

Last modified: Aug 28, 2017. Draft syllabus, subject to change; the final version will be released to students at the start of the term. Feel free to contact the instructor for further details.

PHIL 220: Symbolic Logic

Lectures: Monday, Wednesday, Friday, 3-4, Fall 2017
MATX 1100

Instructor: Dr. Jonathan Jenkins Ichikawa
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Office Hours: Mondays, 10:30–11:30 and 1:30–2:30

Waitlist:

Registration for this course is presently (Aug 28) at its enrolment cap. There is a waiting list available for students interested in registering. There is inevitably significant turnover at the start of the term; students wishing to enrol can join the waiting list with confidence that they will be officially registered. Students list should feel free to attend class while they're still on the list.

Textbook:

Our main text for this term will be a new edition of *forall x*, an open-access logic textbook originally developed by P.D. Magnus. Our edition is currently being prepared by Jonathan Ichikawa. It will be made available for download at the start of the semester. You can read about *forall x* in general here:

<https://www.fecundity.com/logic/>

Optional Texts:

If you'd like something else to read, here are two introductory logic texts I like, which will fit reasonably well with our main text:

- Paul Herrick, *Introduction to Logic*. Does a nice job explaining some key concepts more slowly and in more detail. Emphasizes natural deduction over trees.
- Greg Restall, *Logic: An Introduction*. More closely related to the way this course will be structured. Emphasizes trees over natural deduction. (Uses a different natural deduction system than the one we'll learn.)

Note to Students:

Formal logic is in significant respects unlike other philosophy courses you may have taken. We are learning a formal system that has definite rules; the rhetorical skills that are important in other philosophical study will be less applicable here. You will construct proofs, not essays, in this course. In many respects, this course will be more similar to a mathematics course than to a prototypical philosophy course. Note also that most students will find the first few weeks significantly easier than most of the course.

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Topics:

- Propositions, arguments, argument forms, and validity
- Propositional connectives: conjunction, disjunction, conditionals, biconditionals, negation
- Recursion
- Truth tables, entailment, and proof
- Trees (“analytic tableaux”)
- Soundness and completeness for sentential logic trees
- Natural deduction for sentential logic
- Names, predicates, quantifiers, and identity
- Models for predicate logic
- Trees for predicate logic
- Soundness and completeness for predicate logic trees
- Natural deduction for predicate logic

Expectations:

High academic standards are expected at UBC in general and in this course in particular. Students are expected to attend all lectures, and to read all the relevant readings. (Some students will find they get the most out of reading if they read before the corresponding lecture; others will get the most value out of letting the lecture introduce the material, then reading afterward. Doing both is highly encouraged!)

Top Hat:

The use of “Top Hat” is required for this course. Top Hat is a student interactive system that allows me to gauge student comprehension during the lectures. Your Top Hat responses *will* affect your grade for the course—details TBD. Consequently, you should consider regular attendance for this course to be mandatory.

Homework:

I will assign weekly exercises for you to practice at home. These are useful both for developing the skills introduced in lecture, and for indicating what sorts of questions to expect on exams. *Students will choose at the start of the semester whether they will have homework assessed for a grade.* Even for those who elect not to be assessed on homework, homework assignments are *very* strongly recommended. See the homework policy handout for further explanation.

Midterm Exams:

There will be three in-class midterm exams.

Final Exam:

There will be a final exam during the December examination period. This is a cumulative exam, covering all the material in the course.