Kingsborough Community College
The City University of New York
Department of Physical Sciences
PHY1300 - Advanced General Physics I
Syllabus

PHY1300 – ADVANCED GENERAL PHYSICS I (4 crs. 6 hrs.)
First term of calculus two-semester lecture and laboratory course in classical and modern physics. Includes the study of mechanics, heat, hydrostatics and hydrodynamics, harmonic motion and waves. Physical principles demonstrated and "hands on" laboratory experience. Recommended for science, engineering, pre-medical and allied health students who desire a more comprehensive treatment than given in PHY1100. Pre/Co-requisite: MAT1500 Required Core: Life and Physical Sciences Flexible Core: Scientific World (Group E)

Section: SECTION NUMBER
Time: LECTURE AND LABORATORY SCHEDULE FOR SECTION
Room: ROOM (S) FOR SECTION
Instructor: INSTRUCTOR FOR SECTION
Email: EMAIL ADDRESS FOR INSTRUCTOR FOR SECTION
Office Hours: OFFICE HOURS FOR INSTRUCTOR FOR SECTION

Source materials: The textbook is *Physics for Scientists & and Engineers* by D. Giancoli, 4th edition Vol. 1 with *Mastering Physics* web tool. Scientific calculator – You may not use a cell phone as a calculator on an exam!

Student Learning Outcomes Students will:
Understand and be able to solve problems in the metric system.
Understand and be able to solve problems in one-dimensional motion.
Understand and be able to solve problems in two-dimensional motion.
Understand and be able to solve problems using Newton's Laws.
Understand and be able to solve problems in circular motion.
Understand and be able to solve problems in gravitation.
Understand and be able to solve problems using Conservation of Energy.
Understand and be able to solve problems using Conservation of Momentum.
Understand and be able to solve problems in rigid body motion.
Understand and be able to solve problems in fluid motion.
Understand and be able to solve problems in simple harmonic motion.

Grades:
Grades are calculated from a weighted average of exams, lab scores, and the final exam. 3 Lecture Exams - 35% , Laboratory performance - 15% , Web Assignments & Homework 25%, Cumulative Final Exam - 25% Grades will be awarded as follows: 93% or above=**A**; 90-92.99%=**A-**; 87-89.99%=**B+**; 83-86.99%=**B**; 80-82.99%=**B-**; 77-79.9%=**C+**; 73-76.99%=**C**; 70-72.99%=**C-**; 67-69.99%=**D+**; 63-66.99%=**D**; 60-62.99%=**D-**; <60%=**F**

Topical Outline Lecture: (Approximate and subject to change upon notification)

Week	Topics	Book Chapter(s)
1	Measurment	1
2	Kinematics in One Dimension	2
3	Kinematics in Two or Three Dimension	3
4	Dynamics: Newton's Laws of Motion	4
5	Using Newton's Laws	5
6	Gravitation	6
7	Work and Energy	7
8	Conservation and Non-Conservative Forces	8
9	Linear Momentum	9
10	Rotational Motion & Angular Momentum	10 & 11
11	Static Equilibrium & Elasticity	12
12	Fluids & Oscillations	13 & 14
13	Final Exam	

Lecture attendance: Attending all classes is mandatory. The textbook is a guide for the course additional material will be covered during lecture meetings. If you miss class, you will miss out on taking notes and this ***will*** affect your ability to study for tests and quizzes. Except in extreme cases there can be no makeup exams and missing one is grounds for failure of the course. At all times, if you have any questions or need help, please ask your instructor. If you are having difficulties with the course, or if your life is affecting your performance in class, or your ability to attend, let me know as soon as problems arise.

