

PHIL2202
Symbolic Logic 符號邏輯

Course Outline

Time: M 10:30am-1:15pm

Location: LSK 301

Course overview (as shown on CUSIS)

This is an intermediate-level course in formal logic, concentrating on various logics beyond standard first-order logic. The course will cover both model-theoretic approaches and proof-theoretic approaches to these systems, including non-classical propositional/predicate logics, propositional modal logics, and first-order modal logics. A small amount of metalogic will be covered too.

Advisory to Majors: to be taken in year 2 or above.

Also, students will need to **spend 5-10 hours per week** on required reading and weekly assignment. Please take the expected workload into account when deciding whether to enroll into this course. Students should also bear in mind that **the aim of the lectures** is to help them understand Sider's textbook better when they **re-read** it after class, as it could be very difficult to absorb every content covered in the class if what you do is only (i) to listen to the lectures, or/and (ii) to read the required reading just once.

Learning outcomes (as shown on CUSIS)

1. Grasp concepts and methods in intermediate-level logic.
2. Understand the philosophical significance of modern logic.
3. Ability to construct formal systems of propositional and predicate logic.
4. Ability to analyze and critically evaluate formal systems.
5. Understand the characteristics and value of these different formal systems.

Topics

1. Basic concepts: logical and set-theoretic
2. Various propositional logics
3. Various predicate logics
4. Modal logics

Learning activities

1. **Lecture: 2 hours per week**
2. **Tutorial (Review of Weekly Assignment): 1 hour per week**
3. **Reading: 3-5 hours per week**
4. **Written Assignments: 30 mins per week (for all required exercises) or 3-5 hours per week (for all required and optional exercises)**

Assessment scheme as prescribed on CUSIS (revise if necessary)

<i>Task nature</i>	<i>Description</i>	<i>Weight</i>
Assignments	5% for each assignment	50%
Exams	25% for each exam	50%

Grade Descriptor

Please refer to: http://phil.arts.cuhk.edu.hk/~phidept/UG/Grade_descriptors.pdf

Recommended learning resources

Sider, Theodore, 2010, *Logic for Philosophy*, Oxford: Oxford University Press. (Henceforth: “LfP”.)

Course schedule

<i>Week</i>	<i>Topics</i>	<i>Required reading</i>	<i>Tutorial</i>	<i>Remarks</i>
Week 1 6 Jan	Introduction	LfP, Ch.1 (Esp. 1.5 and the former part of 1.8, i.e. before page 17)		
Week 2 13 Jan	Standard Propositional Logic: Model Theory, Axiomatic System, Metalogic, and Induction	LfP, 2.1-2.4; 2.6; 2.7*	Review of Assignment for Week 1	
Week 3 20 Jan	Standard Predicate Logic: Model Theory, Axiomatic System, and Metalogic	LfP, 4.1-4.4; 4.5*	Review of Assignment for Week 2	
Week 4 27 Jan	Beyond Standard Propositional Logic	LfP, 3.1; 3.3-3.4	Review of Assignment for Week 3	
3 Feb	No Class: Lunar New Year			
Week 5 10 Feb	Identity Predicate, Definite Descriptions, λ -abstraction, and Free Logic	LfP, 5.1; 5.3.3; 5.5*; 5.6	Review of Assignment for Week 4	
Week 6 17 Feb	Modal Propositional Logic: Model Theory I	LfP, 6.1-6.3.1	Review of Assignment for Week 5	
Week 7 24 Feb	Modal Propositional Logic: Model Theory II	LfP, 6.3.2-6.3.3	Review of Assignment for Week 6	
3 Mar	No Class: Reading Week			
Week 8 10 Mar	Midterm Exam	Scope: Weeks 1-5		
Week 9 17 Mar	Modal Propositional Logic: Proof Systems and Metalogic	LfP, 6.4; 6.5*	Review of Assignment for Week 7	
Week 10 24 Mar	Modal Propositional Logic: Applications	LfP, 7.1-7.3	Review of Assignment for Week 9	
Week 11 31 Mar	Modal Quantified Logic: Model Theory and Proof System	LfP, 9.1-9.7	Review of Assignment for Week 10	
Week 12 7 Apr	Higher-Order Logic	Sider's Handout	Review of Assignment for Week 11	Non-examinable
Week 13 14 Apr	Final Exam	Scope: Weeks 6-7; Weeks 9-11		

Contact details for teacher(s) or TA(s)

Teacher	
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Academic honesty and plagiarism

Attention is drawn to University policy and regulations on honesty in academic work, and to the disciplinary guidelines and procedures applicable to breaches of such policy and regulations. Details may be found at <http://www.cuhk.edu.hk/policy/academichonesty/>

With each assignment, students will be required to submit a signed declaration that they are aware of these policies, regulations, guidelines and procedures. For group projects, all students of the same group should be asked to sign the declaration.

For assignments in the form of a computer-generated document that is principally text-based and submitted via VeriGuide, the statement, in the form of a receipt, will be issued by the system upon students' uploading of the soft copy of the assignment. Assignments without the receipt will not be graded by teachers. Only the final version of the assignment should be submitted via VeriGuide.