

# **Quantum Information and Computation** **(CHM 69600) Spring 2012**

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**Lectures:** TR 3:00-4:15, BRWN 3102

## **Course Description**

*The course will cover problems in seven broad sections and should be accessible to people with a variety of backgrounds: for example, bioinformatics, chemistry, computer science, electrical engineering, physics and other branches of science and engineering.*

- (1) Fundamental Concepts in Quantum Mechanics
- (2) Quantum Information
- (3) Quantum Entanglement
- (4) Quantum Algorithms
- (5) Quantum Simulation
- (6) Physical Implementations of Quantum Computation
- (7) Adiabatic Quantum Computing

## **Textbook:**

- Michael A. Nielsen and Isaac L. Chuang, *Quantum Computation and Quantum Information*, Cambridge University Press, 2000

**Grading:** Problems sets 50% (Total 5) and a final project 50%