



PHIL_V 220 003 Symbolic Logic
Credits: 3

Instructor: Graham Seth Moore

Email: graham.moore@ubc.ca

Meetings: Monday, Wednesdays, Fridays 10:00 AM to 11:00 AM in P.A. Woodward Instructional Resource Centre (IRC), Floor G, Room 1

Office Hours: Mondays & Wednesdays 11:00–12:00 in Buchanan E274.

Course Objectives and Learning Outcomes

Logic, as a discipline, is primarily concerned with what could be called the canons of correct reasoning: the articulation of rules by which we can assess the arguments of others, and be guided in our own inferences. In an introduction to symbolic logic, we familiarize ourselves with formal symbolic techniques for analyzing and determining the success of arguments.

We will explore two kinds of logical systems. The first—sentential (or truth-functional) logic—represents arguments that depend on how sentences are combined to form complex statements. The second—quantificational (or first-order) logic—is concerned with arguments that involve generalizations. We will study each kind of logical system in three phases. First, we will learn how to translate ordinary English sentences and arguments into the symbolic system. This ensures the system’s *applicability*. Next, we will study its “semantics”—i.e. how truth and falsity work within the system. Finally, we will learn how to construct proofs—that is, we will formulate the patterns of “correct reasoning” within the system.

Studying logic is valuable for several reasons, the obvious one being that it sharpens one’s own reasoning skills. But in addition to that, students should gain an appreciation of modern logic as a source of intellectual interest in its own right. Many students find the construction of proofs *fun*—as they are essentially puzzles, and solving them often requires creativity.

Course Format

We will meet in-person on Mondays, Wednesdays, and Fridays from 10:00 AM to 11:00 AM.

The best way to master the material is to practice often and with other people. For this reason, there will be (near) weekly in-class assignments that can be done in groups. (There is no assignment for the first week, the 11th week (the Friday after the break), or during the weeks in which there is a midterm exam.) The assignments are released on Friday morning and due at *midnight on the following Sunday*—a three-day window.

These assignments are to be done in groups of *no more than four*. When you complete the assignment as a group, you must each hand in *your own copy* of the answers to get credit. If you do not hand in your own copy, you will not get credit. Please indicate who else was in your group on the assignment submission.

If you are unable to make it to a class when there is an in-class assignment, you may still complete the assignment at home, but without the benefit of a group. The due date and time will be the same for the assignment. Please contact me if you are unable to complete the assignment on time due to illness or other legitimate reasons, and we can discuss extensions. However, you



must contact me *before* the assignment is due. Otherwise, I cannot accept late assignments.

The midterms will take place on Wednesday, October 1, and Wednesday, October 29. The final exam date and time is TBD. Each will consist of a variety of multiple choice and short answers, much like the questions of the short assignments. The final *is* cumulative.

Course Requirements

There are no prerequisites for this course.

Evaluation Criteria and Grading

Ten near-weekly short assignments - 25%

Two midterm - 20% each

Final Exam - 35%

Class Policies on Re-grading

If you believe that an assignment or midterm has been misgraded, please contact me.

Required and Recommended Readings

The textbook for this course is <https://forallx.openlogicproject.org>. A pdf copy will be made available through canvas.

Course Schedule

Week	Topic	Reading
1 Sept 3, 5	Introduction to logic, recognizing arguments, two ways that arguments can go wrong	Chapters 1, 2
2 Sept 8, 10, 12	Validity, soundness, and other logical notions Assignment 1 due Sept 14	Chapters 3, 4
3 Sept 15, 17, 19	Truth-functional logic, symbolizing English sentences, four forms of conditional argument Assignment 2 due Sept 21	Chapters 5, 6, 7, 8
4 Sept 22, 24, 26	The truth table method Assignment 3 due Sept 28	Chapters 9, 10, 11, 12, 13 Optional: Chapters 14, 15



5 Sept 29, Oct 1, 3	Review, midterm, starting natural deduction Midterm 1 - Wednesday Oct 1	(For Friday) Chapters 16, 17
6 Oct 6, 8, 10	Natural deduction Assignment 4 due Oct 12	Chapters 17 (continued), 18
7 Oct 15, 17	Natural deduction Assignment 5 due Oct 19	Chapters 18 (continued), 19
8 Oct 20, 22, 24	Metalogic Assignment 6 due Oct 26	Chapter 20, 22 Optional: Chapter 21
9 Oct 27, 29, 31	Review, midterm, starting first-order logic Midterm 2 - Wednesday, Oct 29	(For Friday) Chapters 23, 24
10 Nov 3, 5, 7	Symbolizing English sentences in FOL, identity Assignment 7 due Nov 9	Chapters 25, 26
11 Nov 14	The syntax and semantics of FOL	Chapters 27, 30, 31
12 Nov 17, 19, 21	The semantics of FOL, starting natural deduction for FOL Assignment 8 due Nov 23	Chapters 32, 33, 34, 36
13 Nov 24, 26, 28	Natural deduction for first-order logic Assignment 9 due Nov 30	Chapters 36, 37



14 Dec 1, 3, 5	Natural deduction for FOL continued Assignment 10 due Dec 7	Chapters 38, 39, 41 Optional: Chapter 40
------------------------------	--	---

UBC VALUES AND POLICIES

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated, nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available here: <https://senate.ubc.ca/policies-resources-support-student-success/>.

ACADEMIC INTEGRITY

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work; nor should you help others to do the same. For example, it is prohibited to: share your past assignments and answers with other students; work with other students on an assignment when an instructor has not expressly given permission; or spread information through word of mouth, social media, websites, or other channels that subverts the fair evaluation of a class exercise, or assessment. Learn more through the [Academic Integrity website](#).

- **Academic Misconduct:**

Violations of academic integrity (i.e., [academic misconduct](#)) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred for consideration for academic discipline. Careful records are kept to monitor and prevent recurrences. Any instance of cheating or taking credit for someone else's work, whether intentionally or unintentionally, can and often will result in at minimum a grade of zero for the assignment, and these cases will be reported to the Head of the Department and Associate Dean Academic of the Faculty



POLICIES AND REGULATIONS

Visit [UBC Vancouver's Academic Calendar](#) for a list of campus-wide regulations and policies, as well as [term dates and deadlines](#).

FASS STUDENT RESOURCES

- **Final Examinations**

The examination period for Term 1 of 2025/26 Winter Session is from Tuesday, December 9 to Saturday, December 20 inclusive. See [here](#) for UBC's policies on examination clashes and hardships (three or more formal examinations scheduled within a 24-hour period), and see [here](#) for UBC's policies on deferred examination, should you be unable to write the final exam for any legitimate reason.

- **Other Academic Concession Requests**

Visit the [FASS Undergraduate Student Forms](#) page

RESOURCES TO SUPPORT STUDENT SUCCESS

- **Student Supports, Resources & Campus Services:**

Visit the [Student Support and Resources](#) page to find one-on-one help or explore resources to support your experience at UBC, as well as many other campus services available to all students.