

# COURSE DETAIL

## FOUNDATIONS OF LOGIC

**Country**

China

**Host Institution**

Tsinghua University

**Program(s)**

Tsinghua University

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Philosophy

**UCEAP Course Number**

152

**UCEAP Course Suffix****UCEAP Official Title**

FOUNDATIONS OF LOGIC

**UCEAP Transcript Title**

FOUNDATION OF LOGIC

**UCEAP Quarter Units**

3.00

**UCEAP Semester Units**

2.00

## Course Description

The aim of this course is to familiarize the student with some of the cornerstones of modern logic: the completeness of first-order logic, Gödel's incompleteness theorems, and Church and Turing's results on undecidability. Proofs of these results are presented in some detail, including quick introductions to basic model theory, primitive recursive and recursive functions, Peano arithmetic, and the method of 'arithmetization' of metalogic, on which the incompleteness and undecidability results rely. The philosophical implications of these results, and the techniques used to prove them, are also discussed, and the intuitive ideas behind the technical constructions are emphasized.

### Language(s) of Instruction

English

### Host Institution Course Number

30690552

### Host Institution Course Title

FOUNDATIONS OF LOGIC

### Host Institution Course Details

### Host Institution Campus

### Host Institution Faculty

### Host Institution Degree

### Host Institution Department

### Course Last Reviewed

2024-2025

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