

## CONSTRUCTION TRADES DEPARTMENT

### COURSE OUTLINE – Winter 2023

#### ITW12: GMAW, FCAW, MCAW, SAW Theory – 2 (4-0-0) 48 Hours for 12 Weeks

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.

**INSTRUCTOR:**  
**MANDY PEEVER.**  
**OFFICE:**  
**OFFICE HOURS:**

**PHONE:**  
**E-MAIL:**

**CALENDAR DESCRIPTION:** This course covers the gas metal arc welding (GMAW), flux core arc welding (FCAW), metal-cored arc welding (MCAW), and submerged arc welding (SAW) theory components of Alberta Apprenticeship Welder Training, 1<sup>st</sup> Period. Topics include: power source feeders, filler metals, shielding gas, troubleshooting and maintenance.

**PREREQUISITE(S)/COREQUISITE:** Program admission requirements

#### **REQUIRED TEXT/RESOURCE MATERIALS:**

- CWB Pre-Employment Manual
- I,P,T, Pipe Trades Training Manual (optional)
- I.P.T. Metal Trades Training Manual (optional)
- Metals and How to Weld Them (optional)
- Calculator – Suggested is the Casio FX-260 (same as the one supplied for AIT Exam)
- HB pencils, white eraser

**DELIVERY MODE(S):** Lecture

**COURSE OBJECTIVES:** Upon successful completion of this course, students should be able to demonstrate knowledge and competency in wirefeed theory and practical application.

**LEARNING OUTCOMES:**

- Select wire feed welding equipment
- Select wire feed welding consumables
- Select shielding gases for the wire feed process
- Set up, maintain and troubleshoot wire welding equipment
- Explain aluminum properties and principles
- Describe the components and operations of the SAW process

**TRANSFERABILITY:**

Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at the Alberta Transfer Guide main page <http://www.transferalberta.ca>.

**\*\* Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

**EVALUATIONS:**

**GRADING CRITERIA:** A student must pass each course individually in order to receive a Certificate of Achievement in the Pre-Employment Welding Program. Absences for tests, or assignments missed, will result in a score of zero. No supplemental tests and/or examinations available.

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	90-100		C+	2.3	67-69
A	4.0	85-89		C	2.0	63-66
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

**COURSE SCHEDULE/TENTATIVE TIMELINE:****STUDENT RESPONSIBILITIES:**

- Read and review welding program rules and regulations
- Students who do NOT comply with the rules and regulations will be asked to leave the program
- Purchase books, supplies and safety clothing as outlined by the instructor
- Read and complete assignments as outlined by the instructor

- Acquaint themselves with missed test announcements, worksheet assignments, theory concepts taught, and lab assignments presented
- Prearrange any missed time with instructor

**STATEMENT ON PLAGIARISM AND CHEATING:**

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the Northwestern Polytechnic Calendar at <https://www.nwpolytech.ca/programs/calendar/> or the Student Rights and Responsibilities policy which can be found at <https://www.nwpolytech.ca/about/administration/policies/index.html>.

\*\*Note: all Academic and Administrative policies are available on the same page.

**Additional Information (Optional):**

Instructors may add whatever they want here.