ATENEO DE MANILA UNIVERSITY
LOYOLA SCHOOLS

Course Syllabus

A. Course Information

Course Number	Phys 20.02			**No. of Units**	1
Course Title	Elementary Physics I, Laboratory				
Prerequisite/s	None				
Department/Program	Physics			**School**	Science and Engineering
School Year	2025–2026			**Semester**	1
Instructor/s	Ralph Torres				
Venue	SEC-C105A	**Section**	LAB1-NO1	**Schedule**	T 1500–1700

B. Course Description

This course is the laboratory counterpart of Phys 20.01 for Health Sciences majors. The approach includes hands-on experimentation, computer-aided experiments, simulations, and active-learning laboratory methodologies. Topics to be covered include general mechanics, fluid mechanics, and thermodynamics.

Where is the course situated within the formation stages in the framework of the Loyola Schools curricula?	
	Foundations: Exploring and Equipping the Self
	Rootedness: Investigating and Knowing the World
✓	**Deepening**: Defining the Self in the World
	Leadership: Engaging and Transforming the World

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C. Course Learning Outcomes

By the end of this course, students should be able to

Course learning outcomes	
CLO1	Create experimental solutions using the scientific method
	Knowledge: explain the scientific method
	Skills: conduct experiments proficiently, and formulate logical conclusions from precise and accurate measurements
	Attitudes: reflect on the importance of physics in everyday life
CLO2	Communicate ideas and results in clear and logical manner

	Knowledge: use applicable methods for verbal and written communications
	Skills: write good-quality reports, and apply appropriate statistical methods in data analysis
	Attitudes: accept new ideas with an open mind
CLO3	Actively and productively collaborate with peers
	Knowledge: work as part of a team in completing assigned group activities
	Skills: manage group activities, and create performance tasks
	Attitudes: evaluate self and peers

D. Course Outline and Learning Hours

Experiments requiring individual reports are marked with a star ⋆. See schedule at ralphptorr.es/class/phys-20.

Course outline	CLOs	Learning hours
Module 1: Kinematics of one-dimensional motion	1, 2, 3	5 hr / 1 wk
Module 2: Kinematics of two-dimensional motion	1, 2, 3	5 hr / 1 wk
Module 3: Newton's laws of motion and applications ⋆	1, 2, 3	5 hr / 1 wk
Module 4: Grip strength comparison	1, 2, 3	5 hr / 1 wk
Module 5: Work, energy, and momentum	1, 2, 3	5 hr / 1 wk
Module 6: Torque and static equilibirium	1, 2, 3	5 hr / 1 wk
Module 7: Heart rate and blood pressures as vital signs ⋆	1, 2, 3	5 hr / 1 wk
Module 8: Specific heat of materials	1, 2, 3	5 hr / 1 wk
Module 9: Skin temperature recovery	1, 2, 3	5 hr / 1 wk
Module 10: Humidity and wind chill factor	1, 2, 3	5 hr / 1 wk

E. Assessments and Rubrics

Students taking this course will be assessed based on

Assessment tasks	Weight (%)	CLOs
Individual reports (2)	50	1, 2, 3
Group reports (8)	40	1, 2, 3
Reflection paper	5	2, 3
Peer evaluation	5	2, 3

Rubrics will be given for each requirement.

F. Teaching and Learning Methods

Teaching and learning methods and activities	CLOs
Pre-lab and in-lab discussions	1, 2, 3
Group reports (collaborative assessment)	1, 2, 3
Individual reports (individual assessment)	1, 2
Reflection and evaluation (critical self-assessment)	2, 3

G. Required Readings

The primary references for the course are

- The laboratory manuals provided by the Department of Physics
- P.P. Urone and R. Hinrichs, College Physics 2e, OpenStax (2022), open access.

H. Suggested Readings

Other references relevant to health science may be accessed via bit.ly/rl_offcampus_access and include

- P. Davidovits, Physics in Biology and Medicine 5e, Academic (2019)
- I.P. Herman, Physics of the Human Body 2e, Springer (2016)
- E. Okuno and L. Fratin, Biomechanics of the Human Body, Springer (2014).

The following may be used to supplement the required readings:

- J.D. Cutnell and K.W. Johnson, Introduction to Physics 9e, Wiley (2013)
- D.C. Giancoli, Physics: Principles with Applications 7e, Pearson (2014)
- P.G. Hewitt, Conceptual Physics 13e, Pearson (2021)
- R.A. Serway and J.W. Jewett, Physics for Scientists and Engineers 10e, Cengage (2019)
- P.A. Tipler and G. Mosca, Physics for Scientists and Engineers 6e, Freeman (2008)
- H.D. Young and R.A. Freedman, University Physics with Modern Physics 15e, Pearson (2019).

I. Grading System

Let g be the final percentage grade. The letter grade $L(g)$ is assigned using the highest applicable threshold:

$$\geq 92 \;\; \text{A}, \quad \geq 86 \;\; \text{B+}, \quad \geq 81 \;\; \text{B}, \quad \geq 76 \;\; \text{C+}, \quad \geq 69 \;\; \text{C}, \quad \geq 60 \;\; \text{D}, \quad < 60 \;\; \text{F}.$$

J. Class Policies

1. **Learning platform**. The official learning management system for this course is Canvas. Only students who are officially enrolled will be included in the Canvas course. Requirements will be submitted in Canvas.
2. **Course materials**. All materials in the course and recordings of any synchronous session are CC-BY-NC-SA-4.0 unless otherwise noted. Please do not share assessment materials to avoid unfair advantages.
3. **Attendance**. As this is a 1-unit class, students are allowed 3 cuts maximum, after which they will automatically receive a grade of W. Students will be marked absent if they arrive after the first 15 minutes.
4. **Communications and consultations**. The instructor will communicate with the students via Canvas announcements or their student.ateneo.edu emails. Online consultations should include at least 3 people.
5. **Late submissions**. Late submissions of take-home assessments (reports) are not penalized but are only accepted until the until-date in Canvas. Early submissions (+1 dy) receive 1 extra point per submission.
6. **Groupings**. Students may form groups of 3 to 4. Each group is identified by table number. To encourage new collaborations, students will earn extra points ε for n new groupmates in a submission: $\varepsilon = n/4$.
7. **Grades**. The overall grade reflected in Canvas is not necessarily official. The official grade of the student in the course is the grade that is posted by the registrar and reflected in the student's AISIS account.
8. **Academic integrity**. Students are expected to exercise the highest level of academic integrity. Cheating or plagiarism will not be tolerated and will be treated as a grave offense, subject to disciplinary action.
9. **On AI tools**. When using generative AI for submission, students are expected to cite and document their use in an appendix, verify the accuracy of their content, and take ownership of their submission.
10. **Academic conduct and the Loyola Schools (LS) Gender Policy**. The University does not discriminate on the basis of sex, gender, marital or parental status, sexual orientation, or gender identity or expression. See the following links for more information.
    - Undergraduate Student Handbook 2023: ateneo.edu/college/current-students/handbook
    - LS Code of Decorum: ateneo.edu/central/policies/code-of-decorum
    - LS Gender Policy: ateneo.edu/ls/genderpolicy

K. Consultation Hours

Tue 1100–1230, 1400–1500, or Fri 1100–1230, or by appointment (via rtorres@ateneo.edu), at Phys Department