

DEPARTMENT OF SCIENCE

COURSE OUTLINE – Fall 2026

TT1401: Industrial Trades I – 3 (3-0-3) 90 Hours over 15 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: Curran
Speager

PHONE: 780-539-2865

OFFICE: J223

E-MAIL: cspeager@nwpolytech.ca

OFFICE HOURS:

CALENDAR DESCRIPTION: This course covers the theory behind materials, welding, mechanics, electricity, instrumentation, and controls. Students will also be introduced to hands on, practical aspects of these topics, allowing them to succeed in an integrated operations and maintenance team.

PREREQUISITE(S)/COREQUISITE:

REQUIRED TEXT/RESOURCE MATERIALS:

All Materials will be online open source provided by NAIT. Please view the link below

https://nait.primo.exlibrisgroup.com/discovery/collectionDiscovery?vid=01NOALTECH_INST:01NOALTECH&inst=01NOALTECH_INST&collectionId=8187579940004191

DELIVERY MODE(S): Lecture style presentation of material in person at the NWP Grande Prairie campus. Laboratory provides hands-on experience and will be delivered at the Grande Prairie campus.

LEARNING OUTCOMES: At the end of this course students will:



- Acquire introductory knowledge of mechanical properties of engineering materials and welding processes, including inspection and testing methods for welds and materials used in plants.
- Develop familiarity with hand and power tools, measuring, and basic equipment maintenance.
- Gain basic concepts of electricity, including AC and DC calculations, magnetism, and designs and uses of electrical metering devices.
- Introduce operating principles of AC and DC motors and generators, electrical transformers, and electrical distribution systems with an emphasis on safe operation.
- Acquire knowledge of plant instrumentation and control systems, including devices used to measure pressure, level, flow, temperature, humidity, and composition.
- Gain understanding of the basic types and functions of transmitters, recorders, controllers, and control actuators.
- Explore the design and operation of programming and electrical control systems.

TRANSFERABILITY: Nontransferable, there are no transfer agreements in place.

EVALUATIONS:

Assignments:	10%
Lab Assignments:	10%
Unit Exams:	30%
Final Exam:	50%

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

COURSE SCHEDULE/TENTATIVE TIMELINE: 15 weeks. Unit exams will be held after chapters and units are completed.

STUDENT RESPONSIBILITIES: Students must attend a minimum of 80% of all classes and 100% of all labs to successfully complete 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.