Recommended Chapter Reading & Problems: (Approximate and subject to change upon notification)

Chapter	Omit sections	Homework problems
1	7	none
2	8,9	7,14,25,31,35,37,48,51,57
3	5,6,9	5,7,12,31,33,38,45
4	none	5,13,21,33,45,49,50,52
5	5,6	13,17,18,23,35,38,41,44,49,5
6	5-8	12,14,27,28
7	2,3	5,14,52,56,59
8	7,9	11,13,19,20,40
9	7,10	9,12,14,16,44,52,89
10	2,7,10	5,7,17,19,25,29,33,36,41,63
11	2-5,7-9	1,5,8
12	3-7	3,15,18,20,22,27
13	11-14	3,18,28,31,36
14	6	3,10,12,41

Homework: will be assigned using *Mastering Physics* web tool. Each homework assignment has due date. Late submissions are not graded. Average homework score will be used in the course grade.

Missed Exam/Laboratory/Assignment Policy

If you miss an opportunity to demonstrate your knowledge of the subject matter by missing a duly scheduled exam, laboratory or other assignment, the grading scheme does not apply. Your grade will be determined at the discretion of the instructor. By missing a duly scheduled exam, laboratory or other assignment, you accept and recognize that the instructor must determine your grade within the context of determining the grade of students who did not miss a duly scheduled exam, laboratory or other assignment. Instructor Make-up Policy: SUGGESTED: NO MAKE-UP EXAMS, NO MAKE-UP LABORATORIES OR NO MAKE-UP OTHER ASSIGNMENTS. FINAL EXAM WEIGHTED WITH PENALTY (0-100%) FOR MISSED WORK

Laboratory

Date	Topic	Requirements
Meeting 1	Precision of Measurements	Hand in
Meeting 2	Acceleration due to Gravity	Hand in
Meeting 3	Time of Flight versus Initial Speed	Hand in
Meeting 4	Atwood's Machine	Hand in
Meeting 5	Acceleration of a Cart	Hand in
Meeting 6	Kinetic Friction	Hand in
Meeting 7	Centripetal Force on a Pendulum	Hand in
Meeting 8	Conservation of Mechanical Energy	Hand in
Meeting 9	Conservation of Linear Momentum	Hand in
Meeting 10	Equilibrium of a Rigid Body	Hand in
Meeting 11	Buoyant Force	Hand in
Meeting 12	Simple Harmonic Motion – Mass on a Spring	Hand in

Laboratory Manual: All labs are posted on the physical science department webpage. Labs need to be downloaded and read before coming to lab. You will not be permitted in the laboratory if you do not have a copy of the experiment.

Note on laboratory component: The laboratory component counts for 15% of your overall result. Failure to pass the laboratory component of the course will result in a grade of F in the course. It is important to note that the laboratory component of the course serves a dual purpose. It offers the opportunity for students to deepen their understanding of a specific experimental science. The laboratory also offers the instructor an opportunity to assess each student's competence in the subject area. The laboratory grade is based on the quality of your work in the laboratory and the quality of your laboratory assignments. Laboratory instructors may assess your competence in the subject through the use of pre-lab assignments, reports, quizzes or practical examinations. All laboratory meetings are mandatory. Performing an experiment at an alternate time will be considered only under exceptional cases. If you miss more than one laboratory meeting you may fail the laboratory portion of the course and, hence, the entire course. All laboratory assignments must be completed and handed in within the time limits set by your laboratory instructor. Laboratory meetings are subject to the regulations of the New York City Fire Department and the laws of the State of New York. If your instructor is concerned that you are unprepared or unable to safely complete a given experiment you may be asked to leave the laboratory and will not receive credit for the meeting. Examples of reasons for an instructor's duty of action include a student arriving late to the meeting, improper attire, failure to study the laboratory experimental protocol, or a general lack of laboratory competence.

Conduct: Students are required to follow *The Student Code of Conduct* as stated in the *Student Handbook*.

Accessibility: Access-Ability Services (AAS) serves as a liaison and resource to the KCC community regarding disability issues, promotes equal access to all KCC programs and activities, and makes every reasonable effort to provide appropriate accommodations and assistance to students with disabilities. You must contact Access-Ability Services if you require such accommodations and assistance. Your instructor will make the accommodations you need, but you must have documentation from the Access-Ability office for any accommodations.