PRINCE GEORGE'S COMMUNITY COLLEGE

GENERAL PHYSICS I

PHY 1030		Instructor:	Dr. D. Simpson
Section LE01		Office:	310-I Chesapeake Hall
Fall 2023		Office Hours:	Mon & Wed 5:30-6:00 pm
Mon & Wed 6:00-7:50 pm	CH-301	Telephone:	(301) 322-0990 ext. 4768
		Email:	dsimpson@pgcc.edu

Course Web site: http://www.pgccphy.net/1030
Textbook Web site: http://www.cengage.com/physics/serway

Textbooks:

Physics for Scientists and Engineers, 10th ed., R.A. Serway and J.W. Jewett. Brooks/Cole, 2019. (ISBN 9781337553292)

Study Guide with Student Solutions Manual and Study Guide to Accompany Physics for Scientists and Engineers, 10th ed., R.A. Serway and J.W. Jewett. Brooks/Cole, 2018. (Optional.)

Recommended Reference:

The Feynman Lectures on Physics (3 vol.), R.P. Feynman, R.B. Leighton, and M.L. Sands. Addison-Wesley, 1963. (These can be found free online at https://www.feynmanlectures.caltech.edu)

Course Description:

This course is a calculus-based study of classical mechanics, including laws of motion, force, energy and momentum, and gravitation.
Prerequisite: Calculus I (MAT 2410)
Co-requisite: Calculus II (MAT 2420)

Tentative Schedule

Week	Dates	Topics	Chapters
1	Mon 8/21 Wed 8/23	Math Review; Measurement	App B; 1
2	Mon 8/28 Wed 8/30	Kinematics (1D)	2
3	Mon 9/4 Wed 9/6	- No class - Vectors	 3
4	Mon 9/11 Wed 9/13	Kinematics (2D)	4
5	Mon 9/18 Wed 9/20	Newton's Laws	5
6	Mon 9/25 Wed 9/28	Circular Motion	6
7	Mon 10/2 Wed 10/4	Energy	7
8	Mon 10/9 Wed 10/11	Conservation of Energy	8
9	Mon 10/16 Wed 10/18	Linear Momentum	9
10	Mon 10/23 Wed 10/25	Linear Momentum	9
11	Mon 10/30 Wed 11/1	Rotational Motion	10

12	Mon 11/6 Wed 11/8	Angular Momentum	11
13	Mon 11/13 Wed 11/15	Gravitation	13
14	Mon 11/20 Wed 11/22	Celestial Mechanics - Thanksgiving Break -	-
15	Mon 11/28 Wed 11/29	Advanced Topics	-
16	Mon 12/4	Final Exam	

Homework:

There will be approximately one homework assignment per week, usually given out on Mondays and due the following Monday. All homework assignments, i.e., problem sets, are due on the date indicated for the assignment, AT THE BEGINNING OF CLASS.
Homeworks submitted late will receive a significant penalty.
Homeworks submitted after the solutions have been handed out will not be accepted.

The lowest homework score will be dropped in computing your homework grade.

The final homework will be a small project involving celestial mechanics, and will be worth two regular homeworks.

Quizzes:

There will be a number of short quizzes, usually every Wednesday at the beginning of the recitation period. These will consist of a single problem for you to work, to make sure you're keeping up with the material. Calculators or slide rules are permitted during the quizzes.

Exams:

Two exams will be given during the semester and will be scheduled at least one week in advance. If you must be absent from an exam, consult with your instructor BEFORE the exam is given. There will be no need to memorize formulae for an exam; all the important formulae will appear on a formula page passed out with the exam.

Calculators or slide rules are permitted during exams. Any use of cell phones or smart watches during exams is strictly prohibited. All cell phones and smart watches must be OFF and put away during all exams.

Final Exam:

In addition to these two exams, there will be a comprehensive final exam on December 4 from 6:00 to 8:20 pm.

Grading:

Your final grade will be based on your scores on homework, the two exams, and the final exam, as follows:

Homework	20.0%
Quizzes	15.0%
Exam 1	20.0%
Exam 2	20.0%
Final exam	25.0%

Grading will be determined by a class average. The following scores will be sufficient to earn the following grades:

A	90%
B	80%
C	70%
D	60%

Classroom Policies:

Academic honesty and integrity will be expected of you at all times -- for this course or any other. I will deal with infractions quite severely.

You are free to ask questions at any time during the lecture, but the classroom is not the place for conversations. If you'd like to have a personal conversation, please take it into the hallway.

