

# COURSE DETAIL

## MODAL LOGIC FOR STRATEGIC REASONING

**Country**

United Kingdom - England

**Host Institution**

Imperial College London

**Program(s)**

Imperial College London

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Computer Science

**UCEAP Course Number**

178

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

MODAL LOGIC FOR STRATEGIC REASONING

**UCEAP Transcript Title**

MODAL LOGIC/REASON

**UCEAP Quarter Units**

5.00

**UCEAP Semester Units**

3.30

## Course Description

This course develops intellectual and practical skills in the use of modal logics for knowledge representation and automated reasoning in Artificial Intelligence. The first part of the course focuses on general modal logic: modal and temporal operators, Kripke frames and models, and the basics of the model theory of modal logics, including the notions of satisfaction and validity, their computational complexity, as well as invariance under bisimulation. The second part of the module introduces the language of Alternating-time Temporal Logic (ATL), an extension of the temporal logics CTL and LTL, which allows for the expression of game-theoretical notions such as the existence of a winning strategy for a group of agents.

### Language(s) of Instruction

English

### Host Institution Course Number

COMP70031

### Host Institution Course Title

MODAL LOGIC FOR STRATEGIC REASONING

### Host Institution Campus

### Host Institution Faculty

### Host Institution Degree

### Host Institution Department

Computing

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