The Chinese University of Hong Kong
Department of Philosophy
UGED1111C Logic 邏輯
Course Outline

Lecturer: Dr. Arthur C. S. CHIN Email: arthurchin2@yahoo.com.hk
Lecture time: Tue / Thur 09:30-11:15 Instruction language: Cantonese / English
Venue: Yasumoto Intl Acad Park LT7 (Tue) / Wong Foo Yuan Bldg LT4 (Thur)

Course Overview

This course aims to develop students' ability to identify, analyze and evaluate arguments in a clear and logical manner. It will introduce to students important concepts in logic such as validity, logical implication, and fallacy. Principles of deductive and inductive reasoning will be explained, and a range of examples will be employed to illustrate how such principles may be applied. Through extensive case studies, in-class discussions and problem sets, students will come to acquire not only the requisite theoretical knowledge but also the appropriate disposition to think analytically and critically.

Learning Outcomes

1) Understanding the central concepts and principles in classical logic.
2) Having the ability to identify, interpret, and critically assess arguments in different spheres of life.
3) Having the ability to identify the various forms of argument and assess their validity.
4) Understanding the basic rules of the formal system of propositional logic, and having the ability to translate arguments in ordinary language into corresponding symbolic forms, and to construct proofs within that system.
5) Having the ability to identify and explain common fallacies.

Topics

1) Ordinary Language and Meaning Analysis
2) Argument Identification
3) Deductive Reasoning and Basic Concepts in Logic
4) Propositional Logic: Formal Language, Truth Table Method (Full and Indirect), and Natural Deduction
5) Inductive Reasoning
6) Fallacy

Course Schedule and Readings

- All readings are available on Blackboard, except Lau (2011) the full text of which is accessible through CU Library.

Week	Date	Topic	Remark
1	5/16	**Introduction** Key concepts: (i) what is logic about, and why study it; (ii) relevance and importance of logical thinking to our daily life <u>Reading</u> • Further: Lau (2011): Chapter 1 "Introduction"	
1	5/18	**Meaning Analysis and Argument Identification** Key concepts: (i) argument and non-inferential passages; (ii) techniques in argument identification; (iii) basic techniques in evaluating an argument <u>Readings</u> • Basic: Lau (2011): Chapter 3 "Definitions"; Chapter 4 "Necessary and Sufficient Conditions"; Chapter 8 "Identifying Arguments" • Further: Hurley (2018): Section 1.2 in Chapter 1 "Basic Concepts" (pp.14-33)	
2	5/23	**Deductive Reasoning and Basic Logic Part 1** Key concepts: (i) logical and empirical possibility; (ii) logical consistency; (iii) logical strength and equivalence; (iv) deductive and inductive inferences <u>Readings</u> • Basic: Lau (2011): Chapter 9 "Valid and Sound Argument" Further: Hurley (2018): Sections 1.3 and 1.4 in Chapter 1 "Basic Concepts" (pp.33-52)	
2	5/25	**Deductive Reasoning and Basic Logic Part 2** Key concepts: (i) validity; (ii) forms of argument; (iii) soundness <u>Readings</u> • Same as Deductive Reasoning Part 1	
3	5/30	**Propositional Logic (PL) Part 1: Basics** Key concepts: (i) formal logic; (ii) syntax in PL; (iii) semantics in PL, logical connectives, and truth-table <u>Reading</u> Basic: Hurley (2018): Chapter 6 "Propositional Logic"	

3	6/1	**Propositional Logic (PL) Part 2: Testing Validity by Truth Table** Key concepts: (i) formalizing natural language arguments; (ii) testing validity of PL sequents by the method of full truth table; (iii) the method of indirect truth table <u>Reading</u> Basic: Hurley (2018): Chapter 6 "Propositional Logic"	
4	6/6	**In-Class Midterm Test**	40%
4-5	6/8 And 6/13	**Propositional Logic (PL) Part 3: Natural Deduction** Key concepts: (i) concept and structure of natural deduction; (ii) 11 rules of inference; (iii) soundness and completeness <u>Reading</u> Basic: Hurley (2018): Chapter 7 "Natural Deduction in Propositional Logic"	
5-6	6/15 And 6/20	**Inductive Reasoning** Key concepts: (i) inductive argument and defeasibility; (ii) strength, cogency, and the requirement of total evidence; (iii) common types of inductive argument and their evaluation <u>Readings</u> • Basic: Lau (2011): Chapter 10 "Inductive Reasoning" (excluding 10.4); Chapter 17 "Statistics and Probability"; Chapter 21 "Analogical Reasoning" Further: 貝剛毅 (2014): 第四篇 歸納法 (12 至 15 章)	Reading Week
7	6/27	**Fallacy** Key concepts: (i) fallacy of inconsistency; (ii) fallacy of irrelevance; (iii) fallacy of insufficiency; (iv) fallacy of inappropriate presupposition <u>Readings</u> • Basic: Lau (2011): Chapter 19 "Fallacy" Further: Hurley (2018): Sections 3.1-3.4 in Chapter 3 "Informal Fallacies"	
7	6/29	**In-Class Final Test**	50%

Learning Resources

1. Copi, Irving & Cohen, Carl & McMahon, Kenneth (2014). *Introduction to Logic* (14th ed., International Edition). Upper Saddle River, NJ: Pearson Education.
2. Goldfarb, Warren (2003). *Deductive Logic*. Indianapolis: Hackett Pub. Co.

3. Lau, Joe Y. F. (2011). *An Introduction to Critical Thinking and Creativity: Think More, Think Better*. Hoboken, N.J: Wiley
4. Hausman, Alan & Kahane, Howard & Tidman, Paul (2010). *Logic and Philosophy* (11th ed.). Boston, MA: Thomson Wadsworth/Cengage Learning.
5. Hurley, Patrick (2018). *A Concise Introduction to Logic* (13th ed.). Australia ; Stamford, Ct.: Cengage Learning.
6. Priest, Graham (2000). *Logic: A Very Short Introduction*. Oxford: Oxford University Press.
7. Schick, Theodore & Vaughn, Lewis (2014). *How to Think about Weird Things* (7th ed.). New York: McGraw-Hill Companies, Inc.
8. 貝剛毅，2014，思方導航（第四版），匯智出版

Learning Activities and Workload

- Lecture (4 hours each week)
- Reading for each topic
- Class Exercises (NOT part of course assessment)

Assessment Scheme

Task	Description	Weight
Participation	In-Class Q&A and discussion	10%
In-Class Midterm Test	In-class exam (6/6)	40%
In-Class Final Test	In-class exam (6/29)	50%

- Format of Midterm and Final Test: T/F questions, MC, and short questions.
- Questions may be in Chinese or English only.

Details of Course Website

We use Blackboard for this course. Lecture notes and other information concerning problem sets and exams will be announced on the course website in due course.

Feedback for Evaluation

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

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 are required to submit a signed declaration (attachment 1) 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.

Grade Descriptors

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