Photocopied assignments will not be accepted.

Mathematical notation:

You will be expected to use proper mathematical notation in all your work. Do not use * for multiplication, or E or ^ for exponentiation. For example:

2.67×3.14	*or*	$2.67 \cdot 3.14$	*or*	$(2.67)(3.14)$	*not*	$2.67 * 3.14$
				1.23×10^6	*not*	1.23E6
				10^{15}	*not*	$10 \wedge 15$

In this course, we will use American-style mathematical notation, in which the period (.) is used as the decimal point and the comma (,) as a digit separator.

For example, 4.56 means "four and fifty-six hundredths," while 1,000,000 means "one million."

Memorization:

There will be a few things you will be expected to memorize for this class. Among these will be especially the Greek alphabet and the SI prefixes exa- through atto- (below).

The Greek alphabet.

Letter	Name
A α	Alpha
B β	Beta
Γ γ	Gamma
Δ δ	Delta
E ε	Epsilon
Z ζ	Zeta
H η	Eta
Θ θ	Theta
I ι	Iota
K κ	Kappa
Λ λ	Lambda
M μ	Mu
N ν	Nu
Ξ ξ	Xi
O o	Omicron
Π π	Pi
P ρ	Rho
Σ σ	Sigma
T τ	Tau
Υ υ	Upsilon
Φ φ	Phi
X χ	Chi
Ψ ψ	Psi
Ω ω	Omega

(Alternate forms: $\varbeta = \beta$, $\eth = \delta$, $\epsilon = \varepsilon$, $\vartheta = \theta$, $\varkappa = \kappa$, $\varpi = \pi$, $\varrho = \rho$, $\varsigma = \sigma$, $\phi = \varphi$.)

SI prefixes.

Prefix	Symbol	Definition
quetta-	Q	10^{30}
ronna-	R	10^{27}
yotta-	Y	10^{24}
zetta-	Z	10^{21}
exa-	E	10^{18}
peta-	P	10^{15}
tera-	T	10^{12}
giga-	G	10^{9}
mega-	M	10^{6}
kilo-	k	10^{3}
hecto-	h	10^{2}
deka-	da	10^{1}
deci-	d	10^{-1}
centi-	c	10^{-2}
milli-	m	10^{-3}
micro-	μ	10^{-6}
nano-	n	10^{-9}
pico-	p	10^{-12}
femto-	f	10^{-15}
atto-	a	10^{-18}
zepto-	z	10^{-21}
yocto-	y	10^{-24}
ronto-	r	10^{-27}
quecto-	q	10^{-30}

The eight newest prefixes quetta- (Q), ronna- (R), yotta- (Y), zetta- (Z), zepto- (z), yocto- (y), ronto- (r), and quecto- (q) are uncommon, and their memorization is optional.

Disability Support Services:

Students requesting academic accommodations are required to contact the Disability Support Services Office (B-124) or call (301) 322-0838 (voice) or (301) 322-0122 (TTY) to establish eligibility for services and accommodations. Students with documented disabilities should discuss the matter privately with their instructors at the beginning of the semester and provide a copy of their Student/Faculty Accommodation Form.

Code of Conduct:

The Prince George's Community College Code of Conduct defines the rights and responsibilities of students and establishes a system of procedures for dealing with students charged with violations of the code and other rules and regulations of the college. A student enrolling in the college assumes an obligation to conduct himself/herself in a manner compatible with the college's function as an educational institution. Refer to the 2022-2023 Student Handbook:

http://www.pgcc.edu/student_life/student_handbook.aspx

for a complete explanation of the Code of Conduct, including the Code of Academic Integrity and the procedure for dealing with disruptive student behavior.

Code of Academic Integrity:

The college is an institution of higher learning that holds academic integrity as its highest principle. In the pursuit of knowledge, the college community expects that all students, faculty, and staff will share responsibility for adhering to the values of honesty and unquestionable integrity. To support a community committed to academic achievement and scholarship, the Code of Academic Integrity advances the principle of honest representation in the work that is produced by students seeking to engage fully in the learning process. The complete text of the Code of Academic Integrity is in the 2022-2023 Student Handbook and posted on the college's website.

Delayed College Openings:

When the College announces a delayed opening, all classes with at least 45 minutes of class time remaining at the time of the opening will be held. For example, in the event of a 10 a.m. opening, a 9:30-10:45 a.m. class will be held. This procedure applies to all credit classes.