COURSE DETAIL

BASICS OF QUANTUM INFORMATION AND QUANTUM COMPUTING
Country Korea, South
Host Institution Korea Advanced Institute of Science and Technology (KAIST)
Program(s) Korea Advanced Institute of Science and Technology, KAIST
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Electrical Engineering
UCEAP Course Number 145
UCEAP Course Suffix
UCEAP Official Title BASICS OF QUANTUM INFORMATION AND QUANTUM COMPUTING
UCEAP Transcript Title BASICS OF QUANTUM
UCEAP Quarter Units 4.50
UCEAP Semester Units 3.00

Course Description

The course begins with quantum logic and examines how quantum advantages can be achieved in communication and computational tasks. Examples of quantum algorithms and quantum protocols are provided. Known approaches to implement quantum information processing are explained. Topics include Quantum logic state, dynamics, and measurements and observations, Quantum bit, fundamental theorems, Quantum logic gates and information processing, Quantum protocols, Quantum algorithm 1: the Deutsch algorithm, Entanglement, Quantum protocol 2: Pseudo-telepathy, Quantum computing concepts, Nonlocality.

Language(s) of Instruction
English

Host Institution Course Number
EE 40080

Host Institution Course Title
BASICS OF QUANTUM INFORMATION AND QUANTUM COMPUTING

Host Institution Course Details
https://erp.kaist.ac.kr/

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Course Last Reviewed
2025-2026

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