

## DEPARTMENT OF HEAVY EQUIPMENT

### THINKBIG SERVICE TECHNICIAN COURSE OUTLINE – WINTER 2022

JANUARY 4 – FEBRUARY 25, 2022

### HES231 VA23 AIR BRAKES – 2.0 (52 HOURS) SYSTEMS – 2.0 CREDITS (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:** Delbert Lubeck                      **PHONE:** 780.835.6786  
**OFFICE:** FPS 112                                      **E-MAIL:** dlubeck@nwpolytech.ca  
**OFFICE HOURS:** 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(S)/COREQUISITE:** Successful completion of Block 1 and HES190 work placement.

#### **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 delivery. Fairview Campus Only

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

**COURSE OBJECTIVES:**

**LEARNING OUTCOMES:**

**TRANSFERABILITY:** None.

**EVALUATIONS:**

**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%**.

**Air Brakes.....52 / 240 hours = 22 %  
of Semester 2 mark**

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

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

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

**HES231 VA23 FINAL MARK = \_\_\_\_\_ %**

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:**

- Fundamentals
- Mechanical Components
- Truck/Tractor Air-Brake System Components
- Trailer Air-Brake System Components
- Testing and Service
- Air Antilock Brake Systems
- Air Antilock Brake Diagnosis

**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.

**Additional Information (Optional):**