

QST 201

Quantum Computation

Contact information

Professor: TBA

Lecture: TBA

Contact: TBA

Schedule

Attendance in lecture is required. Weekly homework will be assigned and due the following week before class.

Grading: 40% homework
10% participation
20% midterm exam
30% final exam

Introduction: The class will briefly review linear algebra associated quantum mechanics and cover quantum circuits, quantum Fourier transform, quantum algorithms. It will also review physical implementations of quantum computers.

Required Text:

Quantum Computation and Quantum Information by Nielsen & Chuang

Weekly Calendar

Week 1	Introduction to QC and review of quantum mechanics
Week 2	Review of linear algebra, quantum mechanics, and qubits
Week 3	Quantum Circuits 1
Week 4	Quantum Circuits 2
Week 5	Quantum Fourier Transform and its applications
Week 6	Quantum Fourier Transform and its applications
Week 7	Quantum Algorithms 1
Week 8	Quantum Algorithms 2
Week 9	Physical Implementations 1 and Jaynes-Cummings Hamiltonian Review
Week 10	Physical Implementations 2