科目ナンバリング	U-LAS12 10035 LE57						
授業科目名<英訳>	Introduction to Solid State Physics-E2 Introduction to Solid State Physics-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	2025・前期	曜時限	木3	配当学年	主として1・2回生	対象学生	理系向

[授業の概要・目的]

Take the students from the states of matter and the forces that hold matter to the introduction to basic concepts in solid state physics such as crystals structures, lattice vibrations and electron distributions in solids.

[到達目標]

Familiarize students with basic concepts of solid-state materials, particularly semiconductors and metals. The concepts are the required background to more advance lectures.

[授業計画と内容]

Introduction to Solid State Physics (Lecture 1 to Lecture 2)

Crystal structures (Lecture 3 to Lecture 5)

Wave diffraction of the reciprocal lattice (Lecture 6 to Lecture 7)

Crystal binding and elastic constants (Lecture 8 to Lecture 9)

Phonons (Lecture 9 to Lecture 10)

Free electron and Fermi gas (Lecture 11)

Energy bands (Lecture 12 to Lecture 13)

Summary of the course (Lecture 14)

Feedback (Lecture 15)

[履修要件]

特になし

[成績評価の方法・観点]

Evaluation will be based on participation (20%), lecture problems (30%), and final exam (50%).

[教科書]

使用しない

[参考書等]

（参考書）

Bibliography:
- Introduction to Solid State Physics by Charles Kittel (Main reference)
- Solid State Physics by Philip W. Anderson
- Physical Theory of Crystal Lattices by Lev D. Landau and Evgeny M. Lifshitz (Advanced reference)

Introduction to Solid State Physics-E2(2)へ続く↓↓↓

Introduction to Solid State Physics-E2(2)

[授業外学修（予習・復習）等]

Review of the lectures is strongly recommended.

[その他（オフィスアワー等）]

[主要授業科目（学部・学科名）]