Fleming College

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Course Outline

Course Title:	Welding for Carpenters		
Course Number:	MECH43	**Approval Date:**	2018/1/10
Course Hours:	16 hours	**Academic Year:**	2017
Academic School:	School of Trades & Technology		
Faculty:	Gary Hoadley - Gary.Hoadley@flemingcollege.ca Scott Fleming - scott.fleming@flemingcollege.ca		
Program Co-ordinator or Equivalent:	Scott Fleming - scott.fleming@flemingcollege.ca		
Dean (or Chair):	Maxine Mann - maxine.mann@flemingcollege.ca		

Course Description

The apprentice will develop knowledge of both the Oxy-Fuel (OFW) and Arc Welding (SMAW) processes. The theory and practice of safe practices, set-up, and operating principles will be taught. Fusion welding on light and heavy steel in the flat and horizontal positions, and brazing and manual flame cutting will be taught.

Prerequisites: None.

Corequisites: None.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. List and omrecognize hazards associated with the (OFW. and SMAW.) welding and cutting processes.
2. List and define the technical terms associated with the above welding and cutting processes.
3. Describe the construction of oxygen and acetylene cylinders.
4. Demonstrate cylinder and welding/cutting equipment safe handling procedures.
5. Recall the basic principle behind the flame cutting process.
6. Identify basic joints and welds and methods of controlling distortion.
7. Describe fusion welding and non-fusion welding and be able to compare shielded metal arc to gas metal arc welding.

8. Identify the operating principles of basic power sources as used in arc welding.
9. Develop personal skills in fusion and nonfusion welding as well as manual torch cutting.
10. Develop personal skills in setting up and making basic welds with the arc welder.

Vocational Outcomes: This course supports the standards and practices defined by the Apprenticeship Curriculum Standard, General Carpenter, as sanctioned by the Ontario College of Trades.

General Education Goal Area: Inter Provincial (Red Seal) Certificate of Qualification.

Prerequisites: Each candidate must be indentured to a qualified contractor or union, be registered with the Ministry of Training, Colleges and University as an apprentice and a member in good standing with the Ontario College of Trades.

Passing grade of 60% is required.

Generic Skills Outcomes:
To successfully apply the knowledge and skills gained in this course, to problems encountered at/in the workplace.

Learning Resources

Faculty will supply various handouts as required.

Students will require:

- Safety Boots
- Safety Glasses

It is required that all students wear safety boots in the welding and carpentry labs.
Students wearing canvas or open toed shoes will not be allowed in the welding or carpentry labs.

Assessment Summary

Assessment Task	Percentage
Labs	70%
Assignments	20%
Tests	10%

Student Success: Policies and Procedures

Mutually, faculty and learners will support and adhere to college Academic Regulations, and Student Rights and Responsibilities. The following policies and guidelines have been developed to support the learning process.

Please click on the link for information about:

- Student Rights and Responsibilities (flemingcollege.ca/PDF/Student-Rights-And-Responsibilities.pdf)
- Grading and Academic Standing (https://department.flemingcollege.ca/hr/attachment/7752/download)
- Academic Integrity (http://department.flemingcollege.ca/hr/attachment/7750/download)
- Guidelines for Professional Practice: Students and Faculty (flemingcollege.ca/PDF/guidelines-for-professional-practice-students-faculty.pdf)

Alternate accessible formats of learning resources and materials will be provided, on request.

Program Standards

The Ministry of Advanced Education and Skills Development oversees the development and the review of standards for programs of instruction. Each college is required to ensure that its programs and program delivery are consistent with these standards, and must assist students to achieve these essential outcomes.

This course contributes to Program Standards as defined by the Ministry of Advanced Education and Skills Development (MAESD). Program standards apply to all similar programs of instruction offered by colleges across the province. Each program standard for a postsecondary program includes the following elements:

- **Vocational standards** (the vocationally specific learning outcomes which apply to the program of instruction in question);
- **Essential employability skills** (the essential employability skills learning outcomes which apply to all programs of instruction); and
- **General education requirement** (the requirement for general education in postsecondary programs of instruction that contribute to the development of citizens who are conscious of the diversity, complexity and richness of the human experience; and, the society in which they live and work).

Collectively, these elements outline the essential skills and knowledge that a student must reliably demonstrate in order to graduate from the program. For further information on the standards for your program, follow the MAESD link (www.tcu.gov.on.ca/pepg/audiences/colleges/progstan/)

Detail Plan

Term: 2018 Winter **Session Code:** YGD

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Learning Plan

Wks/Hrs Units	Topics, Resources, Learning, Activities	Learning Outcomes	Assessment
2 hours	introduction to Lab safety and Cylinder safety. Safely setting pressure/lighting torches and shutdown procedures. Introduction to but/lap/t-joints	1,2,3,4,6	
	Work on OFB all demonstrated joints in preparation for assessment. Introduction to OFC- sfety/start-up/shut-down procedures	1,2,3,4,5,6	
	OFB-OFC assesment	5,9	Both assessments to be completed in lab.
	Introduction to SMAW using 1/8 6013 electrodes. Machine set-up and shut-down	2,6,10	
	Continue practicing SMAW process in preparation for final assessment.	2,6,10	
	SMAW Assessment due	2,6,10	

Assessment Requirements

Assessment Task	Date/Weeks	Course Learning Outcome	Percentage
Sample joints Brazing-25%	Week 3		25%
Manual flame cutting	Week 3		25%
Arc welding- 1F&2F welds using 1/8 6013 electrodes	Week 6		25%

Note: Participation in shop maintenance is mandatory. Weekly Clean-Up Checklists are to be completed and submitted as part of your weekly homework. These checklists will be assessed and included in your marks.

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Prior Learning and Assessment and Recognition (PLAR)

PLAR uses tools to help learners reflect on, identify, articulate, and demonstrate past learning which has been acquired through study, work and other life experiences and which is not recognized through formal transfer of credit mechanisms. PLAR options include authentic assessment activities designed by faculty that may include challenge exams, portfolio presentations, interviews, and written assignments. Learners may also be encouraged and supported to design an individual documentation package that would meet the learning requirements of the course. Any student who wishes to have any prior learning acquired through life and work experience assessed, so as to translate it into a college credit, may initiate the process by applying through the Registrar's office. For more information please click on the following link: http://flemingcollege.ca/admissions/prior-learning-assessment-and-recognition

Course Specific Policies and Procedures

It is the responsibility of the student to retain this course outline for future reference. Course outlines may be required to support applications for advanced standing and credit transfer to other educational institutions, portfolio development, PLAR and accreditation with professional associations.