



# Philosophy of Logics

[qjshao@fudan.edu.cn](mailto:qjshao@fudan.edu.cn)

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## An English Course

### Why

- n Logic as an subject
- n English reading text
- n Sino-Western communication

### What

- n Problems of Philosophy of Logics
- n Basic Logic terms in English
- n Brief History of Logic
- n Common Rules in Logic

### How ----Open

- n Further resources of study

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## Huge sum of English texts

- n As one of the most important subjects in majority of western Universities, there are huge sum of **English reading texts** about Logic.
- n We Chinese who studied/studying logic, in a sense, have done a lot of efforts on **translating or introducing** of western thoughts.
- n Useful lists of further study.
  - n Susan Hacck, **Philosophy of logics**
  - n Volker Halbach, **the logical manual**
  - n Nicholas Rescher: **Topics in philosophical logic**

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## What

- n My strategy is to identify what I consider to be the most important topic areas in the philosophy of logic from the standpoint of students as well as professional scholars.
- n I will show them in the sequence of topics according to my course of Introduction to logic

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## About this course

- n Course: **Philosophy of Logic**
- n Time: Thursday **18:30-20:10**
- n Classroom: **GHX401**
- n Content:
  - n To discuss those problems which came from the study of logic; to explore the metaphysical problems related with Logic, the status of Logic in epistemology, and the relationship between the formal and natural languages.

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## Why this course

- n Logic as a subject
  - n **important in western**
    - n Rational society: laws and rules
    - n Human culture based on reason
    - n Strong tradition in analytical studies
    - n Five kinds of Knowledge
  - n **weak in China**
    - n Perceptual land
    - n Systematic Logic imported from western
    - n Few Logic societies famous in the world
    - n subject to Philosophy department

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## Sino-western communication

- n China's success in economics in recent decades.
- n More interest came from western students.
- n English as an international language.
- n Logic as an artificial language
- n English Speaking and thinking

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## How to give the course

- n Mainly open to teacher and students
- n Teaching styles:
  - n Speech/talk
  - n Seminar
  - n Discussions –brain storms
  - n Free yet academic
- n My English speaking
- n adjust and co-operate

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## My English

- n I am not from a native English speaking country
- n MA in philosophy (major in Logic) in 1995
- n DR in Management in 2001
- n My former course in Chinese:
  - n Introduction to Logic, Philosophy of logic, the History of logic in China and abroad, Introduction to Wittgenstein's Tractatus Philosophics
- n How to find a golden-mean

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## Examinations

- n Have you ever attend my course?
- n Why you chose this course?
- n Normally I am a modest teacher.
- n My main explanation to the exam.

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## Resources of further study

- n A number of valuable resources are available for further study of philosophical logic. There are four general categories of resources that can be consulted for information about the history and current research developments in philosophy of logics.
  - n • Logic Handbooks
  - n • Logic Books Series
  - n • Journals
  - n • Internet
  - n • Organizations

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## Logic handbooks

- n Boyer, Robert S. (1988) *A Computational Logic Handbook*. Boston, MA: Academic Press.
- n Sherwood, John C. (1960) *Discourse of Reason: A Brief Handbook of Semantics and Logic*. New York: Harper & Row.
- n *Handbook of Fuzzy Computation*, ed. Enrique H. Ruspini, Piero P. Bonissone and Witold Pedrycz. Philadelphia, PA: Institute of Physics Publications, 1998.
- n *Handbook of Logic and Language*, ed. Johan van Benthem and Alice ter Meulen. Cambridge, MA: MIT Press, 1997.

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## If I am

- n ...wrong in pronunciation
- n ...Chinglish speaking
- n ...stop in lack of expression
  
- n Write it in Chinese on the blackboard
- n Chat it in Chinese within the inter-break of courses.
  
- n Kindly give me a hand
- n Put up frankly your suggestion via...

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## Topics in details

- n Brief history of Logic
- n Words and objects
- n Propositions and Knowledge
- n Logical rules and paradoxes
- n Reasoning and axiomatic methods
- n Problem of Induction
- n The concept of true, truth and theories of Truth
- n Monism or pluralism of Logic

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## 1. Logic handbooks

- n A number of valuable resources are available for further study of philosophy of logics. There are four general categories of resources that can be consulted for information about the history and current research developments in this topic.
- n Here are some recent relevant publications:

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## Logic handbooks

- n *Handbook of Logic in Artificial Intelligence and Logic Programming*, ed. Dov Gabbay, C. J. Hogger, and J. A. Robinson. Oxford: Clarendon Press, 1993–8.
- n Emmet, E. R. (1984) *Handbook of Logic*. Totowa, NJ: Rowman & Allanheld.
- n Cowan, Sam (1985) *Handbook of Mathematical Logic*. Englewood Cliffs, NJ: Prentice-Hall.
- n *Handbook of Mathematical Logic*, ed. Jon Barwise et al. Amsterdam: North-Holland, 1977.
- n *Handbook of Philosophical Logic*, ed. Dov Gabbay and F. Guenther. Dordrecht: Kluwer, 1983–9.

