

PHYSICS 461 - Modern Physics - Spring 2016

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 # Course Hours: M 2:00-3:15, F 1:00-2:15 -- Office Hours: M- 1:00-2:00, F 2:15-3:00
 # nicadd.niu.edu/~hedin/461/461.html (has example tests)

textbook: *Quantum Physics of Atoms, Molecules, Solids, Nuclei, and Particles * by Robert Eisberg and Robert Resnick
 # additional textbook: *Modern Physics * Randy Harris; *Introduction to High Energy Physics * Donald Perkins.

Chapter	*Problems (from E+R)*	*Date Due *
11: Quantum Statistics	4,29,30	2/12
12: Molecules	2,9,10,20	2/26
13: Solids - Conductors and Semiconductors	9,14,24,26	2/26
14: Superconductors and Magnetism - skip	1,15,17	3/15
15: Nuclear Models	14,16,17,20,23abc	4/1
16: Nuclear Decays and Reactions	8,10,14,28	4/1
17: Intro. to Elementary Particles	13,14,16,18	4/29
18: More Elementary Particles	11,12,15,17	4/29

Test 1: Chapters 11,12,13 -- March 4
 # Test 2: Chapters 15,16 -- April 8
 # Test 3: Chapters 17,18 -- May 6 (reading day)

All tests are one hour long, closed book, and worth 100 points. You may have a normal size piece of paper with notes on 1 side. The problems are worth 100 points total. They are due the days noted above. If late, only half-credit will be given. A solution set to the problems will be available in my office. Each student will give two 30-40 minute "lectures". Each will be worth 50 points. No minus grades will be given and plus grades will be decided on at the end of the class. The grading scale will be no higher than

A = 400 points
 # B = 340 points
 # C = 280 points
 # D = 200 points

The learning goals of this course are the understanding of the underlying physics concepts which produce the observed properties of molecules, solids, nuclei, and subatomic particles.

The learning outcome of this course is the student being able to explain the observed properties of molecules, solids, nuclei, and subatomic particles using the underlying physics concepts.

Northern Illinois University is committed to providing an accessible educational environment in collaboration with the Disability Resource Center (DRC). Any student requiring an academic accommodation due to a disability should let his or her faculty member know as soon as possible. Students who need academic accommodations based on the impact of a disability will be encouraged to contact the DRC if they have not done so already. The DRC is located on the 4th floor of the Health Services Building, and can be reached at 815-753-1303 or drc@niu.edu.
 Non-Discriminatory Language: Nearly all professional organizations promote use of non-discriminatory language through a formal set of guidelines. Additionally the business world insists upon non-discriminatory language in its internal and external communications. Therefore, this class will try to make students aware of how the written and spoken word acts upon the audience and will promote non-discriminatory practices.
 Cell Phones/Computers in Classroom: Cell phones are not to be used in class unless requested by the instructor

for a class activity. This includes reading or sending text messages or utilizing the Internet. Always ask for permission to use a cell phone for any purpose during a class. Unauthorized use of a cell phone in class will be considered an absence. If you continue to use a cell phone in class you will be asked to leave. If a computer is being used in the classroom it must be used only to take notes or as directed by the instructor. Students should not be accessing the Internet during class time, unless requested by the instructor for a class activity.

Class Visitation Policy: Due to liability concerns, only NIU students are allowed to attend at classes at NIU. Guests, including family members and NIU students not registered for the course, will not be permitted to attend class except with prior arrangement with the instructor. Because university classes are not developmentally appropriate situations for young children, children will not be allowed in class except in highly unusual circumstances and with the prior approval of the instructor.

Academic Misconduct: For a detailed description of the university's definition of academic misconduct, and the process by which it is adjudicated, please refer to the Student Code of Conduct. Sanctions (consequences) for committing academic misconduct include but are not limited to, failure of the assignment, failure of the course, and suspension or expulsion from Northern Illinois University. Cheating and plagiarism of one's own or another's work will not be tolerated.

Academic integrity and civility in the classroom are expected of every member of the NIU community. Please review the Undergraduate Catalog for more information on this topic.

Syllabus Clause and Contract: This syllabus may be revised and adapted throughout the semester to better serve the needs of the class. The instructor may assign additional reading and/or assignments as needed. Additionally, the decision to remain in this class upon receipt of the syllabus serves as students' acceptance of the syllabus as a binding contract, meaning they agree with the terms set forth and the expectations of them as members of the class.

Religious Observances: Northern Illinois University, as a public institution of higher education in the State of Illinois, does not observe religious holidays. It is the university's policy, however, to reasonably accommodate the religious observances of individual students in regards to class attendance, scheduling examinations, and work requirements. Such policies shall be made known to faculty and students. Religious observance includes all aspects of religious observance and practice as well as belief. Absence from classes or examinations for religious observance does not relieve students from responsibility for any part of the course work required during the period of absence. To request accommodation, students who expect to miss classes, examinations, or other assignments as a consequence of their religious observance shall provide instructors with reasonable notice of the date or dates they will be absent.