COURSE DETAIL

LOGIC PROGRAMMING
Country Japan
Host Institution International Christian University
Program(s) International Christian University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Computer Science
UCEAP Course Number 131
UCEAP Course Suffix
UCEAP Official Title LOGIC PROGRAMMING
UCEAP Transcript Title LOGIC PROGRAMMING
UCEAP Quarter Units 2.50
UCEAP Semester Units 1.70

Course Description

This course provides students an opportunity to practice symbolic logic based on mathematical fundamentals from Boolean functions and logic circuit design including assignments in Prolog language.

Computers built from logical circuitry are a recent invention. Logic, however, has ancient roots in the attempt to distinguish sound modes of reasoning from faulty ones. It thus deals directly with language and the mind. Mathematical logic asks what an acceptable mathematical proof is, how we can justify reasoning with the infinite, etc. The formalization of mathematics through logic has clarified these questions; given mathematics a firm foundation, and, not by accident, produced a theory of computable functions, even before there were computers.

Many famous results in mathematical logic, however, are ‘negative’: demarcations of the limits of formal methods, examples of non-computability, unprovability, etc. Unsurprisingly, these negative and abstract achievements do not easily translate into practical applications. Nevertheless, as logic structures both human reasoning and electronic computation, it can be turned into a rather nifty programming language (PROLOG) and there is an active research community applying it to cognitive science, natural languages, data mining, machine learning, artificial intelligence, fun, and more.

The goal of the course is to provide a firm grasp of some key concepts of highly abstract logic and permit them to cross the surprisingly short bridge from this idyllic realm to practical application in [room N307] reality. The logic lectures are intended to provide a theoretical vantage point. The Prolog practice enables students to represent knowledge in a program, read and understand Prolog programs, and use Prolog to solve problems.

Language(s) of Instruction
English

Host Institution Course Number
ISC321E

Host Institution Course Title
LOGIC PROGRAMMING

Host Institution Course Details
https://campus.icu.ac.jp/public/ehandbook/PreviewSyllabus.aspx?regno=21222&year...

Host Institution Campus
International Christian University

Host Institution Faculty

Host Institution Degree

Host Institution Department
Information Science

Course Last Reviewed
2023-2024

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