



DEPARTMENT Humanities and Social Sciences

COURSE OUTLINE - Winter 2026

PH1250(A3): Practical Logic - 3 (3-0-0) 45 Hours for 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: Joseph Van Weelden

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OFFICE HOURS: Tuesdays and Wednesdays 12:30-2:00 pm, or by appointment

CALENDAR DESCRIPTION: Practical logic is the study of critical thinking in everyday contexts. This class is foundational to all aspects of life, including our professional and personal lives. Without critical thinking people may not be able to differentiate between mere opinion and knowledge, which makes them susceptible to holding false beliefs without the means to make corrections. Critical thinking skills teach us how to identify mistakes in reasoning and how to correct these mistakes. This course teaches students the basic concepts of informal logic required for critical thinking. These concepts include the components of arguments, how to analyze logical inferences, and how to evaluate persuasive language as it is often presented in politics, news, social media, business, and even around the dinner table. In addition, students will learn how to identify logical fallacies, how to recognize good evidence (scientific or otherwise), and how to have fruitful discussions with others about even the most contentious topics.

PREREQUISITE(S):

None

COREQUISITE(S):

None

REQUIRED MATERIALS: We will mostly be working with the following (open-source) textbook:



The textbook will be made available on myClass, along with all other materials (including the instructor's handouts, exercise sheets, any additional readings or videos, and any ppts.)

DELIVERY MODE(S): On-Campus

LEARNING OUTCOMES:

- Analyze arguments based what counts as evidence in support of claims.
- Analyze arguments to address common mistakes in reasoning.
- Evaluate the validity of deductive arguments using propositional logic.
- Evaluate the validity of deductive arguments using categorical logic.
- Analyze the reasoning used to support our everyday beliefs.
- Analyze the reasoning used to support scientific claims.
- To gain an understanding of important philosophical approaches to critical thinking.
- To develop critical thinking and problem-solving skills through the analysis of logical structure.
- To apply the analysis of logical structure to assumptions, values, principles, and reasoning as they affect society.

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>

**** For courses with alpha (letter) grading, a 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:

Class Participation: 10%

5 In-Class Quizzes: 5 % each * 5 = 25% total

2 ' Practical Logic Outside of the Classroom' Assignments: 5% each * 2 = 10% total

Midterm Exam: 25 %

Final Exam: 30 % (The final exam will be scheduled during the final exam period. Please check the registrar's posting for a schedule of final examinations.)

GRADING CRITERIA:

Please note that most institutions will not accept your course for transfer credit **IF** your grade is less than C-.

Grading Chart

Alpha Grade	4-point Equivalent	Percentage Guidelines	Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	95-100	C+	2.3	67-69
A	4.0	85-94	C	2.0	63-66
A-	3.7	80-84	C-	1.7	60-62
B+	3.3	77-79	D+	1.3	55-59
B	3.0	73-76	D	1.0	50-54
B-	2.7	70-72	F	0.0	00-49

COURSE SCHEDULE AND TIMELINE (SUBJECT TO REVISION):

Topic Title	Week No.	Details	Readings.	Activities	Date (s)
Introduction. What is Practical Logic?	1	Course Outline and Expectations from Students. An Invitation to Personal Reflection. An Introduction to <i>Thinking Well as a Skill</i> .	Post-Reading: Van Cleave Preface and pp.1-7.	Icebreaker Activity: Am I Living an Examined Life?	Wednesday, January 7.
Identifying and Reconstructing Arguments	2	The Basic Ingredients of an Argument, Argument Mapping, Finding the (Main) Argument in a Text.	Van Cleave pp.8-17, Handout with Exercises.		Monday, January 12 Wednesday, January 14



