



DEPARTMENT OF SCIENCE COURSE OUTLINE – Winter 2024

POF 437 (VA2): 4th Class Power Engineering Power Lab II – 1 (0-0-5.5) 27.5 Hours over 5 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:	Wells Darling Curran Speager	PHONE:	780-539-2819 587-343-2154
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OFFICE HOURS:	As posted		

CALENDAR DESCRIPTION:

This course covers opening boiler and minor boiler maintenance procedures; inspection and operation of heating boilers and systems, inspection and maintenance of steam traps, disassembly of electric motors, operation of diesel generators, diesel engines, gas engines, and operation of basic refrigeration systems.

PREREQUISITE(S)/COREQUISITE:

POF 401, POF 402, and POF 406 - 4th class A1, A2, and B1 theory

REQUIRED TEXT/RESOURCE MATERIALS:

- Flame retardant coveralls (often required for industry)
- CSA (green triangle) approved work boot, 6" high minimum (typical industry standard)
- Clipboard with folding cover
- 1.5" 3-ring binder
- Leather gloves
- Safety eyewear. Prescription glasses are required to be safety rated or use safety goggles.

- CSA approved hard hat
- Hearing protection
- Lock for locker
- Sealable water bottle

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:

- Discuss the importance of safety in the Power Lab and Chemistry Lab
- Discuss the parts of the Firtube boiler, prestart up checks, start up sequence, and shut down sequence
- Demonstrate the prestart checks and start up procedures for the Firtube boiler
- Discuss the operation of the turbo-generator and synchronization.
- Demonstrate the prestart up checks, start up procedures, and safety interlock tests for the Watertube boiler
- Discuss the operation and components of internal combustion engines and their auxiliaries.
- Demonstrate how to service the air compressor.

TRANSFERABILITY:

Nontransferable, there are no transfer agreements in place.

EVALUATIONS:

- 20% Safety
- 20% Participation
- 40% Competency
- 20% End of Lab Report (like a shift change report)

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	94-100		C+	2.3	68-71

A	4.0	89-93		C	2.0	64-67
A-	3.7	84-88		C-	1.7	60-63
B+	3.3	80-83		D+	1.3	55-59
B	3.0	76-79		D	1.0	50-54
B-	2.7	72-75		F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

February 26, 2024 – March 29, 2024

STUDENT RESPONSIBILITIES:

Students must be prepared to pre-read chapters and objectives prior to them being covered in class. Students must also be prepared to complete the online quizzes at the same time as the chapters are covered and other Instructor assigned assignments during out of class time. Students must complete all courses with no failing grades and a minimum of 67% and attend a minimum of 80% of all classes and 100% of labs to successfully complete the program.

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.

Additional Information:

Instructors may include additional information here. Delete this section if not required.