

Physics 322

Quantum Mechanics II Spring Semester 2018

Room: Seaver Hall 109
Time: **TR 9:40 - 11:10 am (lecture time 9:40-10:55am)**

Instructor: Dr. Gabriele Varieschi
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Office hours: TR 2:00 pm - 3:00 pm; and by appointment.

Required Text: **David Griffiths – Introduction to Quantum Mechanics – Pearson Prentice Hall or Cambridge U. Press – Second Edition**

Objectives and Topics: We will continue our analysis of modern Quantum Mechanics covering several chapters of the book in the following order:
Ch.3: Formalism of quantum mechanics, Hilbert spaces, operators, Dirac notation.
Ch. 4: Three-dimensional quantum mechanics. Hydrogen atom, angular momentum and spin.
Ch. 5: Identical particles and atoms with many electrons.
Ch.12: Quantum Paradoxes.

Prerequisite: PHYS 321.

Learning Outcomes: Understand more advanced topics in quantum physics. Conceptually understand the mathematical framework of quantum mechanics and the three-dimensional solutions of the Schrödinger's equation. Be able to solve problems of increasing complexity, dealing with the applications of quantum mechanics. Understand the current status of the field and future challenges.

Tests: There will be two tests during the semester. They will all count toward your final grade, so please try not to miss any of them.

Test Dates: TBA

Final Exam: The final exam is cumulative, equivalent to 2 tests, and will probably be a take-home exam, during the final week of the semester.

Homework: Homework assignments will be given, typically one or two for each chapter of the book. Problem sets will not be graded, but students will present their solutions in class for credit.

<i>Grading:</i>	Homework Presentation	15 %
	Test 1	25 %
	Test 2	25 %
	Final Exam	35 %

Test Grading (approx.): <50%=F; 50-55%=D; 55-70%=C range; 70-85=B range; >85=A range.

Academic Honesty:

Academic dishonesty will be treated as an extremely serious matter, with serious consequences that can range from receiving no credit for assignments/tests to expulsion. It is never permissible to turn in any work that has been copied from another student or copied from a source (including Internet) without properly acknowledging the source. It is your responsibility to make sure that your work meets the standard of academic honesty set forth in the “LMU Honor Code and Process” which appears in the *LMU Bulletin* (see <http://bulletin.lmu.edu/>)

Americans with Disabilities Act:

Students with special needs as addressed by the Americans with Disabilities Act who need reasonable modifications, special assistance, or accommodations in this course should promptly direct their request to the Disability Support Services Office. Any student who currently has a documented disability (physical, learning, or psychological) needing academic accommodations should contact the Disability Services Office (Daum Hall Room 224, 310-338-4535) as early in the semester as possible. All discussions will remain confidential. Please visit <http://academics.lmu.edu/dss/> for additional information.

Syllabus changes:

If necessary, this syllabus and its contents are subject to revision; students are responsible for any changes or modifications announced in class.

Have a nice semester. Good luck!