Evaluating (Deductive) Arguments: Validity and Soundness	3	What makes an argument a good one? Validity vs Soundness.	Van Cleave pp.18-23, Handout with Exercises.	Quiz 1 on January 21.	Monday, January 19 Wednesday, January 21
Filling in Missing Premises, The Principle of Charity, A Crucial Distinction: <i>Merely Persuading vs Offering an Argument</i>	4	More on Reading/Listening for and Reconstructing the (Best Version of) an Argument.	Van Cleave pp.25-49, Handout with Exercises.		Monday, January 26 Wednesday, January 28
Formal Methods for Evaluating Arguments	5	Propositional Logic, Introducing Truth- Tables, Conjunction, Negation and Disjunction.	Van Cleave pp.50-63, Handout with Exercises.		Monday, February 2 Wednesday, February 4
Propositional Logic Continued	6	Translating Complex Sentences, The Truth-Table Test of Validity.	Van Cleave pp.63-84, Handout with Exercises.	Quiz 2 on February 11	Monday, February 9 Wednesday, February 11
Propositional Logic Continued	7	Conditionals, The Truth Table Test of Material Equivalence, Using Truth Tables to Identify Tautologies, Contradictions, and Contingent Statements	Van Cleave pp.85-95, Handout with Exercises.		Monday, February 23 Wednesday, February 25



Propositional Logic Concluded	8	The Method of Proof and the 8 Valid Forms of Inference	Van Cleave pp.95-105, Handout with Exercises.	First Assignment Due on March 2. Quiz 3 on March 4.	Monday, March 2 Wednesday, March 4
Review/Practice Session and Midterm	9		No new readings.	Review Session on March 9, Midterm Exam on March 11	Monday, March 9 Wednesday, March 11
Categorical Logic	10	The 4 Categorical Forms. Translating Categorical Statements into one of the 4 Categorical Forms. The Venn Test of Validity for Immediate Categorical Inferences.	Van Cleave pp.115-130, Handout with Exercises.		Monday, March 16 Wednesday, March 18
Categorical Logic Continued, Introducing Inductive Arguments	11	The Venn Test of Validity for Categorical Syllogisms. Distinguishing Deductive from Inductive Arguments.	Van Cleave pp.130-139, Van Cleave pp.23-25, 140-159, Handout with Exercises.	Quiz 4 on March 25	Monday, March 23 Wednesday, March 25



Inductive Arguments Continued	12	More Types of Inductive Argument. Evaluating Inductive Arguments.	Van Cleave pp.159-176, Handout with Exercises.		Monday, March 30 Wednesday, April 1
And Now, What <i>Not</i> to Do: Fallacies	13	Probabilistic, Formal and Informal Fallacies.	Van Cleave pp.176-200, Handout with Exercises.	Quiz 5	Wednesday, April 8
Review and Practice for Final Exam.	14		No new reading.	Second Assignment Due.	Monday, April 13

STUDENT RESPONSIBILITIES:

Maintain an inclusive and respectful classroom environment, where no student is made to feel unwelcome or uncomfortable. Kindness and civility are not only compatible with spirited intellectual debate about controversial topics, but essential to it. Any student caught violating this policy will be asked to leave the class.

Please do extend the courtesy of paying attention to the other human beings around you (especially to your fellow students!) while you are in my classroom. While electronic devices are not forbidden, if I notice that you are spending the class texting your friends rather than listening/thinking/engaging I may ask you to leave the classroom until you are prepared to be genuinely present in it. Even if it does not come to this, which I hope it won't, you are hereby notified that such behaviour *will* be reflected in your end of semester participation grade.

Complete all course readings in advance of the session (s) in which we are to discuss them.

Be an active participant in the course (ideally through your own spoken or written contributions to class discussion etc., but at a minimum by actively listening to what others have to say).

Complete all course readings in advance of the session (s) in which we are to discuss them.

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/polytechnic-leadership/policies-directory>.

****Note:** all Academic and Administrative policies are available on the same page.

ADDITIONAL INFORMATION:

If you require accommodations for any reason or have any concerns about the classroom environment, please do not hesitate to raise this with me. I am invested in creating a welcoming and accessible space where every student can flourish, and if there is anything holding you back from fulfilling your potential in my classroom I want to know about it as soon as possible.