科目ナンバリング	U-LAS12 10006 LE57						
授業科目名 <英訳>	Fundamental Physics B-E2 Fundamental Physics B-E2			担当者所属 職名・氏名	工学研究科　准教授　Jorge Luis Puebla Nunez		
群	自然科学科目群		分野(分類)	物理学(基礎)		使用言語	英語
旧群	B群	単位数	2単位	週コマ数	1コマ	授業形態	講義（対面授業科目）
開講年度・開講期	2026・後期	曜時限	木3	配当学年	主として1回生	対象学生	理系向

[授業の概要・目的]

This course will explain the fundamentals of electrostatics and magnetostatics to students. Problems will be solved during the lectures to understand the concepts better.

[到達目標]

- Understand the fundamental laws of electrostatics and magnetostatics.
- Understand the concepts better by applying the laws and concepts to solve problems.

[授業計画と内容]

1. Overview of the course, introduction to vector calculus (1 week)
2. Coulomb's law, electric field, electrostatic potentials, Gauss's law (2 weeks)
3. Gauss’s theorem (not Gauss’s law), Laplace’s Equation, Stokes's theorem (2 week)
4. Electrostatic capacitance, conductors and insulators (2 weeks)
5. Charge conservation, Ohm’s law, Metals, Semiconductors (2 weeks)
6. Circuits and circuit elements (1 week)
7. Magnetic field, Field of a current in a wire, Field of rings and coils (2 weeks)
8. Maxwell’s equations and electromagnetic waves (2 weeks)
9. Feedback (1 week)

[履修要件]

This course is intended mainly for students who studied physics at high school

[成績評価の方法・観点]

Evaluation will be based on participation (20%), mid-term examination (30%), and final examination (50%).

[教科書]

使用しない

[参考書等]

（参考書）

Edward M. Purcell 『Electricity and Magnetism』 ISBN:9781139005043

[授業外学修（予習・復習）等]

Students are required to do their homework. When trouble is encountered during homework, please refer to the recommended textbook or ask the instructor.

[その他（オフィスアワー等）]

Office hours: Anytime by email, and appointments should be made via email.

[主要授業科目（学部・学科名）]

理学部