MEDGAR EVERS COLLEGE
The City University of New York

PHY 114-002: Basic Physics
Department of Physics and Computer Science

COURSE SYLLABUS

Instructor:	Dr. Danjie Zhu	Class Meeting Days and Hours:	Tu/Thu: 12:00pm – 1:40pm
Email:	dzhu@mec.cuny.edu		
Mailbox:	A1 / 506 (PECS Dept. Office)	Class/Lab Location:	Acad Com 1 C05
Course Website:	http://www.sci.brooklyn.cuny.edu/~dzhu/phy114/		
Term:	Spring, 2026	Office Hours:	With Appointment

I. Course Description

This is a one-semester survey course covering the fundamentals of Physics. Emphasis will be placed on the basic concepts and meaning of physical laws. Topics include force, vectors, velocity and acceleration, Newton's laws of motion, gravitation, work and energy, thermal energy, electrostatics, electric current, magnetism, atomic structure of matter, and wave phenomena

II. Course Co-or Prerequisites

MTH 136 or MTH 138

III. Course Credits

3 credits; 4 class hours.

IV. Required Texts and Materials

THE PHYSICS OF EVERYDAY PHENOMENA: A Conceptual Introduction to Physics, Seventh Edition
by W. Thomas Griffith and Juliet W. Brosing, McGraw – Hill Publishers

V. Exams

There will be a midterm exam and a cumulative final exam which will be on **Tuesday, May 26**. All exam grades will be curved.

VI. Basis for Final Grade

The final grade will be determined based on all your work as follows:

Assessment	Percent of Final Grade
Workshops	20%
Homework	20%
Midterm	25%
Final Exam	35%
	100%

VII. Grade Dissemination

Grades for all workshops, homework assignments and exams will be published on the course website.

VIII. Course Policies: Grades

Late Work Policy: There are no make-ups for missed assignments, quizzes, or exams. Late work submissions will be assessed a penalty for each day after the deadline (about 10 pts for each class late).

Grades of Incomplete (INC): INC grades are at the discretion of the instructor and only given in very specific circumstances. An "INC" grade is given when the student is doing passing work during a semester and who for some justifiable reason has not been able to complete a particular assignment or misses a final exam. Check the College catalog for further information regarding INC grades.

IX. Course Policies: Technology and Media

Computers and other electronic devices can only be used to access lecture materials. Students are not to work on other materials in class. Students are required to check emails and the course website with regularity to check for class information and announcements.

X. Course Policies: Student Expectations

Attendance Policy: All students have the responsibility to arrive on time, attend class regularly, and to participate fully in the work of the course. Students who miss class are responsible to find out what was discussed and learn the material that was covered on the missed day(s). The instructor is not responsible for teaching missed material under any circumstances.

Honor Code and Plagiarism (Cheating): Students are required to sign and adhere to the departmental honor pledge. Check with the department for a copy of the pledge.

EXAMS AND QUIZZES

Cell phones or any other electronic devices cannot be used during exams and quizzes. Any form of cheating during an exam or quiz will cause immediate removal from the exam and a grade of zero.

HOMEWORK ASSIGNMENTS

Unless otherwise specified, homework assignments are to be completed individually. Discussions with other people about how to solve the problem, strategies, or problems that might arise are permitted. However, each person should write his/her own programs independently.

Disability Access: Any student who may require accommodations due to a disability must be registered with the Office of Services for the Differently-Abled and notify the instructor at the start of the semester.

XI. Important Dates to Remember

Check the official academic calendar from the Office of the Registrar for special dates such as last day to add/drop classes, withdrawal deadline, closings, breaks, and examinations. Notice that the exam dates can be changed at the discretion of the professor.

XII. Schedule

The schedule, together with assignments, is subject to change in the progress of the course. Some topics might take longer than one week. Announcements made in the class and on the website/email override the schedule in case of conflicts.

Course Outline & Schedule of Tests

Week	Chapter	Topics
1	**1**	**Workshop #1-1:** Exact and measured numbers, exponential form of numbers, algebraic rearrangement, standard units, Metric system, measurement conversion. ***Workshop Assignment 1***
2	**2**	**Motion:** Displacement, velocity, speed; **Workshop #1-2:** Units Conversion ***Workshop Assignment 2***
3.	**2**	**Motion:** acceleration, graphing motion**;** ***Workshop Assignment 3***
4	**2, 3**	**Motion:** Uniform acceleration formulas; Free – fall, vertical and horizontal projectile Motion, motion in one dimension.
5		**Workshop #2 -- Vectors:** Scalars, vectors, unit vectors, vector components, addition and subtraction of vectors, scalar product. **(HW #1)**
6	**4**	**Newton's Laws:** Mass, force and weight, Newton's three laws of motion
7	**5**	**Circular Motion:** Centripetal acceleration and centripetal force, Newton's Universal Law of Gravitation, gravitational constant, mass of Earth, satellites in orbit. **(HW #2)**
8		**Review HW#1** ***Midterm (Chp. 1 – 5) + Review***
9	**6**	**Energy:** Work, energy and power, kinetic energy, potential energy, forms of energy, conservation of energy.
10	**7** **9**	**Momentum:** Conservation of momentum. **(HW #3)** **Fluids:** Pressure, Pascal's Principle, density (to pp. 14)
11	**9** **10**	**Fluids:** Density, Archimedes Principle, and Bernoulli's Principle. (pp. 14 to end) **Thermodynamics:** Temperature, heat and internal energy, mechanical equivalent of heat. Specific heat, heat flow, change of state, heat of fusion and heat of vaporization
12	**10**	**Thermodynamics:** Temperature, heat and internal energy, mechanical equivalent of heat. Specific heat, heat flow, change of state, heat of fusion and heat of vaporization
13	**10** **12**	**Thermodynamics:** basic means of heat flow **(HW #4)** **Electricity:** Electric charge, conservation of charge, Coulomb's law, electric fields, quantization of charge (12.5 Electric Potential not covered)
14		**Final Exam Review**
15		**FINAL EXAMINATION**

(The above schedule is subject to change without notification.)