PHL 499: Special Topics (Modal Logic)

Spring 2013 * TBA * Mon and Wed 12:00 p.m. - 1:45 p.m.

Instructor

Gabriel Uzquiano Office: 230 Stonier Hall E.mail: uzquiano@usc.edu Phone: (213) 740-1074 Office hours: TBA

Course description

This course will cover elements of propositional modal logic, the logic of conditionals and quantified modal logic and counterpart theory. The semester will be divided in three parts, each addressing a different set of topics.

• Propositional modal logic

We will cover basic meta-theoretic results for standard propositional logic; axiomatic presentations of propositional modal logic; a minimal modal logic K; schemas D, T, B, 4 and 5; S5 and metaphysical necessity and possibility; tense logic.

• Conditionals

Topics include the distinction between material, indicative and counterfactual conditionals; Stalnaker's semantics for indicative and counterfactual conditionals; Lewis' semantics for counterfactual conditionals.

• Quantified modal logic and counterpart theory

We will cover the distinction between *de re* and *de dicto*; questions raised by the simplest quantified modal logic; constant domain and variable domain semantics for quantified modal logic and the contingency of existence. Lewis on counterpart theory and quantified modal logic.

Textbook

There is one required textbook for this course:

Sider, T. (2010) Logic for Philosophy. Oxford University Press.

Additional material will be taken from lecture notes, which will be made available online.

Course requirements

There will be six problem sets and an open-book final exam for this course.

• Six problem sets will account for 60 % of the grade.

- An open-book final exam, which will account for 35 % of the grade.
- Participation will contribute 5 % of the grade.

Academic integrity

All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A:

http://www.usc.edu/dept/publications/SCAMPUS/gov/

Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at:

http://www.usc.edu/student-affairs/SJACS/

Statements for students with disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to us as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m. to 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

Tentative schedule

I. Propositional Modal Logic

Week 1. Review of propositional logic: syntax and semantics.

- Logic for Philosophy, Chapter 2, §§2.3–2.6.

Week 2. Completeness of propositional logic

- Logic for Philosophy, Chapter 2, §§2.7–2.9.

Problem set 1 due

Week 3. Modal propositional logic: introduction

- *Logic for Philosophy*, Chapter 6, §§6.1–6.2.

Week 4. Modal propositional logic: standard possible worlds semantics

- Logic for Philosophy, Chapter 6, §6.3.

Problem set 2 due

Week 5. Landscape of normal modal logics

- Logic for Philosophy, Chapter 6, §6.4.

Week 6. Canonical models and completeness

- Logic for Philosophy, Chapter 6, §§6.5–6.6.

Problem set 3 due

Week 7. Applications of modal logic

- Logic for Philosophy, Chapter 7, §§7.1–7.3.

II. Conditionals

Week 8. Indicative and counterfactual conditionals

- Logic for Philosophy, Chapter 8, §8.1.

Week 9. Stalnaker on counterfactual conditionals

- Logic for Philosophy, Chapter 8, §§8.2–8.6.

Problem set 4 due

Week 10. Lewis on counterfactual conditionals

- Logic for Philosophy, Chapter 8, §§8.7–8.9.

III. Quantified modal logic and counterpart theory

Week 11. Historical and philosophical introduction

- *Logic for Philosophy*, Chapter 9, §§9.1–9.2.

Week 12. The simplest quantified modal logic

- Logic for Philosophy, Chapter 9, §§9.3–9.5.

Problem set 5 due

Week 13. The contingency of existence

- Logic for Philosophy, Chapter 9, §§9.6–9.7.

Week 14. Counterpart theory and quantified modal logic

- Lewis, D. (1968) 'Counterpart theory and quantified modal logic'.

Week 15. The logic of actuality

- Logic for Philosophy, Chapter 10.

Problem set 6 due

Week 16. Final Exam.