PHYS 1101 Introductory Physics
Course Outline (Fall 2024)

1. Instructors

Name: NG, Yee Fai* (L1)
Contact details: e-mail: phyfng@ust.hk; tel. no.: 2358 7473; office: Rm. 4448

Name: ZHANG, Rui (L2)
Contact details: e-mail: ruizhang@ust.hk; tel. no.: 2358 5734; office: Rm. 4460

* Course coordinator

2. Teaching Assistants

Name: LI, Cheung Shun (IA)
Contact details: e-mail: cslia@ust.hk; tel. no.: 2358 7528; office: Rm. 4469

Name: FU, Xizhi (TA)
Contact details: e-mail: xfuam@connect.ust.hk; tel. no.: --; office: ---

Name: ZHOU, Youyi (TA)
Contact details: e-mail: yzhoufh@connect.ust.hk; tel. no.: --; office: ---

Name: CHOI, Inho (TA)
Contact details: e-mail: ichoi@connect.ust.hk; tel. no.: --; office: ---

3. Meeting Dates, Times, and Venues

Lectures

L1	Mon & Wed	09:00AM - 10:50AM	LT-G
L2	Wed & Fri	02:30PM - 04:20PM	LT-F

Tutorials

T1	Thu	10:30AM - 11:20AM	Rm. 6602
T2	Thu	12:00PM - 12:50PM	Rm. 1409
T3	Wed	06:00PM – 06:50PM	Rm. 2306
T4	Fri	11:30AM - 12:20PM	Rm. 2306

4. Course Description

This course is for students with no physics background. It can serve as a standalone introduction to physics or as a preparatory course for students who intend to take

PHYS 1112. It is not a preparatory course for PHYS 1111; students with no calculus background who plan to take General Physics should take calculus concurrently with PHYS 1101 so that they meet the prerequisites for PHYS 1112. Topics covered include heat and gases, force and motion, waves, and electricity and magnetism.

Credit points: 4
Exclusion: Level 3 or above in HKDSE ½× Physics or HKDSE 1× Physics; any PHYS courses at 1100-level or above

5. Intended Learning Outcomes

Upon successful completion of this course, students should be able to...

Nos.	ILOs
1	explain and apply the concepts of temperature, heat, internal energy, and change of state;
2	analyze motion using the concepts of force, work, mechanical energy, and momentum;
3	explain phenomena related to light and sound in terms of properties of waves;
4	solve problems in introductory electrostatics, circuits and electromagnetism;
5	use basic mathematics for quantitative analysis of physics problems;
6	describe the theoretical and experimental foundations of physics.

6. Assessment Scheme

Assessment	Assessing Course ILOs
10% by tutorial iPRS	1-6
15% by assignments	1-6
25% by midterm exam	1-6
50% by final exam	1-6

7. Student Learning Resources

a. Adopted textbook:
Physics—Technology Update
Author: James S. Walker
Edition: 4th (PNIE)
Publisher: Pearson
Format(s): Print book, eBook
b. Lecture notes (including simulations and videos)
c. Live experimental demonstrations during lectures
d. Course homepage: https://canvas.ust.hk/courses/59546

8. Teaching and Learning Activities

Scheduled activities: 5 hours [2 × 2 hours (lectures) + 1 × 1 hour (tutorial)] / week

9. Course Schedule

Keyword syllabus:

Lecture Nos.	Contents
1 & 2	Position and movement (Kinematics)
3 & 4	Force and motion (Dynamics)
5	Projectile motion
6 & 7	Work, energy, and power
8	Momentum
9	Uniform circular motion
10	Temperature, heat, and internal energy
11	Transfer processes
12	Change of state
13 & 14	Gases
15	Electrostatics
16	Circuits and domestic electricity
17, 18 & 19	Electromagnetism
20	Nature and properties of waves
21	Sound
22, 23 & 24	Light