Chemistry 3302
Physical Chemistry II
Spring Semester 2017

Instructor:  Dr. Spiridoula Matsika,
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Office Hours: Mon 1-2pm, Tue, Thu: 1-2pm or by appointment
TAs: Dr. Alexey Filin, e-mail: filin@temple.edu
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Lecture: 9:30 AM 10:50 AM  T R  BE 415
Recitations:  8:00 AM  8:50 AM  M  BE 121
4:00 PM  4:50 PM  W  BE 121
11:00 AM  11:50 AM  R  BE 121

Recommended: Student’s solutions manual to accompany Physical Chemistry 10th ed.
Online textbook resources: http://www.whfreeman.com/pchem10e

Topics:

I. Fundamentals of Quantum Mechanics / Chapter 7
   • The origins of Quantum Mechanics
   • The Schrödinger equation / Wavefunctions / Operators
   • The principles of Quantum Mechanics

II. The Quantum Theory of Motion / Chapter 8
   • Translational motion
   • Vibrational motion
   • Rotational motion

III. Atomic Structure and Spectra / Chapter 9
    • Hydrogenic Atoms
    • Many-electron atoms
    • Atomic spectra

IV. Molecular Structure / Chapter 10
    • Valence-Bond theory
    • Molecular orbital theory
    • Diatomic molecules
    • Polyatomic molecules

V. Rotational and Vibrational Spectroscopy / Chapter 12

VI. Electronic Spectroscopy / Chapter 13

Prerequisites: Chemistry 1032 or 1042 or 1952, Mathematics 1042 and Physics
1061 or 2021 or 2921

Co-Requires: Mathematics 2043 and Physics 1062 or 2022 or 2922

Course Description:
Introduction to the principles of Quantum Mechanics and applications of them to the study of atoms and molecules

Grading:
Weekly Homework or Quizzes: 20%
Midterm 1: 25%
Midterm 2: 25%
Final: 30%

Homework and Exams:
Weekly homework problems will be posted on blackboard and will be collected in class on the due date. Late homework will not be accepted without prior consent of the instructor. Occasionally, quizzes will be held during the recitation.

There will be two midterm exams: the first on 2/17/2017 and the second on 3/30/2017. The final exam will be on 5/4/2017.

Important Dates
First class: Tuesday, January 17
Last day to drop (tuition refund available): Monday, January 30
Midterm Exam 1: 2/17/2017
Spring Break: March 13- March 19
Last day to withdraw (no refund): Wednesday, March 22
Midterm Exam 2: 3/30/2017
Classes End: Monday, May 1.
Final Exam: 5/4/2017

Disability disclosure statement
Any student who has a need for accommodation based on the impact of a documented disability, including special accommodations for access to technology resources and electronic instructional materials required for the course, should contact me privately to discuss the specific situation by the end of the second week of classes or as soon as practical. If you have not done so already, please contact Disability Resources and Services (DRS) at 215-204-1280 in 100 Ritter Annex to learn more about the resources available to you. We will work with DRS to coordinate reasonable accommodations for all students with documented disabilities.

Temple Policy on Student and Faculty Academic Rights and Responsibilities
Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has adopted a policy on Student and Faculty Academic Rights and Responsibilities (Policy # 03.70.02) which can be accessed through the following link:
http://policies.temple.edu/getdoc.asp?policy_no=03.70.02