

## DEPARTMENT OF TRANSPORTATION TRADES

### THINKBIG SERVICE TECHNICIAN COURSE OUTLINE – FALL 2025

#### HES 462 VA41 – OFF ROAD MACHINE SYSTEMS DIAGNOSTICS/REPAIR

#### 1.5 CREDITS (48 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.

<b>INSTRUCTOR:</b>	Rob Young	<b>PHONE:</b>	780.835.6730
<b>OFFICE:</b>	FPS 108	<b>E-MAIL:</b>	robyoung@nwpolytech.ca
<b>OFFICE HOURS:</b>	8 AM to 4:30 PM		

**CALENDAR DESCRIPTION:** Primarily a lab-based course where the student's knowledge will be challenged and troubleshooting skills developed. Students will be required to successfully diagnose and repair Off Road machine systems in a real-world setting.

**PREREQUISITE(S)/COREQUISITE:** Successful completion of Blocks 1 through 3.  
Please read all modules before they are presented in class

#### REQUIRED TEXT/RESOURCE MATERIALS:

##### Caterpillar Material

**Machine Electronics:**

*Unit 4: Monitoring Systems.*

Lesson 1 through Lesson 4.

**Machine Diagnostics:**

*Unit 2: Power Train Diagnostics.*

Power Train Diagnostic Principles.

*Unit 3: Hydraulic Systems Diagnostics.*

Hydraulic Systems Diagnostic Principles.

**Machine Specific:**

As per available units.

**DELIVERY MODE(S):** In person delivery.

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

**LEARNING OUTCOMES:**

**TRANSFERABILITY:** None.

**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%**.

**HES 462 Power Train & Hydraulic Diagnostics / Repair..... 48/240 hours = 20 %  
of Semester 4 mark**

Shop Total \_\_\_\_\_ x 100%

**HES 462 VB42 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](http://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/about/administration/policies/index.html>.

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