

**Physical Chemistry II (01:160:328)**  
**Spring, 2021**  
**Course Description**

**Lectures:** MW 5:00 – 6:20 pm, WebEx (Live Lectures during course time + recorded)

**Recitations:** M 6:25 – 7:20 pm, WebEx (Section 2)  
W 3:35 – 4:30 pm, WebEx (Section 1)  
**First recitation will be on January 25, 2021**

**Lecturer:** Prof. Rick Remsing  
Email: rick.remsing@rutgers.edu  
Office hours: **W 1:30 – 3:00 pm** or by appointment, **WebEx**

**Recitation Instructor:** Prof. Jane Hinch  
Email: jhinch@chem.rutgers.edu  
Office hours: **M 3:00 -4:30 pm** or by appointment, **Canvas Conference**

**TA:** Hussein Hijazi  
Email: hh464@physics.rutgers.edu  
Office hours: by appointment

**Course Textbook:** *Quantum Chemistry & Spectroscopy, Third Edition*  
Thomas Engel, Pearson Education, Inc. (ISBN: 978-0-321-76619-9)

**Other useful textbooks (*not required!*):**

- *Quantum Mechanics: Concepts and Applications, 2<sup>nd</sup> Edition*  
Nouredine Zettili (ISBN: 978-0-470-02679-3)
- *Quantum Chemistry, 2<sup>nd</sup> Edition*  
Donald A. McQuarrie (ISBN: 978-1-891-38950-4)
- *Quantum Mechanics, The Theoretical Minimum*  
Leonard Susskind & Art Friedman (ISBN: 978-0-465-06290-4)

**Materials:** Most sections of Chapters 1-10 and 12; Parts of Chapters 11, 13, and 15

**Exams:** March 1, 2021 and April 14, 2021 (tentative)

**Final Exam:** May 3, 2021 (tentative)

**Quizzes:** There will be four 20-point quizzes given in recitation. The lowest quiz grade will be dropped.

**Homework:** Suggested homework problems relevant to each lecture topic are given on the lecture schedule. Homework will neither be graded nor collected, but quizzes and exams will include problems similar to homework problems. **Even though they will not be graded, doing your homework is key to success!** They will help you learn important concepts and techniques by working out the details.

**Recitation participation:** Attendance at recitations is **required**. In recitation, you will work together in groups on exercises designed to help you master the course material. Up to 40 points will be given for active participation in recitation and for completing and handing in the recitation exercises.

**Grading:** There will be a total of 510 points possible in the course. They are distributed in the following categories:

hourly exams	2 x 100 pts	=	200 pts
final exam		=	200 pts
quizzes	3 x 20 pts	=	60 pts
recitation participation		=	40 pts
lecture participation*		=	10 pts
total		=	510 pts

\* **2 points:** Before 8PM EST on Friday January 29, join the Slack workspace for CHEM328. You will receive a link in your email after the first lecture. You will forfeit these 2 points if you join after the deadline or if you do not join.

\* **8 points:** The remaining 8 points will be based on interactions in one or more of the following: (i) zoom lecture meetings, (ii) slack discussion, or (iii) instructor office hours.

**Academic Integrity:** All University policies on academic integrity will be strictly enforced. Any cheating on quizzes, exams, or other assignments will be treated promptly in strict accordance with the Rutgers University Academic Integrity Policy. A copy of the current Academic Integrity Policy, which went into effect on June 2, 2020, can be found at

<http://nbacademicintegrity.rutgers.edu/home/academic-integrity-policy/>

**Please read the policy carefully if you are not familiar with it.**

### Learning objectives of the course

- Establish a solid understanding of the basic language, principles, and uses of quantum mechanics and spectroscopy, which you should be able to apply in future studies and in your career in science or a related field
- Apply knowledge of quantum mechanics to model systems, atoms, and small molecules
- Form a solid understanding of the fundamentals of vibrational, rotational, and electronic spectroscopy and how they are used to probe atomic and molecular structure
- Develop enhanced analytical reasoning and problem-solving skills