

DEPARTMENT OF TRANSPORTATION TRADES THINKBIG SERVICE TECHICIAN COURSE OUTLINE – FALL 2023 AUGUST 28, 2023 - OCTOBER 20, 2023 HES141 VA11 – HYDRAULIC FUNDAMENTALS – BASICS – 2.0 (56 HOURS)

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:	Darcy Moss	PHONE:	780.835.6765
OFFICE:	FPS 119	E-MAIL:	dmoss@nwpolytech.ca
OFFICE HOURS:	8 AM to 4:30 PM		

CALENDAR DESCRIPTION: Basic principles of hydraulics, hydraulic oil, contamination control principles, basic systems and components are examined in this course. As well, the students are introduced to ISO schematics and symbology.

PREREQUISITE(S)/COREQUISITE: None

REQUIRED TEXT/RESOURCE MATERIALS:

Caterpillar Material

Hydraulic Fundamentals

Unit 1: Safety and Hydraulic Training Unit Lesson 1 – Safety and Hydraulic Training Unit

Unit 2: Hydraulic Principles.

Lesson 1 – Hydraulic Principles

Unit 3: Hydraulic System Components

- Lesson 1 Fluid Reservoirs and Hoses
- Lesson 2 Hydraulic Fluids and Fluid Conditioners
- Lesson 3 Hydraulic Pumps and Motors
- Lesson 4 Pressure Control Valves
- Lesson 5 Direction Control Valves
- Lesson 6 Flow Control Valves
- Lesson 7 Cylinders

Alberta Apprenticeship and Industry Training Individual Learning Modules Heavy Equipment Technician (HET)

190103g –	Hydraulic Fundamentals
190103h –	Hydraulic System Components: Reservoir, Filters, Hoses and Coolers
190103i –	Hydraulic System Components: Pumps, Valves, and Cylinders

DELIVERY MODE(S):

In person delivery.

• Note: NWP reserves the right to change the course delivery.

LEARNING OUTCOMES:

TRANSFERABILITY: None.

CREDIT/CONTACT HOURS: Credits: 2.0 / Contact Hours: 56.

GRADING CRITERIA:

Students must complete all required courses with a grade point average of no less than 2.7 and no failing (F) grades. A passing grade in this course is a **minimum of 70%**.

Hydraulic	Fundamentals	56 / 240 hours = 23 % of Semester 1 mark
	Exams Average =	 x 45%
	Class Assignments/Quizzes =	 x 30%
	Shop Total	 x 25%

HES 141 VA11 FINAL MARK = _____%

Grades for this course will be assigned as a percentage.

COURSE SCHEDULE/TENTATIVE TIMELINE:

STUDENT RESPONSIBILITIES: This is an adult education environment. Enrolment at Northwestern Polytechnic assumes that the student will become a responsible citizen of the College. As such, each student will display a positive work ethic, take pride in and assist in the maintenance and preservation of Institute property, and assume responsibility for his/her education by researching academic requirements and policies, demonstrating courtesy and respect toward others; and respecting instructor expectations concerning attendance, classroom and shop rules, safety, assignments, deadlines and appointments. Students are learning skills to prepare them for the work environment.

Following the guidelines in "Student Rights and Responsibilities" in the NWP College calendar assist us all in maintaining an adult learning environment. Please refer to the Student Rights and Responsibilities policy in the Northwestern Polytechnic Calendar or at www.nwpolytech.ca/downloads/documents/StudentRightsandResponsibilities.pdf.

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/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.