The Chinese University of Hong Kong Department of Philosophy

UGED1111F Logic 邏輯 Course Outline (tentative)

Course overview

Evaluating arguments and supporting one's claim with good reasoning are of utmost importance in academia as well as in daily life. These skills are also essential for one to understand and participate in the public debates of our modern society.

Logic is the study of reasoning. In this course students will acquire various conceptual tools in logic to critically evaluate arguments. Central concepts in classical logic such as proposition, validity, soundness, entailment will be introduced. Major proof-theoretic methods in propositional and predicate logic will also be covered. Students will also learn how to evaluate inductive arguments and identify informal fallacies. By the end of the course, students are expected to adopt a critical deposition towards other's and their own reasoning.

不論在學院還是是日常生活,評價不同論證和以理由支持自己的看法都可說是十分重要。在現代社會,這些能力對於我們理解和參與不同的公共討論更是必不可少。

邏輯為研究推論的學科。本課旨在介紹邏輯中不同的概念和理論,讓學生學會怎樣評價論證。本課將涵蓋諸 如命題、對確、真確、蘊涵等經典邏輯中的重要概念,簡介一些命題和謂詞邏輯中主要的推論系統,亦會講 授如何評價歸納論證和辨認不同的非形式謬誤。上完本課後,希望學生能慣於以批判的態度去面對他人和自 己的推論。

Learning outcomes

After completing this course, students should be able to:

- 1. Use basic logical concepts such as validity, soundness, entailment to evaluate an argument
- 2. Analyse and identify informal fallacies in an argument
- 3. Evaluate inductive arguments
- 4. Construct valid argument in categorical syllogism
- 5. Translate sentences in natural languages into formal language
- 6. Determine the validity of an argument by using truth table
- 7. Conduct simple proof in Natural Deduction (both propositional and predicate logic)

Topics

- 1. What is Logic?
- 2. Basic Concepts
- 3. Categorical Syllogisms
- 4. Symbolic Language and Truth Table
- 5. Natural Deduction in Propositional Logic
- 6. Natural Deduction in Predicate Logic
- 7. Inductive Argument
- 8. Informal Fallacies

Learning activities and workload

In-class:

1. Lecture: 2 hours each week.

Out-of-class:

- 1. Revision: lecture material (3-4 hours)
- 2. Suggested exercises and readings (4 hours)

Suggested exercises and readings are assigned. Students are expected to complete them before the next lecture.

3. Online discussion (3 hours)

Students are encouraged to raise questions and discuss on an online platform. The lecturer will also post some questions for the students to discuss on a regular basis.

Assessment scheme

Task nature	Weight
Mid-term exam	40%
Final exam	50%
Class and online discussion	10%

Recommended learning resources

- 1. Patrick Hurley, A Concise Introduction to Logic, 11th ed., Wadsworth, 2012. (Textbook)
- 2. Irving Copi and Carl Cohen, Introduction to Logic, 11th ed., Prentice Hall, 1998.
- 3. Merrie Bergmann and James Moore, *The Logic Book*, 4th ed., McGraw-Hill, 1998.
- 4. Lau, Joe Y. F. (2011). *An Introduction to Critical Thinking and Creativity: Think More, Think Better*. Hoboken, N.J. Wiley
- 5. Alec Fisher, *The Logic of Real Arguments*, Cambridge University Press, 1988.
- 6. Douglas N. Walton, *The New Dialectic: Conversational Contexts of Argument*, University of Toronto Press, 1988.
- 7. Douglas N. Walton, Informal Logic, Cambridge University Press, 1989.
- 8. Trudy Govier, *A Practical Study of Argument*, 5th ed., Wadsworth Thomson Learning, 2001.
- 9. Wayne Grennan, Informal Logic: Issues and Techniques, McGill-Queen's University Press, 1997.
- 10. Richard Jeffrey, Formal Logic, 2nd ed., McGraw-Hill, 1989.
- 11. Wesley Salmon, Logic, Prentice Hall, 1963.
- 12. Peter Strawson, Introduction to Logical Theory, Methuen, 1952.
- 13. 林正弘,《邏輯》,三民書局,1994。
- 14. 李天命,《李天命的思考藝術》,明報出版社有限公司,1999。
- 15. 貝剛毅, 2014, 《思方導航(第四版)》, 匯智出版。

Feedback for evaluation

1. Students are strongly encouraged to provide feedback on the course via email or meetings with lecturer.

2. Students evaluate the course through a survey and written comments at the end of the term as well as via regular feedback between teacher and students. This information is highly valued and is used to revise teaching methods, tasks, and content.

Course schedule

Week	Topic	Requirements
1	What is Logics?	Major reading: textbook pp. 1–25
2–3	Basic Concepts	Major reading: textbook pp. 33-63
4	Categorical Syllogisms	Major reading: textbook pp. 197–277
5-6	Symbolic Language and Truth Table	Major reading: textbook pp. 310–357
7–8	Natural Deduction in Propositional Logic	Major reading: textbook pp. 380–419
9	Natural Deduction in Predicate Logic	Major reading: textbook pp. 442–466
10	Inductive Argument	Major reading: textbook pp. 593-630
11–13	Informal Fallacies	Major reading: textbook pp. 119–184

Contact details

Lecturer	
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Details of course website

We use Blackboard Learn for this course. Lecture notes and information on tutorial assignments and examinations will be posted on the website.

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.