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## Logic handbooks

- n *Handbook of Tableau Methods*, ed. *Marcello D'Agostino, Dov Gabbay, Reiner Hühnle, and Joachim Posegga*. Dordrecht: Kluwer, 1999.
- n *Logic Designer's Handbook: Circuits and Systems*, ed. *E. A. Parr*. Oxford: Newnes, 1993.
- n *Non-Classical Logics and Their Applications to Fuzzy Subsets: A Handbook of the Mathematical Foundations of Fuzzy Set Theory*, ed. *Ulrich Hähle and Erich Peter Klement*. Dordrecht: Kluwer, 1999.
- n *Programmable Logic Handbook*, ed. *Geoff Bostock*. Oxford: Newnes, 1993.
- n *Programmable Logic Handbook: PLDs, CPLDs, and FPGAs*, ed. *Ashok K. Sharma*. New York: McGraw-Hill, 1998.

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## 2. Logic Books Series

- n *Addison-Wesley Series in Logic*. Reading: Addison-Wesley Publishing Co.
- n *Algebra, Logic and Applications*. Amsterdam: Gordon and Breach Science Publishers.
- n *Applied Logic Series*. Dordrecht: Kluwer Academic.
- n *Clarendon Library of Logic and Philosophy*. Oxford: Clarendon Press.

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## Logic Books Series

- n *De Gruyter Series in Logic and its Applications*. Berlin: Walter de Gruyter.
- n *History of Logic*. Napoli: Bibliopolis.
- n *International Series in Logic Programming*. Reading: Addison-Wesley.
- n *Lecture Notes in Logic*. New York: Springer-Verlag.
- n *Library of Philosophy and Logic*. Oxford: Basil Blackwell.

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## Logic Books Series

- n *Logic and Computation in Philosophy*. Oxford: Oxford University Press.
- n *Logic Programming*. Cambridge: The MIT Press.
- n *Oxford Logic Guides*. Oxford: The Clarendon Press.
- n *Perspectives in Mathematical Logic*. New York: Springer-Verlag.
- n *Progress in Computer Science and Applied Logic*. Boston: Birkhäuser.
- n *Studies in Logic and Computation*. Oxford: Clarendon Press.

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## Logic Books Series

- n *Studies in Logic and the Foundations of Mathematics*. Amsterdam: North-Holland Publishing.
- n *Studies in Logic, Language, and Information*. Stanford: CSLI Publications.
- n *SUNY Series in Logic and Language*. Albany: State University of New York Press.
- n *Trends in Logic*. Dordrecht: Kluwer Academic.

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## 3. Journals

- n **Numerous journals** are devoted specifically to topics in symbolic logic. Some of these feature articles that are highly technical contributions to **mathematical logic**, while others specialize in research papers concerning **historical and philosophical aspects of logic**. **Many philosophy journals** that are not designated logic journals also frequently include essays about logic or make use of logic in presenting philosophical arguments. The following are **the principal journals** in the field that can be considered as primary sources for contemporary work in mathematical and philosophical logic.

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## Journals

- n The most important journals in logic or in philosophy that often publish work in logic include:
- n *Analysis*;
- n *Annals of Pure and Applied Logic*;
- n *Archive for Mathematical Logic*;
- n *Bulletin of Symbolic Logic*;
- n *Bulletin of the Section of Logic*,
- n *Fundamenta Mathematicae*;
- n *Historia Mathematica*;
- n *History and Philosophy of Logic*;

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## Journals

- n *Informal Logic*;
- n *Israel Journal of Mathematics*;
- n *Journal of Applied Non-Classical Logics*;
- n *Journal of Formalized Mathematics*;
- n *Journal of Logic and Computation*;
- n *Journal of Logic*,
- n *Language and Information*; *J*
- n *ournal of Mathematical Logic*;
- n *Journal of Philosophical Logic*;
- n *Journal of Philosophy*;
- n *Journal of Symbolic Logic*;
- n *Logic Journal of the IGPL*;
- n *Logical Analysis and History of Philosophy*;

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## Journals

- n *Logique et Analyse*;
- n *Mathematical Logic Quarterly*;
- n *Mind*;
- n *Modern Logic*;
- n *Nordic Journal of Philosophical Logic*;
- n *Notre Dame Journal of Formal Logic*;
- n *Nous*;
- n *Philosophia Mathematica*;
- n *Studia Logica*;
- n *Synthese*;
- n *Zentralblatt MATH*.

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## 4. Internet

- n The internet is another increasingly **useful source of information** for following new developments in philosophy of logics. Some logicians post results or discussions of philosophical topics related to **symbolic logic on the web**. Publishers and journals also announce new publications of interest to logicians, including journal contents, which can be used to gather information about new findings. **Conferences in symbolic logic** are also frequently listed, with lists of speakers and presentation titles or abstracts. There are also **logic chat rooms**, and **special interest networks** in which logicians present problems and exchange ideas about logic.

