**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: Fri 13:30-15:15
Instruction language: Cantonese / English
Venue: William M W Mong Eng Bldg 803

## 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

**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 | Jan 9 | **Introduction**<br><br>Key concepts: (i) what logic is; (ii) the relevance and importance of logic to our person and social life<br><br><u>Reading</u><br>• Recommended: Lau (2011) Chapter 1 | |
| 2 | Jan 16 | **Meaning Analysis and Argument Identification**<br><br>Key concepts: (i) method of definition; (ii) argument and non-inferential passages; (iii) techniques in argument identification; (iv) basic strategies in evaluating an argument<br><br><u>Reading</u><br>• Basic: Lau (2011) Chapter 3-4 and 8<br>• Recommended: Hurley (2018) Chapter 1 Section 1.2, pp.14-33. | |
| 4-6 | Jan 30, Feb 6 and 13 | **Deductive Logic**<br><br>Key concepts: (i) deductive and inductive logic; (ii) logical and empirical possibility; (iii) validity and soundness; (iv) logical strength and equivalence; (v) deductive argument form<br><br><u>Readings</u><br>• Basic: Lau (2011) Chapter 7 and 9<br>• Recommended: Hurley (2018) Chapter 1 Sections 1.3-1.4, pp.33-52. | |
| 7 | Feb 20 | **Propositional Logic: Basics**<br><br>Key concepts: (i) formal logic; (ii) syntax in propositional logic; (iii) semantics of logical connectives and truth-table<br><br><u>Reading</u><br>• Basic: Hurley (2018): Chapter 6 “Propositional Logic” | |
| **8** | **Feb 27** | **In-Class Midterm Test** | **40%** |

| | | | |
|---|---|---|---|
| 10 | Mar 13 | **Propositional Logic: Testing Validity by Truth Table**<br><br>Key concepts: (i) formalizing natural language arguments; (ii) method of full truth table; (iii) method of indirect truth table<br><br><u>Reading</u><br>• Basic: Hurley (2018) Chapter 6 | |
| 11-14 | Mar 20, 27 and Apr 10 | **Propositional Logic: Natural Deduction**<br><br>Key concepts: (i) concept and structure of natural deduction; (ii) 11 rules of inference; (iii) soundness and completeness of natural deduction<br><br><u>Reading</u><br>• Basic: Hurley (2018) Chapter 7 | |
| **15** | **Apr 17** | **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. **Lau, Joe Y. F. (2011). *An Introduction to Critical Thinking and Creativity: Think More, Think Better*. Hoboken, N.J: Wiley. (E-book on Blackboard)**
3. Hausman, Alan & Kahane, Howard & Tidman, Paul (2010). *Logic and Philosophy* (11th ed.). Boston, MA: Thomson Wadsworth/Cengage Learning.
4. **Hurley, Patrick (2018). *A Concise Introduction to Logic* (13th ed.). Australia ; Stamford, Ct.: Cengage Learning. (E-book on Blackboard)**
5. Schick, Theodore & Vaughn, Lewis (2014). *How to Think about Weird Things* (7th ed.). New York: McGraw-Hill Companies, Inc.
6. 貝剛毅，2014，思方導航（第四版），匯智出版

**Learning Activities and Workload**

- Lecture (2 hours each week)
- Reading for each topic
- Class Exercises (NOT part of course assessment)

**Assessment Scheme**

| Task | Description | Weight |
|---|---|---|
| Participation | In-Class Q&A (UReply) and discussion | 10% |
| Midterm Test | In-Class exam (Feb 27) | 40% |
| Final Test | In-Class exam (Apr 17) | 50% |

- Format of Midterm and Final Test: T/F questions, MC, and short questions.
- Students will get to familiarize themselves with the format of test questions through class exercises.
- 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 will 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

**Guidelines on the Use of Artificial Intelligence Tools in Teaching, Learning and Assessments**

This course adopts Approach 1 with respect to the use of AI tools in course assessments. Such approach 1 is specified by the Academic and Quality Section as follows: “Approach 1 – Prohibit all use of AI tools Students are not allowed to use any AI tools in any kind of learning activity or assessment that will be counted towards students’ final grade of the course, or used for evaluating students’ attainment of the desired learning outcomes. Students are expected to produce their own work independently without any collaboration or use of AI tools.”