

## DEPARTMENT OF TRANSPORTATION TRADES

### THINKBIG SERVICE TECHNICIAN COURSE OUTLINE – FALL 2024

#### HES 511 VA41 POWER TRAIN II – 3.5 CREDITS (96 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:** Scott Bailer **PHONE:** 780.835.6639  
**OFFICE:** FPS108 **E-MAIL:** sbailer@nwpolytech.ca  
**OFFICE HOURS:** 8.30 AM to 4:30 PM

**CALENDAR DESCRIPTION:** Power train drives that have a hydraulic component to them will be covered in this course. Torque converters, gearing principles, power shift and automatic transmissions are covered in relation to operation, diagnostics and service procedures. Also included are hydraulic retarders, tracked equipment steering and undercarriage fundamentals and service. Final drive operation and service, differentials as applied to off-road will also be discussed. Wheeled equipment steering and suspension as well as off-road equipment accessories and attachments will be discussed in reference to off-road machines.

#### PREREQUISITE(S)

#### COREQUISITE:

#### REQUIRED TEXT/RESOURCE MATERIALS:

Caterpillar Material- Powertrain I and Powertrain II Supplied

Alberta Apprenticeship and Industry Training Individual Learning Modules  
3<sup>rd</sup> period Powertrain Heavy Equipment Technician (HET)- Supplied

**DELIVERY MODE(S):** Onsite. This course is delivered in person at the NWP Fairview campus.

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

**LEARNING OUTCOMES:**

**TRANSFERABILITY:** None.

**CREDIT/CONTACT HOURS:**

**GRADING CRITERIA:**

Students must complete all required courses. A passing grade in this course is a **minimum of 70%**.

**EVALUATION:**

**Power Train II**..... **96 / 240 hours = 40 %**  
**of Semester 5 mark**

**Exams Average =** \_\_\_\_\_ **x 45%**

**Class Assignments/Quizzes/DPC =** \_\_\_\_\_ **x 30%**

**Shop Total** \_\_\_\_\_ **x 25%**

**HES511 VA41 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 NWP. 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. Non-academic misconduct, including the possession, use, or distribution of intoxicants, will be addressed through the Student Rights and Responsibilities policy.

Students are expected to attend all class and shop hours. Students who miss more than 21 hours or 3 days of classes may be removed from the course.

**STATEMENT ON ACADEMIC MISCONDUCT:**

Academic Misconduct will not be tolerated. For a more precise definition of academic misconduct and its consequences, refer to the Student Rights and Responsibilities policy available at <https://www.nwpolytech.ca/about/administration/policies/index.html>

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