科目名　Course Title	
物理化学2(Physical Chemistry II)	
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
0681090	春学期 木：2
単位数　Credit	科目区分　Course type
2	Basic Specialized Courses

担当教員　Instructor	PHUNG Quan manh(PHUNG Quan manh)
所属研究室　Laboratory	Quantum Chemistry Laboratory
連絡先　Contact	quan.phung@chem.nagoya-u.ac.jp
居室　Room	B225 (Science Building B)

講義の目的とねらい　Course purpose

The purpose of this course is to learn what physical chemistry is all about and to grasp important principles and facts about physical chemistry. The focus is on statistical thermodynamics and its applications, kinetics, and dynamics of chemical reactions.

履修要件　Prerequisite

Physical Chemistry I

履修取り下げの方法について　How to Apply for Course Withdrawal

<「履修取り下げ届」提出の要・不要 Necessity/Unnecessity to submit "Course Withdrawal Request Form">
Necessary
<条件等 Conditions>
This course uses the course withdrawal system: Need to submit a Course Withdrawal Request Form by the 6th lecture period when students have no intention of finishing a course.

成績評価　Grading

Midterm exam: 100 points, final exam (comprehensive): 200, homework: 100. TOTAL: 400.
Old scheme: Grade "S": 100-90%, "A": 89-80%, "B": 79-70%, "C": 69-60%, "F": 59-0%.
New scheme: Grade "A+": 100-95%, "A": 94-80%, "B": 79-70%, "C": 69-65%, "C-": 64-60% "F": 59-0%.

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

The “ Absent ” grade is reserved for students that withdraw by the 6th lecture period. After that day, a letter grade will be awarded based on grades earned from all assignments during the semester.

関連する科目　Related courses

教室　Class room

Check the Course Timetable.

到達目標　Goal

By the end of this course, students should be equipped with knowledge and skills concerning the following:
1) Calculate thermodynamics quantities with statistical thermodynamics
2) Calculate reaction rates with chemical kinetics
3) Understand what happens to molecules at the climax of reactions with collision and TS theories
4) Understand chemical processes at surfaces

授業内容　Content

1 Statistical Thermodynamics: Introduction
2 More Statistical Thermodynamics - 1
3 More Statistical Thermodynamics - 2
4 The Kinetic Theory of Gases
5 Chemical Kinetics - 1
6 Chemical Kinetics - 2
7 MIDTERM EXAM
8 Reaction Dynamics - 1
9 Reaction Dynamics - 2
10 The Solid State - 1
11 The Solid State - 2
12 Surfaces - 1
13 Surfaces - 2
14 Pre-Final Review
15 FINAL EXAM

教科書　Textbook

David W. Ball: Physical Chemistry, 2nd Ed., Cengage Learning, 2015

参考書　Recommended reading

P. Atkins, J. de Paula & J. Keeler: Atkins’ Physical Chemistry, 11th Ed., Oxford University Press, 2018

連絡方法　Contact method

quan.phung@chem.nagoya-u.ac.jp

その他　Remarks

*See Course List and Graduation Requirements for your program for your enrollment year.
The course might be (partially) online.

Homework is crucial for mastering new material and developing skills in applying concepts. Weekly homework will be either on paper or electronic. Homework is due at the beginning of class on the due date. A general guideline says an average of 2 to 3 hours of study time per week is necessary for each 1 credit hour.

Exams focus on problem-solving, and exam questions will be similar to the homework problems. Exam grades will be posted in the Gradebook on the Course website before the next class period.