Quantum Mechanics I

PH5400

Instructor: M. Dingfelder
Office: E209
Howell Science Complex
Time: Class: Tuesday and Thursday, 8:00 - 9:15
Problems: Wednesday 16:00 - 17:00
E213 Howell Science Complex
Fall Term 2005

Textbook


Supplemental Literature

There is a big variety of textbooks on Quantum Mechanics. Most of them might be useful for additional information. However, due to slightly different notations and formalisms, some books might look confusing to unexperienced readers. The class will mainly follow Shankar’s book and use his notations. The following list contains some standard textbooks on Quantum Mechanics as well as some selected, new issues.

- Albert Messiah, Quantum Mechanics, Dover Publishing.
- and others as necessary and appropriate!
Contents and Schedule

• **SCHEDULE IS APPROXIMATE!**
• Dates for material to be covered can change on a day-by-day basis to conform to student interest and class dynamics.
• In total 28 classes each 75 minutes.

Tentative Schedule and Contents

Aug 25, 30; Sept 1, 6:  1. Mathematical introduction.
Sept 8, 13, 15:      4. The postulates - a general discussion.
Sept 22:              Test I (Chapter 1-4)
Sept 20, 27, 29:     5. Simple problems in one dimension,
Oct 27:              Test II (Chapter 5-10)
Nov 1, 2:            11. Symmetries and their consequences.
Nov 3, 8:            12. Rotational invariance and angular momentum.
Dec 1, 6:            15. Addition of angular momenta.

No classes will be held on:

Oct 18:   Fall break
Nov 15,17,22: Microdosimetry
Nov 24:   Thanksgiving break

The following Wednesdays will be used for teaching as substitutes of the missed *Microdosimetry* classes.

Sept 7:
Nov 2,30:
**Course Scoring**
Scoring will be divided into three categories:

1. **Homework.** Homework will count 25% of the course grade.
   Each week a sheet with problems will be issued and has to be returned a week later (except in weeks with interim tests). Tentatively there will be 10 sheets with an ideal score of 10 points each.

2. **Interim tests.** There will be two tests during the semester. Each test will be weighted to count 20% of the course grade, thus the two tests will contribute a total of 40% of the course grade.

3. **Final Exam.** The final exam will count 35% of the course grade.

Each test, the final exam and all homework sheets together will be designed to yield 100 points for a perfect score.

**News and supplemental information**
News and additional course information (like the homework sheets and sometimes solutions) will be posted on the web page core.ecu.edu/phys/dingfelderm. Please check the web page from time to time.

**Office Hours**
I encourage everybody to stop by my office whenever you have questions or problems. Don’t hesitate to do so also outside official office hours.