COURSE DETAIL

DISCRETE STRUCTURES

Country
Singapore

Host Institution
National University of Singapore

Program(s)
National University of Singapore

UCEAP Course Level
Lower Division

UCEAP Subject Area(s)
Computer Science

UCEAP Course Number
11

UCEAP Course Suffix

UCEAP Official Title
DISCRETE STRUCTURES

UCEAP Transcript Title
DISCRETE STRUCTURES

UCEAP Quarter Units
6.00

UCEAP Semester Units
4.00

Course Description

This course introduces mathematical tools required in the study of computer science. Topics include: Logic and proof techniques: propositions, conditionals, quantifications; relations and functions: equivalence relations and partitions; partially ordered sets; Well-Ordering Principle; function equality; Boolean, identity, inverse functions; Bijection; mathematical formulation of data models (linear model, trees, graphs); counting and combinatoric: Pigeonhole Principle, Inclusion-Exclusion Principle; number of relations on a set, number of injections from one finite set to another, diagonalisation proof: An infinite countable set has an uncountable power set; Algorithmic proof: An infinite set has a countably infinite subset; subsets of countable sets are countable.

Language(s) of Instruction
English

Host Institution Course Number
CS1231

Host Institution Course Title
DISCRETE STRUCTURES

Host Institution Course Details

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
Computer Science

Course Last Reviewed

2023-2024

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