PHIL 220: SYMBOLIC LOGIC

Winter 2025 - Term 1 (September—December 2025)

Sections 001 and 009

1. INSTRUCTOR INFORMATION

- **Instructor:** Jade Hadley
- **Email:** jade.hadley@ubc.ca
    - Please review the course email policy (see **§2.5**).
- **Office Hours:** Mondays 2-3pm (in-person – Buchanan E 274) and Tuesdays 10:30-11:30am (on Zoom – link on Canvas).

1.1 TEACHING TEAM

- **Teaching Assistants:** Zoe Luo and Ethaniel Chou.

2. COURSE INFORMATION

- **Course Meetings:** Mon-Wed-Fri 1-1:50pm Hennings Building Room 202 ***or*** on Zoom (see **§2.3**).

2.1 DESCRIPTION

- This is an introductory course in logic. It covers both sentential and quantified logic. Topics include: translation from natural language, truth tables and interpretations, systems of natural deduction, alternative proof methods, and metatheory.

2.2 OBJECTIVES

- By the end of the course, you should be able to:

- Think more clearly about arguments/argument structure and be able to translate sentences and arguments from natural language into the formal languages of sentential and quantified logic;
- Have some familiarity with formal proof systems and be able to construct formal proofs;
- Feel prepared for more advanced courses on metalogic and computability, having some familiarity with metatheoretical proofs.

2.3 COURSE SECTIONS

- Note that this syllabus covers two different sections of the same course. The material covered will be the same, and the lectures for each will be delivered simultaneously. The only difference is that 001 is an in-person course and 009 is a hybrid in-person/online course.
    - For 001, all course elements (lectures and exams) will be in-person.
    - For 009, lecture attendance is via Zoom, but exams will be in-person.
- **All students are required to take exams (midterms and final) in-person.**
- Attendance is strongly encouraged regardless of which section you are in – lectures will ***not*** be recorded.

2.4 COURSE MATERIALS

- The textbook for this course is ***forall x: UBC edition.***
    - This is the UBC edition of the textbook *forall x*. *forall x* was originally developed by P.D. Magnus; the UBC edition was written by Jonathan Ichikawa.
        - There are several versions of *forall x*, please ensure that you are using the UBC edition.
- This is a **free**, open-access logic textbook.
    - You can access the pdf here: https://github.com/jonathanichikawa/for-all-x
        - A link will also be posted on the Canvas homepage.

2.5 EMAIL POLICY

- This course has a high enrolment which means that a lot of emails are received. To ensure that emails are dealt with efficiently, please observe the following guidelines:

- Unless you have private matters to discuss, use **Piazza** instead of email. Piazza should be where course-content related questions are asked.
    - You can join the course Piazza site via the link on the Canvas sidebar.
- Email is appropriate for course administration, *not* for substantive logic questions. Appropriate email topics include:
    - Requesting an extension for homework.
    - Requesting an exam concession.
    - Requesting an assignment regrade.
- Include your student ID number and course section in the email so that I can quickly look up your file if necessary.
- Put '220' somewhere in the email heading.
    - This is my personal email account, so it is helpful for me to distinguish which emails are for this course.
- Be patient. There are a lot of students in this course, and I am the only person monitoring emails.
    - At busy times, it may take me several days to get back to you (though I will aim to respond within two business days).
        - If you have been waiting more than a week for a response, please feel free to send a follow-up email.

2.6 OFFICE HOURS

- I will hold two office hour sessions per week – one in person and one via Zoom.
    - Students in either section can come to whichever office hour they choose.
        - (If you attend class virtually, you can come to in-person office hours; if you attend class in-person, you can come to virtual office hours.)
- There is no need to make an appointment or let me know in advance that you will be attending office hours – you can just drop by.
- If, for whatever reason, I need to adjust my office hours in a given week, I will make an announcement via Canvas to inform students of the updated times.

3. COURSE SCHEDULE

Note: Specific deadlines and topic dates are provisional, this schedule is subject to change at the instructor's discretion (students will be notified of any such changes).

Date	Lecture #	Topic	Reading	Homework
Wednesday September 3rd	**1**	Introduction		
Friday September 5th	**2**	Arguments: Argument Forms, Validity	**Ch. 1**	
Monday September 8th	**3**	Sentential Logic: Sentences, Connectives	**Ch. 2**	
Wednesday September 10th	**4**	Sentential Logic: Translation		
Friday September 12th		Review		
Monday September 15th	**5**	Sentential Logic: Truth Tables	**Ch. 3**	
Wednesday September 17th	**6**	Sentential Logic: Truth Tables		**#1** due end of day
Friday September 19th	**7**	Sentential Logic: Entailment	**Ch. 4**	
Monday September 22nd	**8**	Sentential Logic: Entailment		
Wednesday September 24th		Review		

Friday **September 26th**	**9**	Sentential Logic: Trees	**Ch. 5**	
Monday **September 29th**	**10**	Sentential Logic: Trees		
Wednesday **October 1st**	**11**	Sentential Logic: Trees		
Friday **October 3rd**	**12**	Sentential Logic: Introduction to Soundness and Completeness	**Ch. 6**	
Monday **October 6th**	**13**	Sentential Logic: Soundness and Completeness for Trees		
Wednesday **October 8th**	**14**	Sentential Logic: Soundness and Completeness for Trees		**#2** due end of day
Friday **October 10th**		Review		
Monday **October 13th**	**No class**			
Wednesday **October 15th**	**15**	Sentential Logic: Natural Deduction	**Ch. 7**	
Friday **October 17th**	**16**	Sentential Logic: Natural Deduction		
Monday **October 20th**	**17**	Sentential Logic: Natural Deduction		
Wednesday **October 22nd**		Review		

