

**LAGUARDIA COMMUNITY COLLEGE
CITY UNIVERSITY OF NEW YORK
NATURAL AND APPLIED SCIENCES DEPARTMENT**

**SCP201.644 (A and B) – FUNDAMENTALS OF PHYSICS I
FALL I, 2015**

**LECTURES: TUESDAY, 5:45 – 9:05 pm Room: E145
 THURSDAY, 5:45 – 6:45 pm Room: E145**

LABORATORY: MONDAY, 6:55 – 9:05 pm Room: E348

INSTRUCTOR: Professor J. Nieman niemanja@lagcc.cuny.edu (718) 482-5754

**TEXT: Douglas C. Giancoli, Physics (Addison-Wesley) 7th Edition, 2013.
ISBN: 9780321762429**

Supplementary Material: The textbook has ancillary materials that are not required. Nevertheless, if the student is interested in these, such as the Study Guide with Selected Solutions, he/she can visit the book's Companion Website at <http://www.pearsonschool.com/index.cfm?locator=PS11Mk&PMDbProgramId=116681&elementType=programComponents&APPricingAction=step1> for more information on these materials, as well as for other useful information.

Laboratory Handouts will be provided for all the experiments.

GENERAL DESCRIPTION: This is the first course of a 2-term non-calculus based Physics sequence. Among the subjects covered are vectors, kinematics, dynamics, momentum, energy and circular motion. Other subjects covered are equilibrium, thermodynamics, rotational motion and waves, as time permits. The aim of the course, together with SCP202, is to provide the student with a firm grounding of the basic laws and principles that govern the behavior of matter.

GRADING SYSTEM:

3 Lecture Exams (200 points each)	600 points
Quizzes (2 to 4)	100 points
Laboratory Experiments	150 points
Paper	150 points

TOTAL	1000 points

Exams will not be comprehensive, although certain principles and techniques are applied throughout the semester. The quizzes will typically cover one or two chapters. Further details will be provided at the first lecture meeting. Similarly, the required research paper – consisting of a minimum of 2000 words or so – will be discussed at the first meeting. The date for submission of this mandatory assignment is Tuesday, 12/1/15. Please note that in order for a student to pass the course, he/she must submit an acceptable research paper.

BEHAVIOR AND ACADEMIC INTEGRITY

Appropriate student behavior is expected at all times. Details of the expected conduct can be found in the Student Handbook, which is distributed by the Office of Campus Life (M115).

Please note that dishonesty will not be tolerated. Please consult the College's Academic Integrity Policy at <http://library.laguardia.edu/files/pdf/academicintegritypolicy.pdf>

OFFICE HOURS: These will be provided.

DAYS AND TIMES: _____

Students are encouraged to come to the office hours. If the times are not convenient, students should consult with the instructor to set up individual appointments.

STRUCTURE:

TEXTBOOK READING ASSIGNMENTS

They should be completed, whenever possible, before the material is covered in class. These, together with the lecture notes, are the foundation of the course.

HOMEWORK ASSIGNMENTS

Homework assignments will be given in class. To master the material, problem-solving is essential. Much lecture time will be devoted to recitation – where problems will be solved and discussed in detail. Students are encouraged to participate in class discussions and, when appropriate, volunteer to solve homework problems for the class. Note that class participation can favorably influence your final grade.

ATTENDANCE

Attendance at lectures is required and, as mentioned, class-work counts in your final grade. In addition, it is very difficult to obtain all the necessary knowledge solely from the textbook.

Attendance at the EXAMS and QUIZZES, at the assigned times, is mandatory. Absences must be cleared with the instructor, preferably prior to the tests. Make-up examinations, although very rare, may be given at the discretion of the instructor. However, please note that completing a required task – exam, quiz or paper, for example - at a time other than the assigned time, may negatively affect a student's final grade.

Attendance at the LABORATORY is mandatory. No make-ups are possible and students should make every effort not to miss any experiments. Lateness or absences in the laboratory will adversely affect a student's grade.

INCOMPLETES

The grade of Incomplete (IN) will be given to students who are otherwise passing the course and, because of a bona fide reason in the estimation of the instructor, are missing one item, such as a test, at the end of the semester. Please note that an IN grade is merely an extension of time to complete an item that has not been completed; it is not a way of repeating the course.

SCHEDULE OF LECTURES AND EXAMS

DATE	Subject	Reading Assignment
9/8, 9/10	Introduction to the course. Mathematical Review, Measurements and Unit Conversion	Preface, Notes to Students, App. A & Ch. 1
9/17, 9/24, 9/29	Motion – Frame of Reference, Kinematics in One Dimension, Free Fall	Ch. 2
10/1, 10/6	Vectors – Vector Algebra, Resolving a Vector. Relative Velocity, Motion in the Vertical Plane	Ch. 3
10/8, 10/13, 10/15	Dynamics – Newton’s Laws of Motion, Friction, Statics (selected topics)	Ch. 4 Ch. 9
10/20, 10/22	Work and Energy – Kinetic and Potential Energy Conservative and Nonconservative Systems, Conservation of Energy, Power	Ch. 6
10/27	EXAM #1	Chs. 1, 2, 3, 4, 9 and App. A
10/29, 11/3	Momentum – Linear Momentum, Impulse, Conservation of Momentum, Collisions	Ch. 7
11/5, 11/10	Circular Motion. Gravitation – Centripetal Force and Gravity	Ch. 5
11/12,	Temperature and Kinetic Energy – Temperature and Scales, Macroscopic Treatment of Ideal Gases	Ch. 13
11/ 17	EXAM #2	Chs. 5, 6 and 7

DATE	Subject	Reading Assignment
11/19	Kinetic Molecular Theory of Gases	Ch. 13 (continues)
11/24 12/1	Heat – Mechanical Equivalent of heat, Calorimetry and Heat Transfer	Ch. 14
12/3 12/8	The Laws of Thermodynamics – Heat and Internal Energy, Entropy	Ch. 15
12/9	EXAM #3	Chs. 13, 14 and 15