

シラバス参照

開講年度/Year	2023
科目名	原子核物理学基礎
Course	Lecture on Basic Nuclear Physics
曜日・講時/Day/Period	後期 金曜日 3講時
単位数/Credit(s)	2
担当教員/Instructor	田村 裕和
学期/Semester	後期
科目ナンバリング /Course code/number	SPH-PHY505B
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	Particle and nuclear physics group
授業題目	Basics of modern nuclear physics
Course Title	Basics of modern nuclear physics
授業の 目的と概要	Nuclear physics is a field in physics which describes and understands quark many-body systems governed by strong interaction including hadrons and atomic nuclei. The mission of nuclear physics is to answer the basic questions on how the hadrons (nucleons) are created from quarks and how atomic nuclei are formed from hadrons in the history of the universe. The course will introduce an overview of nuclear physics nowadays together with recent topics in cutting-edge researches.
Purpose /Abstract	Nuclear physics is a field in physics which describes and understands quark many-body systems governed by strong interaction including hadrons and atomic nuclei. The mission of nuclear physics is to answer the basic questions on how the hadrons (nucleons) are created from quarks and how atomic nuclei are formed from hadrons in the history of the universe. The course will introduce an overview of nuclear physics nowadays together with recent topics in cutting-edge researches.
学修の 到達目標	Obtain overview knowledge of modern nuclear physics
Goal	Obtain overview knowledge of modern nuclear physics
授業内容・ 方法と 進度予定	(1)Building blocks which constitute the matter (Minimum knowledge of elementary particle physics) (2)Evolution of matter in the universe and various types of quark many-body systems (3)Properties and structure of hadrons (4)Nucleons (baryons) and nuclear force (5)Basic properties of nuclei (6)Structure of nuclei
Contents and progress schedule of the class	(1)Building blocks which constitute the matter (Minimum knowledge of elementary particle physics) (2)Evolution of matter in the universe and various types of quark many-body systems (3)Properties and structure of hadrons (4)Nucleons (baryons) and nuclear force (5)Basic properties of nuclei (6)Structure of nuclei
成績評価 方法	Evaluated from attendance record, a report and/or a simple examination
Grading	Evaluated from attendance record, a report and/or a simple examination
教科書 および 参考書	Reference: B. Povh, K. Rith, C. Scholz, F. Zetsche, "Particles and Nuclei –An Introduction to the Physical Concepts", Springer.

Books required /referenced Reference: B. Povh, K. Rith, C. Scholz, F. Zetsche, "Particles and Nuclei –An Introduction to the Physical Concepts", Springer.

授業時間外学修 Students are recommended to have basic knowledge of quantum mechanics and electromagnetism.

Preparation and review Students are recommended to have basic knowledge of quantum mechanics and electromagnetism.

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

その他 Face-to-face in principle  
Class code: rgltxm  
Phone: 022-795-6454  
Email: tamura @ lambda.phys.tohoku.ac.jp  
Home page: <http://lambda.phys.tohoku.ac.jp/>

Remarks

更新日付 2023/03/22 13:17

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.