Friday **October 24th**		**Exam 1**		
Monday **October 27th**	**18**	Quantified Logic: Names and Predicates	**Ch. 8**	
Wednesday **October 29th**	**19**	Quantified Logic: Quantifiers		
Friday **October 31st**	**20**	Quantified Logic: Translation		
Monday **November 3rd**	**21**	Quantified Logic: Models	**Ch. 9**	
Wednesday **November 5th**	**22**	Quantified Logic: Models		**#3** due end of day
Friday **November 7th**		Review		
Monday **November 3rd**	**23**	Quantified Logic: Trees	**Ch. 10**	
Wednesday **November 5th**	**24**	Quantified Logic: Trees		
Friday **November 7th**	**25**	Quantified Logic: Trees		
Monday **November 10th**	**No class**			
Wednesday **November 12th**	**No class**			
Friday **November 14th**	**26**	Quantified Logic: Soundness	**Ch. 11**	
Monday **November 17th**	**27**	Quantified Logic: Completeness		**#4** due end of day

Wednesday November 19th	**28**	Quantified Logic: Identity	**Ch. 12**	
Friday November 21st	**29**	Quantified Logic: Identity		
Monday November 24th		**Exam 2**		
Wednesday November 26th	**30**	Quantified Logic: Complex Trees		
Friday November 28th	**31**	Quantified Logic: Natural Deduction	**Ch. 13**	
Monday December 1st	**32**	Quantified Logic: Natural Deduction		
Wednesday December 3rd	**33**	Quantified Logic: Natural Deduction		
Friday December 5th		Review		**#5** due end of day
Final Exam TBD				

3.1 ALTERNATE FORMAL SYSTEMS

- There are many subtly different formal logical systems, some of which you may already be familiar with. We will be learning a specific system in this course, and students are expected to use this course's logical system.
    - Do not assume that rules, symbols, or procedures you've learned elsewhere will be acceptable in this course.

4. ASSESSMENT

- Homework: **30%** (5 assignments worth 6% each).
- Midterm Exam: **30%** (2 exams worth 15% each).
- Final Exam: **40%**

4.1 HOMEWORK

- The homework deadline is the end of the day (11:59pm) on the dates listed on the course schedule.
- Late homework will ***not*** be accepted (unless an extension has been approved) because answer keys will generally be posted shortly after the deadline.
- Do not try to make ChatGPT (or any other AI) do your homework for you.
    - This is academic misconduct and will be pursued via UBC's academic discipline policies.

4.2 MIDTERMS

- Midterm exams will take place **in-person** during class time and will last 50 minutes.
- Midterm exams could cover any material which has been covered up until the point at which the exam is scheduled.

4.2 FINAL EXAM

- The final exam will be cumulative (covering all course material).
- The final exam will be scheduled during the formal examination period.
    - This means that you need to be available to sit the final exam **in-person** sometime between (and including): December 9th (Tuesday) – December 20th (Saturday).

5. ADDITIONAL INFORMATION

5.1 Late Assignments

- I am happy to consider reasonable requests for extensions on homework assignments, provided that the request is approved **before** the assignment is due.
    - If there are exceptional circumstances and you are unable to request an extension before the deadline (and, subsequently, a homework answer key has already been posted), I may consider excusing the assignment.
        - In such cases, the weight of the assignment will be reweighted to other course assignments.
- If you require a concession for a midterm exam, please let me know ASAP. Unless there is a very strong reason why you can't, this should be done **before** the day of the missed exam.
    - The typical concession for a missed midterm will be either a makeup midterm or a reweighting to the final exam.

5.2 Illness and Absence

- It is very important that you do not attend class in-person if you are ill or have reason to believe that you may be ill.
    - If you are enrolled in 001 - the in-person delivery method - you may attend class via Zoom on days you are unable to attend in-person due to foreseeable illness (please reach out to me in advance for the Zoom info).
- I recommend that you attempt to find at least one, ideally several, fellow students who you can communicate with in case of missed classes, so that you can receive notes and other relevant information from them.

5.3 Intellectual Property

- Instructor-generated course materials – this syllabus, assignments, slides, etc. – may not be copied or distributed without my explicit permission.

6. UBC POLICIES

6.1 ACADEMIC MISCONDUCT

Plagiarism, which is intellectual theft, occurs where an individual submits or presents the oral or written work of another person as his or her own. Scholarship quite properly rests upon examining and referring to the thoughts and writings of others. However, when another person's words (i.e. phrases, sentences, or paragraphs), ideas, or entire works are used, the author must be acknowledged in the text, in footnotes, in endnotes, or in another accepted form of academic citation. Where direct quotations are made, they must be clearly delineated (for example, within quotation marks or separately indented). Failure to provide proper attribution is plagiarism because it represents someone else's work as one's own. Plagiarism should not occur in submitted drafts or final works. A student who seeks assistance from a tutor or other scholastic aids must ensure that the work submitted is the student's own. Students are responsible for ensuring that any work submitted does not constitute plagiarism. Students who are in any doubt as to what constitutes plagiarism should consult their instructor before handing in any assignments.

A link about Academic Misconduct: https://vancouver.calendar.ubc.ca/campus-wide-policies-and-regulations/student-conduct-and-discipline/discipline-academic-misconduct

6.2 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, spiritual 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/vancouver/policies-resources-support-student-success/