NORTHWESTERN POLYTECHNIC

DEPARTMENT OF SCIENCE

COURSE OUTLINE – Winter 2025

PW 1402 : Process and Power Systems II – 7 (7-0-7) 210 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:	L215	**E-MAIL:**	cspeager@nwpolytech.ca
OFFICE HOURS:			

CALENDAR DESCRIPTION: This course covers the fundamental aspects of boiler safety, operations, water treatment, and building systems. This material will include pressure relief valves, safety controls, efficient boiler procedures, water treatment, drainage, lighting, and steam-related processes.

PREREQUISITE(S)/COREQUISITE: PW1401

REQUIRED TEXT/RESOURCE MATERIALS:

The following textbook and resource materials are required for the first year of the PET program, including courses PW 1400, PW 1401, PW 1420, IT 1401, PC 1401, PW 1402, PW 1430, and IT 1402. All books are from PanGlobal.org

- 4th Class Textbook Set – Part A [Ed. 3.5]
- 4th Class Textbook Set – Part B [Ed. 3.5]
- Preparatory Math Topics for Power Engineering [Ed. 2]
- Academic Supplement [Ed. 2.0]
- 2018 ASME Academic Extract (Vol 1)

The first 4 books are available as a bundle

4th Class – Standard Collection

https://mypower.panglobal.org/pshop/4th-class/225-4th-class-standard-collection.html

2018 ASME Academic Extract (Vol 1)
https://mypower.panglobal.org/pshop/code-extracts-supplement/198-2018-asme-academic-extract-vol-1.html

NOTE: Older editions of Power Engineering textbooks are not acceptable. The changes between editions are enough to impact the likelihood of passing the ABSA exams.

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 Fairview campus.

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

- Attain comprehensive understanding of boiler safety devices, plant operations, water treatment, auxiliary building systems, and typical plant configurations.
- Gain knowledge about code and standards requirements in the design and operation of pressure relief valves, combustion safety controls, and operating and safety controls on boilers.
- Develop skills to start up, operate, conduct operational checks, shut down, and lay up boilers in a safe and efficient manner.
- Acquire knowledge about general principles, methods, and equipment used in water treatment.
- Understand various water supply and sanitary drainage systems used in buildings.
- Become familiar with lighting systems and basic design considerations.
- Gain knowledge of steam-related processes in common types of plants that employ power engineers.

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.