

ANIMAL SCIENCES DEPARTMENT

COURSE OUTLINE – Fall 2024

AG1000– Agricultural Equipment I – 9 (0-15-15) 360 Hours for 12 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.

INSTRUCTOR:	Garry Candy	PHONE:	780-835-6670
OFFICE:	FAS 150A	E-MAIL:	GCandy@nwpolytech.ca
OFFICE HOURS:	By appointment		

CALENDAR DESCRIPTION: This course aligns with the First Period Technical Training Curriculum for the Agricultural Equipment Technician Trade.

NOTES: For students who would like to challenge the Agricultural Equipment Technician Trade Period 1, please note that to succeed in apprenticeship education, you must pass each section of the course and the provincial period exam. The passing grade for each section in a course is 65%. A passing mark on each provincial exam and the interprovincial qualification (or Red Seal Exam) is 70%.

PREREQUISITE(S)/COREQUISITE: n/a

REQUIRED TEXT/RESOURCE MATERIALS: Agricultural Equipment Technician (AET) Individual Learning Modules (ILMs) for 1st Period

DELIVERY MODE(S): On-campus (face-to-face) – This type of course will be delivered on campus in a specific location which will be indicated on the student timetable. Students are expected to fully attend in person.



LEARNING OUTCOMES:

1. Apply legislation, regulations and practices ensuring safe work in this trade.
2. Use industry standard practices for climbing, lifting, rigging and hoisting in this trade.
3. Apply industry standard practices for hazardous materials and fire protection in this trade.
4. Explain techniques used to communicate service information to the customer.
5. Identify materials, fasteners and sealing systems commonly used in the trade.
6. Use precision measuring tools calibrated in imperial and metric measure.
7. Describe the use and maintenance of hand tools.
8. Describe methods to demonstrate personal welding safety.
9. Demonstrate the use of the torch for welding, heating, brazing and cutting.
10. Perform welding operations using arc welding equipment.
11. Perform welding operations using the MIG welding process.
12. Apply scientific principles to explain electrical theory.
13. Apply scientific principles to explain the theory of magnetism.
14. Use electrical test equipment to measure electrical voltage.
15. Use electrical test equipment to measure electrical current (amperes).
16. Use electrical test equipment to measure electrical resistance (ohms).
17. Service, test and storage of agricultural batteries.
18. Interpret electrical circuit schematics.
19. Explain hydraulic principles used on agricultural equipment.
20. Explain the function of the following hydraulic system components; hydraulic oils, reservoirs, filters, conductors, and heat exchangers.
21. Explain the functions and principles of operation of hydraulic system components.
22. Explain the fundamental operating characteristics of hydraulic systems used in agricultural equipment.
23. Identify factors that influence tractor field performance.
24. Explain steering systems on agricultural equipment.
25. Describe and adjust cutting equipment.
26. Describe and adjust hay baling equipment.
27. Describe the components and usage of selected types of tillage equipment.
28. Describe adjustments and repairs of other selected types of equipment.
29. Service and diagnose common clutch types.
30. Diagnose and service drive lines and universal joints.
31. Explain basic gearing principles.
32. Explain the functions and operating principles of mechanical front wheel assist drive axle assemblies.

TRANSFERABILITY:

Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at the Alberta Transfer Guide main page <http://www.transferalberta.alberta.ca>.

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability.**

EVALUATIONS:

GRADING CRITERIA

Grades for this course will be assigned as a percentage. The minimum passing grade is 65%.

For students who would like to challenge the Agricultural Equipment Technician Trade Period 1, please note that to succeed in apprenticeship education, you must pass each section of the course and the provincial period exam. The passing grade for each section in a course is 65%. A passing mark on each provincial exam and the interprovincial qualification (or Red Seal Exam) is 70%.

COURSE SCHEDULE/TENTATIVE TIMELINE:

Date	Topic	Total Hours
Oct 28-Nov 7	Section One: Standard Workplace Safety, Materials, & Tools	54
Nov 8-19	Section Two: Electric Welding and Oxy Fuel Cutting	47
Nov 20-Dec 10	Section Three: Basic Electrical	90
Dec 11-20	Section Four: Basic Hydraulics	47
Jan 6-23	Section Five: Agricultural Equipment	86
Jan 24-31	Section Six: Power Train I	36

Grades for this course will be assigned as a percentage. The minimum passing grade is:

1. A cumulative weighted average mark of 65% in the theory components.
2. A cumulative weighted average mark of 65% in each practical component



3. A mark of 50% on every section of the theory and practical components

STUDENT RESPONSIBILITIES:

Use of any unapproved electronics during quizzes or exams will be considered cheating and will result in an academic misconduct.

Poor attitude and/or behaviour during class or shop time.

Use of computer or other electronics in class, unless approved beforehand by instructor.

Attendance for this course is mandatory and crucial to your success. **Absences exceeding 27 hours will result in the removal from this course.** After 8 hours absent you will receive notification of hours missed, again at 16 hours notification will be given. After 24 hours missed you will be notified with a final warning by phone and email.

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.