

Philosophy 322A

Modal Logic

Syllabus

John Woods
Buchanan E 355
Email john.woods@ubc.ca
Course ULR www.johnwoods.ca

TuTh 9:30-10:45
Office Hours: TuTh 11:00-12:00
F 1:45-2:45

This course is an extension of PHIL 220 (Symbolic Logic I), which is a prerequisite. In its most basic form, modal logic arises from standard (or classical) logic by addition to its vocabulary of the symbols \Box and \Diamond , and adjusting accordingly the logic's grammar, semantics and proof rules. Historically, \Box and \Diamond have been interpreted as sentence operators that carry the meaning of, respectively, "necessarily" and "possibly." However, developments in the twentieth century have shown that interesting logics arise when \Box and \Diamond are given different pairs of interpretations. When they are construed as "it is known that" and "it is believed that," one gets an *epistemic* logic. When \Box means "at all future times" and \Diamond means "at some future time", one gets a *temporal* logic. When these symbols mean "after any change" and "after some change", a *dynamic* logic ensues. When \Box is "it is obligatory that" and \Diamond is "it is permissible that," a *deontic* logic arises.

Students who have successfully completed PHIL 220, or a comparable course elsewhere, will have a working familiarity with one or other proof systems for both classical first order logic (propositional logic and predicate logic);

- Semantic tableaux (or truth-trees)
- Natural deduction
- Axiomatics

In this course, a general familiarity with all three is assumed; but we shall follow the textbook in setting out proofs in semantic tableaux form. In the early going, we will review the semantic tableaux rules as they apply to classical contexts. We shall subsequently adapt them to modal contexts, as needed.

Required Text. Rod Girle, *Modal Logics and Philosophy*, Montreal & Kingston: McGill-Queen's University press 2000.

Online notes, which are also required reading, will be posted throughout the term.

Assignments

1. In-class test, Thursday, 26 January, 2012.
2. In-class test, Thursday, 23 February, 2012.
3. In-class test, Thursday, 22 March 2012.

Each in-class test runs for 50 minutes, and each is worth 20 % of the final mark.

4. Final examination, TBA.

The final exam is worth 40 % of the final mark.

Marking key

A+ 90-100	A 85-89	A- 80-84
B+ 76-79	B 72-75	B- 68-71
C+ 64-67	C 60-63	C- 55-59
	F 0-49 (fail)	