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## Internet

- n The best general advice about **using the internet** is to be persistent in pursuing interesting leads, but also to be highly selective and to treat whatever is found there **with a grain of salt and a healthy skepticism**. There is **no refereeing of information on the web**, and people are free to post whatever ideas they like, **without editorial scrutiny**. Some of the most important and interesting websites for philosophical logic include:

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## Internet

- n <http://www.nd.edu/~ndjfl/index.html>
- n *Notre Dame Journal of Formal Logic*
- n <http://www.aslonline.org/>
- n Association for Symbolic Logic
- n <http://www.earlham.edu/~peters/philinks.htm>
- n Guide to Philosophy on the Internet
- n (Peter Suber, Philosophy Department, Earlham College)

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## Internet

- n <http://www-personal.monash.edu.au/~dey/phil/>
- n Philosophy in Cyberspace
- n <http://web.phil.ufl.edu/SEP/index.html>
- n Society for Exact Philosophy
- n <http://www.math.uu.se/logik/logic-server/>
- n Research groups in Logic and Theoretical Computer Science
- n <http://www.math.uu.se/logik/logic-server/collection.html>
- n List of Research Groups in Logic and Theoretical Computer Science Worldwide

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## Internet

- n <http://www.math.fu-berlin.de/~dvmlg/>
- n Deutsche Vereinigung für Mathematische Logik und für Grundlagen der Exakten Wissenschaften
- n <http://www.wkap.nl/jrnlsubject.htm/5+0+0+0>
- n Listing of Journal Homepages by Subject, including Logic
- n [http://www.logic.at/kgs/www\\_logiciens.html](http://www.logic.at/kgs/www_logiciens.html)
- n Resources in Computer Science, Logic, Mathematics and Philosophy
- n (Kurt Gödel Society)

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## Internet

- n <http://www.jneedle.demon.co.uk/vague/articles.htm>
- n Online Articles on Concept and Logic of Vagueness
- n <http://www.uni-bonn.de/logic/world.html>
- n Mathematical Logic around the world
- n (service provided by the Mathematical Logic Group, University of Bonn, and the Institute for Logic, University of Vienna)
- n <http://www.rbjones.com/rbjpub/logic/index.htm>
- n Factasia

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## Internet

- n <http://www2.galaxy.com/galaxy/..../Humanities/Philosophy/Logic.html>
- n Galaxy
- n <http://logic.stanford.edu:80/>
- n Logic Group at Stanford University
- n <http://www.sjsu.edu:80/depts/itl/>
- n Mission: Critical
- n (San Jose State University's Critical Thinking Web Page)

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## 5. Organizations

- n There are special **philosophical organizations** that promote the study of symbolic and philosophical logic. Many of them publish newsletters or maintain websites to which you can subscribe or to which a local library might offer access.
- n A few of the most important **philosophical societies** related to logic include:

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## Organizations

- n Center for Critical Thinking;
- n Center for Fuzzy Logic,
- n Robotics, and Intelligent Systems (Texas A&M University);
- n Centre de Logique et de Philosophie des Sciences;
- n COMPULOG Americas;
- n Deutsche Vereinigung für Mathematische Logik und für Grundlagen der Exakten Wissenschaften;
- n European Association for Computer Science Logic (University of Udine, Italy);
- n European Association for Logic, Language, and Information (Amsterdam);

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## Organizations

- n Kurt Gödel Society;
- n Laboratory for Applied Logic (Brigham Young University);
- n Logic Group at Stanford University;
- n Mathematical Logic Group (University of Bonn);
- n Mind Association;
- n Swiss Society for Logic and Philosophy of Sciences (Zurich);
- n Society for Exact Philosophy;
- n Society for Symbolic Logic.
- n There are also **regular sessions** and **special symposia** on topics in philosophical logic sponsored by the three annual meetings (Eastern, Central, and Pacific Divisions) of the **American Philosophical Association**

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## Organizations

- n Association for Automated Reasoning;
- n Association for Logic Programming;
- n Association for Symbolic Logic;
- n Associazione Italiana di Logica e sue Applicazioni (University of Genoa);
- n Austrian Ludwig Wittgenstein Society;
- n Belgian National Center of Research in Logic;
- n Berkeley Group in Logic and the Methodology of Science (University of California at Berkeley);
- n Bertrand Russell Society;
- n British Logic Colloquium;

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## Organizations

- n Fuzzy Logic Research (University of Missouri at Columbia);
- n Helsinki Logic Group;
- n Indiana University Logic Group;
- n Institut für mathematische Logik und Grundlagen der Mathematik (Freiburg);
- n Institut für mathematische Logik und Grundlagenforschung (Münster);
- n Institute for Logic, Language, and Computation (Amsterdam);
- n Interest Group in Pure and Applied Logics (IGPL) (Imperial College, London);
- n Italian Society of Logic and Philosophy of Science;

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Thanks

[qjshao@fudan.edu.cn](mailto:qjshao@fudan.edu.cn)

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