

**UNIVERSIDAD INTERAMERICANA DE PUERTO RICO
RECINTO METROPOLITANO
NATURAL SCIENCES DEPARTMENT
PHYSICS PROGRAM**

SYLLABUS

I. GENERAL INFORMATION

COURSE TITLE	:	GENERAL PHYSICS 1
Code and Number	:	PHYS 3001
Credits	:	4 CREDITS
Academic Period	:	
Professor	:	
Office Hours	:	
Office Phone	:	
e-mail	:	

II. COURSE DESCRIPTION

Logical and unified presentation of physics at the introductory level, emphasizing the basic ideas constituting its foundations: Laws of motion and the conservation and interaction between particles and fields. Students are exposed to different experiences in the fields of mechanics and heat in the teaching-learning process. Emphasis on the integration and application of concepts throughout the experimentation. Requires 45 hours of lecture and 45 hours of lab. Prerequisite MATH 1500.

III. OBJETIVES

At the end of this course, student will be able to:

1. Qualitatively and quantitatively examine the studied Physics Laws in the mechanic and heat areas.
2. Relate and integrate the concepts and Physics laws in the interpretation of nature physical phenomena.
3. Interpret Physics world phenomena correctly using the analysis and synthesis processes.
4. Prepare and interpret graphical representations of physical phenomena.
5. Qualitatively describe any observed physical phenomena.
6. Use mathematics for the quantitative description of physics world phenomena.
7. Use Physics in the knowledge search process about the physical world phenomena.

For the Physics Laboratory:

8. Apply the scientific method in an experimental process.
9. Correctly use the measurement techniques for physical quantities.
10. Relate and apply the laboratory experiences with the theory and concepts learned in class.
11. Qualitatively and quantitatively describe the different concepts studied in mechanics and heat.

IV. THEMATICAL CONTENT

A. General Aspects

1. Syllabus discussion.
2. Introduction to Physics course.

B. Mechanics

1. Motion in one dimension
2. Motion in two dimensions.
3. The Newton's mechanics theory
4. Uniform circular motion and gravitation
5. Work and Energy
6. Momentum
7. Equilibrium of rigid bodies
8. Rotation
9. Simple harmonic motion
10. Mechanics of fluids

C. Heat

1. Thermo physics

V. ACTIVITIES

- A. Lectures
- B. Simulation and demonstrations in class.
- C. Educative videos related to the class.
- D. Collaborative works.
- E. Written reports.
- F. Experimentation through laboratory experiences.
- G. Discussion in physics class

VI. EVALUATION

	Punctuation	Weight %
3 partial exams	300 pts	60%
Final Exam or equivalent	100 pts	20%
Laboratory	100 pts	20%
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Total	500 pts	100%

The grade scale is:	100-85	A
	84-75	B
	74-65	C
	64-55	D
	54 -0	F

VII. SPECIAL NOTES

A. Auxiliary services or special needs

All students who require ancillary services or special assistance must request the same at the beginning of the course or as soon as they acquire knowledge that they need them, through the corresponding register, or You can communicate with the Coordinator (a) Auxiliary to the telephone Sr. George Rivera, extension 2262 or 2147, or email griverar@metro.inter.edu.

B. Honesty, fraud, plagiarism

Lack of honesty, fraud, plagiarism and any other inappropriate behavior in relation to academic work are major infractions sanctioned by the **General Regulations of Students**. Major infractions, according to the General Regulations of Students, may result in the suspension of the University for a definite time greater than one year or permanent expulsion from the University, among other sanctions.

C. Use of electronic devices

Cell phones and any other electronic device that could disrupt the teaching and learning processes or switch the driving environment to academic excellence were deactivated. The answers are

correct, as appropriate. The handling of electronic devices that allow access, storage or sending of data during test evaluations is prohibited.

D. Compliance with the provisions of " Título IX "

The Federal Higher Education Act, as amended, prohibits discrimination on the basis of sex in any academic, educational, extracurricular, athletic or any other program or employment, sponsored or controlled by an institution of higher education regardless of whether it takes place Inside or outside the institution's premises, if the institution receives federal funds.

As provided by current federal regulations, a Title IX Assistant Coordinator has been designated in our academic unit to provide assistance and guidance regarding any alleged incidents of discrimination based on sex or gender, sexual harassment or sexual assault .

You can communicate with the Coordinator (a) Auxiliary to the telephone **Sr. George Rivera, extension 2262 or 2147**, or email **griverar@metro.inter.edu**.

The Normative Document entitled "**Normas y Procedimientos para Atender Alegadas Violaciones a las Disposiciones del Título IX**" is the document that contains the institutional rules for channeling any lawsuit that is filed based on this type of claim. This document is available on the website of the Inter-American University of Puerto Rico (www.inter.edu).

VIII. EDUCATIVE RESOURCES

Physics: Giancoli - Physics Principles with Applications 7th c2014

IX. BIBLIOGRAPHY

- Libros Cutnell, John. And Jonson, Kenneth. (2009). *Physics 8e*. eight Edition. Volume two. USA. John Wiley & Son, Inc. NJ, USA. ISBN 978-0-470-37925-7. www.wiley.com/college/cutnell
- Serway, Raymond. And Jewett, John, jr. (2008) *Physics for Scientists and Engineers with Modern Physics*. Seventh Edition. Thomson Learning, Inc. United States. ISBN-13: 978-0-495-11245-7 or 10: 0-495-11245-3.

In campus Audiovisual room

The following videos are available in DVD format.

QC28 .W394 2000	Q-260 DVD	2000
Waves [video recording] : energy in motion AIMS Multimedia (Firm)		
QC28 .L564 2000	Q-261 DVD	2000
Light, lenses and lasers [video recording] AIMS Multimedia (Firm).		

QC28 .E543 2000 Q-257 DVD
Electricity [video recording] : the invisible river of energy

2000

revised: November 12, 2016