科目名　Course Title	
量子力学1(Quantum Mechanics I)	
学科・専攻　Department/Program	受講年次　Grade
G30 Chemistry	2nd
授業形態　Class style	必修・選択の別　Compulsory or Elective
講義	* See "Remarks"
時間割コード　Registration code	開講期・曜日・時限　Semester,Day & Period
0681230	春学期 木：5
単位数　Credit	科目区分　Course type
2	Basic Specialized Course

担当教員　Instructor	重森　正樹(SHIGEMORI Masaki)
所属研究室　Laboratory	E-Ken
連絡先　Contact	052-789-2861
居室　Room	ES420

講義の目的とねらい　Course purpose

Quantum mechanics governs the microscopic aspects of nature and is more fundamental than the classical mechanics which is an approximate effective theory describing the macroscopic aspects of nature. This course aims to develop solid understanding and basic knowledge of quantum mechanics, which is absolutely necessary in various fields of modern physics.

We start by introducing fundamental notions such as the wave function and the Schrödinger equation, and familiarize ourselves with them by studying 1-dimensional problems. Then, after developing the formalism of quantum mechanics, we discuss three dimensional problems such as the hydrogen atom.

履修要件　Prerequisite

Fundamentals of Physics I-IV, Analytical Mechanics I, and Mathematical Physics I

履修取り下げについて　Course withdrawal

<可否>　Possible
<条件>
You may withdraw from the course following the standard procedure of the School of Science.

成績評価　Grading

Attendance: 5%, homework: 25%, exams (midterm and final): 30%+30%=70%

不可（F）と欠席の基準　Criteria for "Absent" &"Fail" grades

The “ Absent ” grade is reserved for students who withdraw by the deadline. After that day, a letter grade will be given based on the assessment during the semester.

関連する科目　Related courses

Physics Tutorial IIb (the tutorial for QM I)

教室　Class room

Check the Course Timetable.
ES035

授業内容　Content

1. The wave function
2. The time-independent Schrödinger equation
3. Formalism
4. Quantum mechanics in three dimensions

教科書　Textbook

D. Griffiths, Introduction to Quantum Mechanics, 2nd Ed (Pearson, 2005)

参考書　Recommended reading

- S. Gasiorowicz, Quantum Physics, 3rd edition (John Wiley & Sons)
- J.J. Sakurai, Modern Quantum Mechanics (Addison-Wesley)

連絡方法　Contact method

その他　Remarks

*See Course List and Graduation Requirements for your program for your enrollment year.
*See "Course List and Graduation Requirements" for your program for your enrollment year.
You are required to register for Physics Tutorial IIb (the tutorial for QM I) concurrently, unless you have passed the course.