



# Chapter 0

## About this course

Course code: 11110PHYS113305

Course title: General Physics B (I)

Instructor: CHANG, Hsiang-Kuang (張祥光)  
([hkchang@mx.nthu.edu.tw](mailto:hkchang@mx.nthu.edu.tw))

TA: 黃千祐 (Jason Huang, [ak119ka@gmail.com](mailto:ak119ka@gmail.com))  
王皓陞 (Howard Wang, [whshoward@gmail.com](mailto:whshoward@gmail.com))

TA office hour: R5R6, in Rm529, GB II, B side (Howard)  
R7R8, in Rm 518, GB II, B side (Jason)

Interaction platform at NTHU/eLearn (<https://elearn.nthu.edu.tw/>)



# Chapter 0

## About this course

Why are you here?



# Chapter 0

## About this course

This course is the first part of college physics.  
It covers mechanics, waves, and basic thermodynamics.

The purpose of this course is to provide basic, general,  
broad physics knowledge to students.

The emphasis will be on **questions** and **concepts**,  
followed by some **technical details** and **applications**.



# Chapter 0

## About this course

Textbook

Author: Jearl Walker

Title: Halliday and Resnick's Principles of  
Physics, global edition (2020)

Publisher: Wiley

ISBN: 978-1-119-45401-4

References

1. "The Feynman Lectures on Physics"  
(There are various published editions)

2. "University Physics", Harris Benson  
(1996, John Wiley & Sons)

# BRIEF CONTENTS

## VOLUME 1

- 1 Measurement
- 2 Motion Along a Straight Line
- 3 Vectors
- 4 Motion in Two and Three Dimensions
- 5 Force and Motion—I
- 6 Force and Motion—II
- 7 Kinetic Energy and Work
- 8 Potential Energy and Conservation of Energy
- 9 Center of Mass and Linear Momentum
- 10 Rotation
- 11 Rolling, Torque, and Angular Momentum
- 12 Equilibrium and Elasticity
- 13 Gravitation
- 14 Fluids
- 15 Oscillations
- 16 Waves—I
- 17 Waves—II
- 18 Temperature, Heat, and the First Law of Thermodynamics
- 19 The Kinetic Theory of Gases
- 20 Entropy and the Second Law of Thermodynamics

## VOLUME 2

- 21 Coulomb's Law
- 22 Electric Fields
- 23 Gauss' Law
- 24 Electric Potential
- 25 Capacitance
- 26 Current and Resistance
- 27 Circuits
- 28 Magnetic Fields
- 29 Magnetic Fields Due to Currents
- 30 Induction and Inductance
- 31 Electromagnetic Oscillations and Alternating Current
- 32 Maxwell's Equations; Magnetism of Matter
- 33 Electromagnetic Waves
- 34 Images
- 35 Interference
- 36 Diffraction
- 37 Relativity
- 38 Photons and Matter Waves
- 39 More About Matter Waves
- 40 All About Atoms
- 41 Conduction of Electricity in Solids
- 42 Nuclear Physics
- 43 Energy from the Nucleus
- 44 Quarks, Leptons, and the Big Bang



# Chapter 0

## About this course

The course will go mainly with lectures.  
Classroom discussion is very much welcome and encouraged.  
The 2nd hour on Fridays will be used for mini-tests.

Exams:

Midterm: Nov. 8, 2022; Ch1 – Ch14

Final: Jan. 10, 2023; Ch15 - Ch20

Evaluation

$GD = F(PT)$

$PT = MT \times 20\% + ME \times 40\% + FE \times 40\%$

Interaction platform at NTHU/eLearn (<https://elearn.nthu.edu.tw/>)