procedures for evacuation of shop areas in the case of emergencies

2. ***Describe the functions, construction features, types and application of oxyacetylene heating and cutting equipment.***

Potential Elements of the Performance:

- cylinders
 - identification
 - general construction
- pressure regulators
- manual valves
- manifold systems
- gages and hoses
- torch body
- tips
 - cutting
 - heating
 - welding
- cutting attachments
- flashback arrestors

3. ***Describe the principles of operation of oxyacetylene heating and cutting equipment.***

Potential Elements of the Performance:

- cylinders
- pressure regulators
- manual valves
- manifold systems
- gages and hoses
- torch body
- tips
 - cutting
 - heating
 - welding
- cutting attachments
- flashback arrestors

4. ***Describe the manufacturer's system maintenance procedures for oxyacetylene heating and cutting equipment.***

Potential Elements of the Performance:

- cylinders
- pressure regulators
- manual valves
- manifold systems
- gages and hoses
- torch body
- tips
 - cutting
 - heating
 - welding
- cutting attachments
- flashback arrestors

5. ***Identify the purpose and fundamentals of heating and cutting practices.***

Potential Elements of the Performance:

- eye, face hand, foot and clothing protection required for a specific task
- oxy-fuel gases & fire prevention
- cylinder handling
- set-up, ignition and shut-down practices
- unsafe personal items (jewellery, matches and butane lighters)
- flashback and backfire
- removing damaged or broken fasteners
- using heat to free seized fasteners

6. ***Perform basic heating and cutting procedures following manufacturer's recommendations and perform assigned operations***

Potential Elements of the Performance:

- perform a demonstration of correct oxygen and acetylene pressure settings
- perform a demonstration of ignition procedures
- select heating and cutting tips
- observe tip angle, travel speed and work to tip distance
- demonstrate awareness of potential for damage to surrounding materials from heating or cutting operations
- identify potential risk for altering metallurgical properties
- perform appropriate pressure settings, ignition and flame adjustments for specific heating and cutting tasks
- remove damaged or broken fasteners
- perform heating and removal procedures of seized fasteners

III. **TOPICS:** *Clients may expect the following list of topics to be covered during this course of instruction.*

1. Identify equipment and procedures required to assure personal safety while engaged in shop activities.
2. Describe the functions, construction features, types and application of oxyacetylene heating and cutting equipment
3. Describe the principles of operation of oxyacetylene heating and cutting equipment.
4. Describe the manufacturer's system maintenance procedures for oxyacetylene heating and cutting equipment.
5. Identify the purpose and fundamentals of heating and cutting practices.
6. Perform basic heating and cutting procedures following manufacturer's recommendations and perform assigned operations.

IV. **REQUIRED RESOURCES/TEXTS/MATERIALS:**

- CSA Approved (Impact Resistant) Safety Glasses
- CSA Approved (8 inch High Cut) Safety Work Boots
- CSA Approved (Gauntlet Type) Welding Gloves
- Appropriate Work Wear (see 'Welding Shop Guidelines)
- Pocket Note-pad (for shop demonstrations)
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V. EVALUATION PROCESS/GRADING SYSTEM:

The final course grade will be determined by means of the following list of weighted factors

Factor	Weight
Shop Assignments	50 %
Theory Assignment / Test	50 %

The following grades will be assigned to students.

Grade	Definition	Grade Point Equivalent
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
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.	

VI. SPECIAL NOTES:

Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 493 so that support services can be arranged for you.

Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

<include any other special notes appropriate to your course>

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.