

Draft

LOGIC

Course Description

This course is designed to develop the student's ability to analyze and critically evaluate arguments from a logical point of view. It will provide students 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

1. Acquire analytic skills and a critical disposition.
2. Describe the essential elements of good reasoning and argumentation.
3. Demonstrate familiarity with major proof methods in propositional and predicate logic.
4. Translate arguments in ordinary language into symbolic argument forms.
5. Recognize common valid argument forms.
6. Identify, classify, and assess arguments in various contexts.
7. Identify and analyze informal fallacies.

Medium of Instruction

Lectures in Cantonese; reading materials in Chinese and English; mid-term and exam in Chinese

Assessment

Mid-term	40% (true-or-false, and short questions; covers ①—⑥)
Final exam	60% (true-or-false, short questions and natural deduction; covers ①—⑬)

Instructor

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Reference

- Salmon, W. *Logic*. Upper Saddle River, N. J.: Prentice Hall, 1973.
- Copi, I. M. *Introduction to Logic*, 14th ed., Harlow: Pearson, 2014.
- Quine, W. V. *Methods of Logic*, 4th ed., Cambridge, Mass.: Harvard, 1982.
- Smullyan, R. M. *The Gödelian Puzzle Book*, New York: Dover, 2013.
- Leary, C. C. *A Friendly Introduction to Mathematical Logic*, N. J.: Prentice Hall, 1999.
- 李天命著：《語理分析的思考方法》。香港：青年書屋，1981年。
- 李天命著：《李天命的思考藝術》。香港：明報出版社，2009年。
- 李天命著：《哲道行者》。香港：明報出版社，2009年。

SCHEDULE

Date	Topic	Sub-topics	Reading
① 12/5/2015	Introduction	Fields in logic, logic games	
② 15/5/2015	Language	Vagueness, ambiguity, colouration	《語理分析的思考方法》
③ 19/5/2015	Linguistic traps	Semantic obscurity, peculiarity, and triviality	《李天命的思考藝術》： 思考與心魔
④ 22/5/2015	Fallacies I	Inconsistency, irrelevance	《哲道行者》： 思方學大要·語理分析
⑤ 26/5/2015	Fallacies II	Insufficiency, inappropriate assumption	《哲道行者》： 思方學大要·謬誤剖析
⑥ 29/5/2015	Propositional logic I	Connectives, truth-tables, validity	Copi Ch.8
⑦ 2/6/2015	Mid-term		
	Propositional logic II	RAA, translation	
⑧ 5/6/2015	Natural deduction I	Basic rules	Copi Ch.9
⑨ 9/6/2015	Natural deduction II	Proof techniques	
⑩ 12/6/2015	Natural deduction III	Examples and practice	
⑪ 16/6/2015	Venn Diagrams		
⑫ 19/6/2015	Predicate logic	Existential quantifier, universal quantifier	Copi Ch.10
⑬ 23/6/2015	Logic systems	Axiomatic systems, meta-logic	
⑭ 26/6/2015	Final		

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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 properly signed declaration will not be graded by teachers. Only the final version of the assignment should be submitted via VeriGuide.