PHYS 812 – Spring 2016
Quantum Mechanics III
Lecture course outline

Lecture hours: Tue. & Thur.: 12:30 AM – 1:45 PM
Lecture room: 316 Gore
Web page: http://www.physics.udel.edu/~szalewic/teach/812/
Instructor: Krzysztof Szalewicz, 121 SHL, phone: 831 6579, szalewic@udel.edu
Office hours: one hour after class or by appointment

(Ch. 17-21 plus extensions)

Prerequisites: PHYS 811 or equivalent
Exams and quizzes: Exam 1 (75 minutes) Mar. 24
Exam 2 (75 minutes) Apr. 28
Final exam (2 hours) after May 18

Homework: A few problems each week. Normally assigned on Thursday, collected the next Thursday

Grading: Homework: 10%
Exam 1: 27%
Exam 2: 27%
Final exam: 36%

Grades will be assigned as follows:
A – 0.80 and above, F – below 0.40, each 0.04 is one grade increment.

Lecture Contents

• Time-independent perturbation theory (partly covered in 811)
• Time-dependent perturbation theory
• Scattering theory
• Dirac’s equation
• Path Integrals
• Many-body theory
All problems will be graded on the scale 0 to 10.

The exams will be from the material covered in this course. Three types of problems can be expected. (a) Problems or questions related directly to the material covered in class (note that derivations and proofs are an essential part of this course and will be required on exams). (b) Problems very similar to actual homework problems (therefore it is critical that you spend time to understand my solutions if you have not solved all homework problems perfectly by yourself). (c) Problems related to the material covered, but not necessarily similar to any homework problem.

Exams 1 & 2 will deal with the course material covered in the weeks preceding a given exam (exam 2 will not repeat subjects contained in exam 1). The final exam will embrace the whole course with emphasis on subjects not covered by exams 1 & 2. All exams will be closed book. Each exam will contribute to your final grade as the ratio of the number of points earned to the maximum number of points, weighted as listed above.

Detailed solutions to homework and exam problems will be put on web. Everybody is strongly advised to compare these solutions with their work.

Homework will be collected, but not graded. You will get 1 point for each solution showing sufficient effort, even if your solution is wrong (this will not extend to exams). You are encouraged to discuss homework problems, but the submitted solutions have to be worked out individually. Copying from any source is not allowed.

I will communicate with you by email. Let me know if you are not getting my emails.