PHIL 296: Honors Logic

Brian Weatherson

Fall 2022

Lead Instructor: Brian Weatherson
weath@umich.edu
canvas.umich.edu

Office Hours: TBA

Course Description

This course is a fairly fast-paced introduction to many different logics. We will start with a very quick discussion of **classical logic**, the logic that is used in most other courses (both in philosophy and elsewhere). We'll then move on to **modal logic**, the logic of possibility and necessity. And finally, we'll look at rivals to classical logic, the imaginatively named **non-classical logics**. The aim of the course is to both give you a working familiarity with the technical aspects of these logics, but also some background about why one might care about rivals to classical logic, and when one might think these rivals are suitable to use.

Canvas

There is a Canvas site for this course, which can be accessed from https://canvas.umich.edu. Course documents (syllabus, lecture notes, assignments) will be available from this site. Please make sure that you can access this site. Consult the site regularly for announcements, including changes to the course schedule. And there are many tools on the site to communicate with each other, and with me.

Required Materials

The bulk of the course will be spent working through selections from

- *An Introduction to Non-Classical Logic: From If to Is*, by Graham Priest Cambridge University Press, 2008. Second Edition.

It is not important that you have the physical version of the book; the electronic version is fine. But it is important that you have the second edition; the first edition only has half the material.

Course Requirements

1. Participate in class. We will spend a bit of time in class going over problems, and it is important to practice these.
2. Do weekly online quizzes. These will be available through Canvas.
3. Do a final exam. This will also be through Canvas.

Grade Breakdown

- Class participation: 10%;
- Ten Quizzes, of which the best 8 will count: 7.5% each, for a total of 60%;
- Final Exam: 30%.

The quizzes will be due on Friday, and will mostly cover the material from that week. (The exceptions are noted in the text below.) The exam will be held through Canvas, and will be due on the scheduled date of the exam. The schedule is at https://ro.umich.edu/calendars/final-exams/2022-fall, and I believe that means we're to be done by 6pm on Monday, December 12.

The course is in three parts: Classical Logic, which is weeks 1-3; Modal Logic, which is weeks 4-8, and Non-Classical Logic, which is weeks 9-14. The readings other than the Priest book are mostly linked here. Some of the links require UM authorisation; it's easiest to simply be on campus when you access them.

Part One: Classical Logic

Monday, August 29

Topic Introducing the course
Required Reading This syllabus
Suggested Reading Priest, Mathematical Prolegomenon (Chapter 0)
Note that I won't be covering this in class, unless people have questions.

Wednesday, August 31

Topic Classical Propositional Logic
Required Reading Priest, §§1.1-1.6.
Weekly Quiz None this week

Wednesday, September 07

Topic Conditionals
Required Reading Priest, §§1.7-1.11
Suggested Reading H. P. Grice, *Logic and Conversation*.
Weekly Quiz Due 5pm, Friday, September 09

Monday, September 12

Topic Classical Predicate Logic
Required Reading Priest, §§12.1-3

Wednesday, September 14

Topic Classical Predicate Logic (continued)
Required Reading Priest, §§12.4-12.7
Suggested Reading Amie Thomasson, *Existence Questions*.
Weekly Quiz None this week; the quiz next week will cover this week's material.

Part Two: Modal Logic

Monday, September 19

Topic Basic Modal Logic
Required Reading Priest §§2.1-3.
Suggested Reading Dorothy Edgington, *Two Kinds of Possibility*

Wednesday, September 21

Topic Modal Tableaux
Required Reading Priest, §§2.4-2.8.
Weekly Quiz Due 5pm, Friday, September 23; this will be on classical predicate logic.

Monday, September 26

Topic Normal Modal Logics
Required Reading Priest, §§3.1-3.6.

Wednesday, September 28

Topic Tense Logic
Required Reading Priest, §§3.6a-b.
Weekly Quiz Due 5pm, Friday, September 30

Monday, October 03

Topic Non-Normal Modal Logics
Required Reading Priest, Ch. 4

Wednesday, October 05

Topic Conditional Logics
Required Reading Priest, Ch. 5
Weekly Quiz Due 5pm, Friday, October 07; this will cover the first two weeks of modal logic.

Monday, October 10

Topic Modal Predicate Logic
Required Reading Priest, Ch. 14

Wednesday, October 12

Topic Variable Domain Modal Logic
Required Reading Priest, §§15.1-4
Weekly Quiz No quiz this week

Wednesday, October 19

Topic More on variable domains
Required Reading Priest, §§15.5-12
Weekly Quiz Due 5pm, Friday, October 21

Monday, October 24

Topic Necessary Identity in Modal Logic
Required Reading Priest, Ch. 16

Wednesday, October 26

Topic Contingent Identity in Modal Logic
Required Reading Priest, Ch. 17
Weekly Quiz Due 5pm, Friday, October 28

Part Three: Non-Classical Logics

Monday, October 31

Topic Intuitionist Logic
Required Reading Priest, Ch. 6

Wednesday, November 02

Topic Many-Valued Logics
Required Reading Priest, Ch. 7
Weekly Quiz Due 5pm, Friday, November 04

Monday, November 07

Topic First Degree Entailment
Required Reading Priest, Ch. 8

Wednesday, November 09

Topic Logics with Gaps and Gluts
Required Reading Priest, Ch. 9
Weekly Quiz Due 5pm, Friday, November 11

Monday, November 14

Topic Relevant Logics
Required Reading Priest, §§10.1-4a

Wednesday, November 16

Topic The system R
Required Reading Priest, §§10.5-10.11
Weekly Quiz Due 5pm, Friday, November 18

Monday, November 21

Topic Fuzzy Logics
Required Reading Priest, Ch. 11
Weekly Quiz None this week

Monday, November 28

Topic Intuitionist Predicate Logic
Required Reading Priest, Ch. 20

Wednesday, November 30

Topic Fuzzy Predicate Logic
Required Reading Priest, Ch. 25
Weekly Quiz Due 5pm, Friday, December 02

Monday, December 05

Topic Review
Required Reading None

- The last week will be for review, and for extra time for any topic we felt was too rushed through the course.

Plagiarism

Although team-work is encouraged, plagiarism is strictly prohibited. You are responsible for making sure that none of your work is plagiarized. Be sure to cite work that you use, both direct quotations and paraphrased ideas. Any citation method that is tolerably clear is permitted, but if you'd like a good description of a citation scheme that works well in philosophy, look at http://bit.ly/VDhRJ4.

You are encouraged to discuss the course material, including assignments, with your classmates, but all written work that you hand in under your own name must be your own.

You should also be familiar with the academic integrity policies of the College of Literature, Science & the Arts at the University of Michigan, which are available here: http://www.lsa.umich.edu/academicintegrity/. Violations of these policies will be reported to the Office of the Assistant Dean for Student Academic Affairs, and sanctioned with a course grade of F.

Disability

The University of Michigan abides by the Americans with Disabilities Act of 1990, Section 504 of the Rehabilitation Act of 1973, and other applicable federal and state laws that prohibit discrimination on the basis of disability, which mandate that reasonable accommodations be provided for qualified students with disabilities.

If you have a disability, and may require some type of instructional and/or examination accommodation, please contact me early in the semester. If you have not already done so, you will also need to register with the Office of Services for Students with Disabilities. The office is located at G664 Haven Hall.

For more information on disability services at the University of Michigan, go to http://ssd.umich.edu.