NORTHWESTERN POLYTECHNIC

DEPARTMENT OF SCIENCE

COURSE OUTLINE – Fall 2024

PW1401 (A2): Process and Power Systems I – 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
OFFICE:
OFFICE HOURS:
PHONE:
E-MAIL:

CALENDAR DESCRIPTION: This course covers various topics related to power engineering such as boiler designs, components, and operation. The course will also cover different types of piping, valve designs, plant sketches, and communication systems.

PREREQUISITE(S)/COREQUISITE:

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:

- Understand boiler design, components, configurations, and types used by power engineers.
- Identify various piping elements such as types, connections, supports, and drainage devices.
- Interpret plant and equipment sketches.
- Create line tracing diagrams.
- Demonstrate proficiency in using different types of plant communication systems.
- Acquire in-depth knowledge of boiler history.
- Grasp combustion theory and burner systems.
- Demonstrate competence in managing draft and feedwater systems.
- Acquire knowledge of various boiler cleaning methods.
- Develop the skills and knowledge required to work competently in the power engineering industry.

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

EVALUATIONS:

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

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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.