

**DEPARTMENT OF INDUSTRY PARTNER TRAINING**  
**THINKBIG SERVICE TECHNICIAN COURSE OUTLINE – FALL 2025**  
**HES231 VZ21 AIR BRAKES – 2.0 CREDITS (3.5-0-3) 52 HOURS FOR 8 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.

<b>INSTRUCTOR:</b>	Stefan Caers	<b>PHONE:</b>	587 297 7903
<b>OFFICE:</b>	FPS 119	<b>E-MAIL:</b>	scaers@nwpolytech.ca
<b>OFFICE HOURS:</b>	8.00am to 4.30pm		

**CALENDAR DESCRIPTION:** This course covers the fundamentals and operation of pneumatically actuated braking systems including component function and diagnostics. A section on antilock brakes is included.

**PREREQUISITE:**

**COREQUISITE:**

**REQUIRED TEXT/RESOURCE MATERIALS:**

**Caterpillar Material**

**Power Train II**

Unit 2: Brakes

Lesson 2 – Brake Systems

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

190105a –	Air Brake System Fundamentals
190105b –	Air Brake System Mechanical Components
190105cA –	Truck / Tractor Air Brake System Components – Part A
190105cB –	Truck / Tractor Air Brake System Components – Part B
190105d –	Trailer Air Brake System Components
190105e –	Air Brake System Testing and Service
190105f –	Air Antilock Brake System Fundamentals
190402d –	Air Antilock Brake Systems
190402e –	Air Antilock Brake System Diagnosis
190402f –	Hydraulic Antilock Brake Systems

### **DELIVERY MODE(S):**

In person – 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.

### **GRADING CRITERIA:**

Students must complete all required courses with no failing (F) grades. A passing grade in this course is a **minimum of 70%**. Grades for this course will be assigned as a percentage. Failure to achieve a minimum grade of 70% will result in withdrawal from the Think BIG program.

## EVALUATIONS:

**Air Brakes**

**52 hours**

*Exams Average* = \_\_\_\_\_  $\times 35\%$

*Class Assignments / Quizzes* = \_\_\_\_\_  $\times 35\%$

*Shop Total* \_\_\_\_\_  $\times 30\%$

**FINAL MARK** = \_\_\_\_\_ %

## COURSE SCHEDULE/TENTATIVE TIMELINE:

Will be posted in the classroom.

## 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.

Absences will be monitored and recorded by the instructors.

- Upon reaching 7 hours missed time in a single semester the student will be required to meet with the instructor.
- Upon reaching 14 hours missed time in a single semester the student will be required to meet with the instructor and program Chair.

- Upon reaching 21 hours missed time in a single semester the student will be required to meet with the program Chair, the Instructor and the Dean to evaluate the students' ability successfully continue in the Think BIG program.

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 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.