

Syllabus - Graduate Quantum Mechanics II

Class Meetings: 5:45 p.m. - 7:00 p.m. -- Tuesdays and Thursdays

Oceanography & Physics (OCNPS) Building Room 303

Recitation Sessions by mutual agreement

Instructor: Dr. Sebastian E. Kuhn
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Office hours: Tuesdays 2:00 – 3:00 p.m. in the Physics Learning Center (lobby 2nd floor PSB II) and by appointment (just ask me after class, send email or call)

Textbook: R. Shankar: "Principles of Quantum Mechanics", 2nd Ed. Springer 1994.

Optional Textbooks: G. Arfken: Mathematical Methods for Physicists, Academic Press, Inc.

A. Messiah: "Quantum Mechanics" (2-volume edition bound as 1 book), Dover Publication 1999. A comprehensive collection of material, cheap on Amazon etc.

D. Griffiths: "Introduction to Quantum Mechanics", 2nd edition (Pearson 2005) and S. Gasiorowicz: "Quantum Physics" 3rd edition (Wiley 2003). Two lower-level books with more basic explanations and applications to help you "make sense of it all".

Grading Scheme: Homework (30%), Midterm (15%), Participation (15%), Final (40%)

Grading Scale: A: 90-100% A-: 85-90% B+: 80-85% B: 75-80%
B-: 70-75% Below 70%: C (=failing)

INTRODUCTION

This is the second semester of the 2-semester course on Quantum Mechanics. This semester will cover the topics left out in the first semester: Multi-particle states (including statistics, entanglement and Bosons/Fermions), classical limit and path integral formulation; variational methods, time-independent and time-dependent perturbation theory, and scattering.

We will mostly follow the content of the book by Shankar, but add some topics from other sources. A preliminary schedule is posted separately.

Policy on Cooperation

I consider it advantageous if students cooperate with each other on homework and studying. In fact, I encourage students very strongly to meet with each other for regular discussions and to tackle assignments together.

However, I require that each student turn in their own (hand- or computer-written) version of each homework and assignment. You must be able to demonstrate that you understand and can reproduce any solution you hand in. Also, **NO** cooperation is allowed on the Midterm and Final (in-class) Exams – everybody has to do **ALL** of the work her/himself. I consider it unethical and a violation of the honor code to copy the solution of a homework problem or an Exam verbatim from another student's solution or from a book. All material used (other than informal discussions) must be properly cited.

In this context, I want to remind everyone of the **University policy**: Any official sanction for cheating, including the assignment of a grade of F for a quiz or for a course as a penalty for cheating, will appear on the student's permanent academic transcript.