Quantum Mechanics II – Fall 2014

PHYS 917 **TR 11:00-12:15** **JH 149**

Instructor: Prof. Kirill Belashchenko
Office: 310D Jorgensen. Phone: 472-2396. E-mail: belashchenko@unl.edu
Office hours: TR 12:30-1:30 or by appointment. You can also try to stop by my office if my door is open or email me with your questions.

Prerequisites: PHYS 911, 916 (grade C or better) or permission.

Textbook: R. Shankar, Principles of Quantum Mechanics, second edition.

Course description: This is the second part of the quantum mechanics sequence, which may include the following topics: the hydrogen atom, systems of identical particles, spin, addition of angular momenta, variational method, stationary and time-dependent perturbation theory, scattering, path integral.

Homework: There will be approximately 10 assignments during the semester. Most homework problems are worth 10 points, but some more difficult problems may be worth more. The solutions should clearly explain all the important steps. You may discuss ideas and approaches with other students *after* you have spent some time thinking about these problems. However, you are required to complete all the technical steps yourself. You are not allowed to copy the work of others or use problem solutions obtained from any source. If you have benefited from discussions with others, you must acknowledge these people in your homework. (Example: "I learned this idea from John Smith.")

Homework should be submitted in class or placed in my mailbox (request a time stamp from a staff member in the latter case). Please do not slide it under my office door. Late homework submissions may be accepted, but they will lose a percentage of points (typically 10-25% for reasonably short delays). Homework is graded by a teaching assistant. If you believe your grade to be incorrect, you may appeal it to the instructor. *It is your responsibility to understand your mistakes*. If in doubt, always ask for a clarification.

In-class quick tests will occasionally offer short problems or conceptual questions based on recent coursework for about 20 minutes at the end of a class. They may or may not be announced beforehand.

There will be **one midterm exam** in the middle and a **comprehensive two-hour final exam** at the end of the semester. The midterm exam will take place during a regular class slot. Unless explicitly indicated otherwise, it is not allowed to use any books, notes, or other materials on the exams.

Missed tests: You must notify the instructor if you expect to miss a class for a legitimate reason (illness, family emergency, or job-related absence such as attending a conference; be prepared to provide supporting documentation). A minor test missed for such reasons may be dropped from your grade. If you miss the midterm or the final exam for *any* reason, you will normally not be able to obtain a passing grade for the course.

The participation grade will reflect your contribution to our everyday work in the classroom. Everyone is expected to take an active role in discussions. This grade includes such factors as answering questions, asking *relevant* questions, showing preparation and understanding of the assigned material, critical thinking about physics, and other manifestations of active learning. As a general rule, you need to be regularly visible as a thoughtful discussion participant in order to get full credit for participation.

Grading: Your total score will be compounded as follows (subject to minor change depending on the actual schedule of assignments):

Homework	20%
In-class quick tests	20%
Midterm exam	20%

Final exam	35%
Participation	5%

The scores for all assignments will be posted on Blackboard. Total scores for all students may be scaled at instructor's discretion depending on the difficulty of the tests. Based on the total score, the final grades will be determined as follows: A+ [92-100], A [88-92], A- [85-88], B+ [82-85], B [78-82], B- [74-78], C+ [70-74], C [65-70], C- [60-65], D+ [55-60], D [50-55].

Instructor replacements: The lectures may occasionally be given by a replacement instructor, who has full authority to assign homework and other assignments.

Changes: This syllabus represents a reasonably accurate outline of the course. However, we may deviate from it depending on our progress.

Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.