NORTHWESTERN POLYTECHNIC
Fairview Campus

# DEPARTMENT OF TRANSPORTATION TRADES

# THINKBIG SERVICE TECHICIAN COURSE OUTLINE – FALL 2022

# AUGUST 29, 2022 - OCTOBER 21, 2022

# HES121 VA12 – INTRODUCTION TO MACHINE SYSTEMS – 3.0 (80 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.


**INSTRUCTOR:** Darcy Moss **PHONE:** 780.835.6765

**OFFICE:** FPS 119 **E-MAIL:** dmoss@nwpolytech.ca

**OFFICE HOURS:** 8.00am to 4.30pm


**PREREQUISITE(S)/COREQUISITE:** None

**FALL 2022 DELIVERY:**
In person – Onsite. This course is delivered in person at the NWP Fairview campus.
Note: NWP reserves the right to change the course delivery.

**REQUIRED TEXT/RESOURCE MATERIALS:** Supplied

**CALENDAR DESCRIPTION:** This course provides the foundation for the Heavy Equipment Service Program. The student will be introduced to the major systems found on heavy equipment, the components that comprise these systems, their functions and service techniques.
Delivery Option: Fairview Campus Only

**CREDIT/CONTACT HOURS:** Credits: 3.0 / Contact Hours: 80.

 

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

**OBJECTIVES (OPTIONAL):**
Upon successful completion of the course the student will:

- be familiar with shop processes, procedure and nomenclature;
- be prepared to work safely and confidently in the heavy equipment service environment.

**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%.**

**Introduction to Machine Systems ..... 80 / 240 hours = 33 % of Semester 1 final mark**

**Exams/quizzes Average =** _____ **x 30%**

**Class Assignments/projects =** _____ **x 40%**

**Shop Total** _____ **x 30%**

**HES 121 VB12 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 |

 

**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 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.nwppolytech.ca/downloads/documents/StudentRightsandResponsibilities.pdf.

**STATEMENT ON PLAGIARISM AND CHEATING:**

Refer to the Student Conduct section of the NWP Calendar at http://www.nwpolytech.ca/programs/calendar/ Pages 44 to 46 or the College Policy on Student Misconduct: Plagiarism and Cheating at http://www.nwpolytech.ca/about/administration/policies/. **

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

**COURSE SCHEDULE/TENTATIVE TIMELINE:**

**Overview of Engines**

- Fuel Types
- Configurations
- Components and Their Locations
- Cooling
- Lubrication
- Nomenclature
- Accessories
- Safety
- Servicing

**Overview of Electrical**

- Components and Their Locations
- Configurations
- Nomenclature
- Belts and drives
- Safety
- Servicing

 

**Overview of Hydraulic Systems**

- Components and Their Locations
- Configurations
- Nomenclature
- Safety
- Servicing

**Overview of Power Train**

- Components and Their Locations
- Configurations
- Nomenclature
- Safety
- Servicing

**Overview of Steering**

- Components and Their Locations
- Configurations
- Nomenclature
- Safety
- Servicing

**Overview of Brakes**

- Components and Their Locations
- Configurations
- Nomenclature
- Safety
- Servicing

**Overview of Wheels, Tires and Tracks**

- Components and Their Locations
- Configurations
- Nomenclature
- Safety
- Servicing

**Overview of Implements**

- Components and Their Locations
- Configurations
- Nomenclature
- Safety
- Servicing

 