PHIL2202 Symbolic Logic 符號邏輯
Course Outline

Time：	T 10:30-13:15	Location：	LSK 208

Course overview

This course aims to provide an intermediate introduction to symbolic logic.   In this course, the formal languages for truth-functors and quantifiers will be constructed.   Four formal systems of proofs, namely, 'Semantic Tableaux', 'Axiomatic Proofs', 'Natural Deduction' and 'Sequent Calculi', will be presented.   Various completeness proofs will also be demonstrated.

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

Learning outcomes

After taking this course, students should be able to:

- grasp the basic concepts in intermediate symbolic logic.
- demonstrate familiarity with the major methods in intermediate symbolic logic.
- construct formal languages for truth-functors and quantifiers.
- understand the four formal systems of proof.
- compare and evaluate the four formal systems of proof.
- acquire skills in logical reasoning.
- appreciate the philosophical significance of symbolic logic.

Topics

1. Truth, validity and entailment

2. Languages for truth-functors (Propositional calculus)

3. Languages for quantifiers (Predicate logic)

4. Semantic tableaux

5. Axiomatic proofs

6. Natural deduction

7. Sequent calculi

Learning activities

Learning activities of this course include lectures, tutorials, reading the textbooks, handouts and other readings, mid-term examination and final examination:

1. Lecture: 2 hours a week (mandatory).

2. Tutorial class: one two-hour session every two weeks (mandatory).

3. Preparation for the mid-term examination.

4. Preparation for the final examination.

In this course, students are required to attend all the lectures and tutorials. Students are expected to read assigned materials from the textbook and, if any, other books and essays before the lectures and study tutorial materials, usually consisting of exercises from the textbook, before the tutorial classes.

Assessment scheme

Task nature	*Description*	*Weight*
Tutorial presentation and participation		25%
Mid-term examination		25%
Final examination		50%

Recommended learning resources

Textbook:

Bostock, D. *Intermediate Logic*. Oxford: OUP 1997.

References:

Enderton, H. *A Mathematical Introduction to Logic*. 2nd edition, San Diego: Harcourt 2001.

Hurley, P. *A Concise Introduction to Logic*. 10th edition, Boston: Wadsworth 2008.

Jago, M. Formal Logic. Tirril: Humanities-Ebooks 2007.

Kleene, S. C. *Mathematical Logic*. NY: Dover 2002.

Klenk, V. *Understanding Symbolic Logic*. 5th edition. NJ: Pearson Prentice Hall 2008

Quine, W. V. *Methods of Logic*. 4th edition, Cambridge: Harvard U. Press 1982.

Suppes, P. *Introduction to Logic*. NY: van Nostrand 1968.

Tarski, A. *Introduction to Logic*. NY: Dover 1995.

Course schedule

Week	Topics	Required reading	Tutorials	Remarks
1	1. Truth, validity and entailment	The textbook, pp.3-13.		
2	2. Languages for truth-functors	The textbook, pp.14-44		

3	2. Languages for truth-functors	The textbook, pp.45-69.		
4	3. Languages for quantifiers	The textbook, pp.70-95.		
5	3. Languages for quantifiers	The textbook, pp.96-125.		
6	3. Languages for quantifiers	The textbook, pp.126-38.		
7	4. Semantic tableaux	The textbook, pp.141-67.		
8	4. Semantic tableaux	The textbook, pp.168-89.		Mid-term examination
9	5. Axiomatic proofs	The textbook, pp.190-216.		
10	5. Axiomatic proofs	The textbook, pp.217-38.		
11	6. Natural deduction	The textbook, pp.239-61.		
12	6. Natural deduction	The textbook, pp.262-72.		
13	7. Sequent calculi	The textbook, pp.273-90.		
14	7. Sequent calculi	The textbook, pp.291-320.		

Details of course website

We use WebCT for this course. Relevant announcements and course documents (e.g., lecture notes) will be posted regularly on the website.

Feedback for evaluation

1. Students are welcome to give feedback on the course at any time. They can do so by communication to teacher or tutor in class, by email, posting comments and questions to the eLearing platform, or during tutorials.

2. As with all courses in Philosophy Department, students evaluate the course through a survey and written comments at the end of the term.

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

Teacher	
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