

PHYS 1114 – General Physics II

School:	School of Science
Subject Area:	Physics
Course Credit:	3
Instructor:	CHEUNG Man Fung
Pre-requisite/co-requisite:	<u>Details Here</u>

Notes:

- The syllabi provided here is for reference only and may be subject to changes and adjustments as determined by the course instructors.

The Hong Kong University of Science and Technology

PHYS1114 Syllabus (Summer 2025)

Course Title: General Physics II

Course Code: PHYS1114

Credit Points: 3

Instructors:

Name: CHEUNG, Man Fung
Office Hour: Monday 2 pm – 3 pm
Office: Rm 4444
Email: cheungmf@ust.hk

Pre-requisite: (PHYS 1111 OR PHYS 1112 OR PHYS 1312) AND (level 3 or above in HKDSE Mathematics Extended Module M1/M2 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023)

Exclusion: PHYS 1154 (prior to 2014-15), PHYS 1314

Course Description

This course targets students who have learned the most basic knowledge in physics in high school. Students with a more advanced physics background should consider taking PHYS 1314. This course employs a calculus-based approach. Key topics include Coulomb's law, electric field and potential, Gauss' law, capacitance, circuits, magnetic force and field, Ampere's law, electromagnetic induction, AC circuit, Maxwell's equations, electromagnetic waves, geometric optics, interference and diffraction.

Intended Learning Outcomes (ILO)

On successful completion of this course, students are expected to be able to:

1. Classify the nature of electric and magnetic fields, which occur in numerous applications in industry and technology, as well as and in every day's life.
2. Describe visible light as part of the electromagnetic wave spectrum
3. Apply the wave nature of light to describe natural phenomena
4. Perform simple calculations by applying the basic concepts of electromagnetism and optics
5. Use scientific language to explain phenomena in the physical world
6. Use calculus to analyze and solve physical problems

Assessment and Grading

This course will be assessed using criterion-referencing and grades will **not** be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

<u>Assessment</u>	<u>Contribution to Overall Course grade (%)</u>	<u>Due date</u>
Homework	10%	Every Wednesday, 11:59pm
Tutorial	10%	In tutorial session
Midterm	40%	July 9, 10:30-12:30
Final Exam	40%	Aug 7, 10:30-12:30

Assessment marks for individual assessed tasks will be released within two weeks of the due date.

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped ILOs	Explanation
Homework Tutorial Exercises Midterm Exam Final Exam	ILO 1 – 6	These tasks assess students' ability to comprehend and explain physical situation in scientific language (ILO 5), and to apply knowledge of Coulomb's law, electric field and potential, Gauss' law, capacitance, circuits, magnetic force and field, Ampere's law, electromagnetic induction, AC circuit, Maxwell's equations, electromagnetic waves, geometric optics, interference and diffraction of light (ILO 1, 2, 3 and 4) together with techniques in calculus to solve problems (ILO 6).

Grading Rubrics

Problems in all assessment tasks are graded based on correctness of the answers.

Final Grade Descriptors:

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	Demonstrates a comprehensive grasp of subject matter, expertise in problem-solving, and significant creativity in thinking. Exhibits a high capacity for scholarship, going beyond core requirements to achieve learning goals. *Typical overall course grade: 80% - 100%
B	Good Performance	Shows good knowledge and understanding of the main subject matter, competence in problem-solving, and the ability to analyze and evaluate issues. Displays high motivation to learn. *Typical overall course grade: 60% - 80%
C	Satisfactory Performance	Possesses adequate knowledge of core subject matter, competence in dealing with familiar problems, and some capacity for analysis and critical thinking. Shows persistence and effort to achieve learning goals. *Typical overall course grade: 40% - 60%
D	Marginal Pass	Has threshold knowledge of core subject matter and potential to achieve key professional skills. Benefits from the course and has the potential to develop in the discipline. *Typical overall course grade: 30% - 40%
F	Fail	Demonstrates insufficient understanding of the subject matter and lacks the necessary problem-solving skills. Shows limited ability to think critically or analytically and exhibits minimal effort towards achieving learning goals. Does not meet the threshold requirements for professional practice or development in the discipline. *Typical overall course grade: below 30%

*The final grade will be assessed using criterion-referencing and the difficulties of the assessment will be considered when determining the range of overall course grade in each final grade, such that the final grade reflects the criteria that students achieved in the course. Thus, the range of overall course grades of each

final grade may vary semester to semester depending on the difficulties of the assessment, including homework, tutorial exercises and exams.

Course AI Policy

In this course, except for examinations, you are allowed to use generative artificial intelligence (AI) to aid you for learning purposes. However, you must give proper credit for any use of generative AI.

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Canvas within two weeks of submission. Students who have further questions about the feedback including marks should consult the instructor within five working days after the feedback is received.

Resubmission Policy

Submission of assessments including homework assignments and tutorial exercises will not be considered. Zero mark will be given for late submissions of the tasks.

Required Texts and Materials

Textbook: University Physics with Modern Physics Volume 2 W/ MasteringPhysics by Hugh D. Young, 15th edition, Pearson

Online resources: MasteringPhysics, Lecture Notes on Canvas

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to [Academic Integrity | HKUST – Academic Registry](#) for the University's definition of plagiarism and ways to avoid cheating and plagiarism.