

シラバス参照

開講年度/Year	2023
科目名	物質物理学基礎
Course	Lecture on Basic Material Science
曜日・講時/Day/Period	後期 木曜日 2講時
単位数/Credit(s)	2
担当教員/Instructor	若林 裕助
学期/Semester	後期
科目ナンバリング /Course code/number	SPH-PHY507B
使用言語 /Language Used in Course	2カ国語以上
メディア授業科目 /Course of Media Class	

所属講座等	Department of Physics
授業題目	Basic Concepts in Solids
Course Title	Basic Concepts in Solids
授業の 目的と概要	In this course, students will learn fundamental concepts of solid state physics, such as crystal structure, reciprocal space, x-ray diffraction, phonon, band dispersion, Fermi surface, semiconductor, and magnetism.
Purpose /Abstract	In this course, students will learn fundamental concepts of solid state physics, such as crystal structure, reciprocal space, x-ray diffraction, phonon, band dispersion, Fermi surface, semiconductor, and magnetism.
学修の 到達目標	Students will learn fundamental concepts of solid state physics that is prerequisite to their own research.
Goal	Students will learn fundamental concepts of solid state physics that is prerequisite to their own research.
授業内容・ 方法と 進捗予定	This class is open only to students from abroad, therefore expected to be a mini-class. Although the contents may be adjusted for the major of attending students, my plan is to follow the textbook "Solid state physics" written by Ashcroft and Mermin. The behavior of nearly free electrons in periodic potential is the main topic of this class.
Contents and progress schedule of the class	This class is open only to students from abroad, therefore expected to be a mini-class. Although the contents may be adjusted for the major of attending students, my plan is to follow the textbook "Solid state physics" written by Ashcroft and Mermin. The behavior of nearly free electrons in periodic potential is the main topic of this class.
成績評価 方法	Evaluation is performed comprehensively based on class participation, attendance and submitted assignments.
Grading	Evaluation is performed comprehensively based on class participation, attendance and submitted assignments.
教科書 および 参考書	Ashcroft and Mermin, Solid state physics
Books required /referenced	

授業時間外学修 Because of the time limitation, a part of the calculation and derivation will be skipped in the class. Students are required to follow the mathematical detail skipped in the class.

Preparation and review Because of the time limitation, a part of the calculation and derivation will be skipped in the class. Students are required to follow the mathematical detail skipped in the class.

実務・実践的授業
/Practical business
※〇は、実務・実践的授業であることを示す。
/Note: "〇" Indicates the practical business

その他 Lecture style : Face-to-face
Google classroom is also used for providing supporting materials and submitting assignments.
Class code: rtmxe4g

E-mail address: wakabayashi@tohoku.ac.jp

Remarks

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1単位の授業科目は、45時間の学修を必要とする内容をもって構成することを標準としています。1単位の修得に必要な学修時間の目安は、「講義・演習」については15～30時間に授業および授業時間外学修(予習・復習など)30～15時間、「実験・実習及び実技」については30～45時間の授業および授業時間外学修(予習・復習など)15～0時間です。

One-credit courses require 45 hours of study. In lecture and exercise-based classes, one credit consists of 15-30 hours of class time and 30-15 hours of preparation and review outside of class. In laboratory, practical skill classes, one credit consists of 30-45 hours of class time and 15-0 hours of preparation and review outside of class.