

PHYS 3021 *Quantum Mechanics I* 2017-18 Term 1

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You are welcome to stop by my office for questions any time or make appointment via emails

Lectures/Tutorials: See attached Course Time Table

Exercise Classes: See attached Course Time Table

*Exercise Classes are an integral part of the course. You must arrange your schedule to **attend one exercise class session per week**. TA will work out Sample Questions (examples) resembling those in an upcoming Problem Set. You will learn more effectively if you try out the sample questions before attending exercise classes.*

Assessments:

Problem Sets*: 20% Mid-Term Exam: 30% Final Exam: 50%

To be considered for a passing grade, a minimum of 20% in written exams (mid-term plus final) is needed. It is a necessary, but not sufficient, condition

***On Problem Sets:**

- Problem Sets are designed to help you think through the course contents, understand the concepts and methods. You **MUST** try to do them. ***You won't learn if you don't practice!***

- **Independent work expected**, although you are encourage to discuss with classmates
- Academic Honesty – CUHK has a **zero tolerance policy against plagiarism** (don't copy homework). See <http://www.cuhk.edu.hk/policy/academichonesty/> for University policy and advices.
- **T+2 Policy:** Assignments are to be submitted on or before the due date **T**. Students may submit an assignment no later than 2 days after the due date (thus T+2), but there will be a 20% discount on the score of that assignment.

Teaching Assistants:

3 TA's, each offering 2 consultation hours (CH) per week. You can seek help from TA every day in a week. They also welcome questions even beyond CH's. **See Course Time Table for details.**

How to learn well?

- Attend Classes & Exercise Classes, do problem sets
- Read notes prior to coming to classes
- Read books (see reserved books in UL and book list)
- Most important: Don't let yourself fall behind progress. Come to me or TAs to clean up questions every week. We are all here to help you learn!

PHYS3021 Quantum Mechanics I

Course Learning Outcomes

1.	Students will have a general understanding of how quantum theory was developed, and in particular appreciate how a new theory is developed when an existing theory fails to explain experimental observations.
2.	Students will learn the basic concepts of wave-particle duality, uncertainty principle, and interpretation of wave functions in quantum mechanics.
3.	Students will learn the Schrödinger equation, and how to solve it for various physical problems.
4.	Students will learn basic formulation of quantum mechanics, including the concept of state vectors and axioms of quantum mechanics.
5.	Students will learn how to approach and tackle a given problem and apply the mathematical and analytical skills in solving the problem.

The course also lays the foundation of QM for developing approximations and studying Atoms, Molecules, and Nuclei in PHYS3022 Applied Quantum Mechanics.