

PHIL1310
Logic 邏輯

Course Outline

Time : W 11:30am-13:15pm

Location: TBA

Tut : TBA

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Course overview (as shown on CUSIS)

This course is designed to develop students' ability to analyze and critically evaluate arguments from a logical point of view. It will provide them with a basic understanding of such concepts as reasons, implication, validity, and fallacies. Students will learn the logical principles of deductive and inductive inferences and the techniques of applying them for determining the validity of arguments. Elements of good reasoning from an informal perspective will also be covered.

Learning outcomes (as shown on CUSIS)

1. Acquire logical skills and critical disposition.
2. Grasp of basic concepts and methods in logic.
3. Translate arguments in ordinary language into symbolic argument forms.
4. Recognize common valid argument forms.
5. Ability to identify, classify, and assess arguments in various contexts.
6. Ability to identify and analyze informal fallacies.

Topics

1. Deductive reasoning vs. non-deductive reasoning
2. Key concepts of deductive logic
3. Formal languages of sentential logic and predicate logic
4. Formalization of arguments
5. Model-theoretic semantics
6. Natural deduction
7. Basic meta-theoretic concepts and results

Learning activities

1. Interactive classes
2. In-class quizzes
3. Weekly problem sets
4. Reading and written assignments

Assessment scheme as prescribed on CUSIS (revise if necessary)

<i>Task nature</i>	<i>Description</i>	<i>Weight</i>
Tutorial participation	To be evaluated based on performance in quizzes and discussions.	10%
Two assignments	One before the midterm and one before the final in preparation for the exams	20%
Midterm exam	90-minute in-class exam (on 18 October)	30%
Final exam	120-minute exam (date and venue TBA)	40%

Grade Descriptor

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

Recommended readings and learning resources

Required readings:

Jiji Zhang, *Lecture notes on sentential and predicate logic*, manuscript.

And selected chapters from

Patrick Hurley, *A Concise Introduction to Logic*, 11th ed., Wadsworth, 2012.

Paul Teller, *A Modern Formal Logic Primer*. <http://tellerprimer.ucdavis.edu>.

Recommended references:

Gary Hardegree, *Symbolic Logic: A First Course*. <http://courses.umass.edu/phil110-gmh/text.htm>

Merrilee H. Salmon, *Introduction to Logic and Critical Thinking*, 6th ed., Wadsworth, 2013.

Alfred Tarski, *Introduction to Logic And to the Methodology of Deductive Sciences*, Dover, 1995.

林正弘，〈邏輯〉，第四版，三民書局，2020。

徐明，〈符号逻辑讲义〉，武汉大学出版社，2008。

Course schedule

<i>Week</i>	<i>Topics</i>	<i>Required reading</i>
1. 6 Sep	Overview	Hurley, chap 1.1-1.3
2. 13 Sep	Sentential logic I: formal language, truth function, and truth table	Zhang, chap 2; Hurley, chap 6.2
3. 20 Sep	Sentential logic II: logical consequence, validity, and tautology	Zhang, chap 3; Hurley, chap 6.4-6.5
4. 27 Sep	Sentential logic III: truth tree and normal form	Zhang, chap 4; Teller, chap I. 8
5. 4 Oct	Sentential logic IV: natural deduction	Zhang, chap 5;

		Hurley, chap 7.5-7.6
6. 11 Oct	Sentential logic V: soundness and completeness	Teller, chap II.10
7. 18 Oct	Midterm Exam (in-class, 90-minute exam)	NA
8. 25 Oct	Predicate logic I: motivation	Hurley, chap 5.1-5.2
9. 1 Nov	Predicate logic II: formal language and translation	Zhang, chap 7; Hurley, chap 8.1
10. 8 Nov	Predicate logic III: more on translation (with the identity symbol)	Zhang, chap 8
11. 15 Nov	Predicate logic IV: model-theoretic semantics	Zhang, chap 9; Teller, chap II. 2
12. 22 Nov	Predicate logic V: natural deduction	Zhang, chap 10
13. 29 Nov	Course review	NA

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.