

**Introductory Physical Chemistry II- Syllabus**  
**Chem-419-010, Spring 2011**  
**Class Meets: TR 5:00 – 6:15 pm**  
**206 Brown Laboratory**

Every student registered for the course is expected to have an e-mail account at the University email server. The current course announcements will be posted on the course Web page and sent via e-mail to every student in the class, in addition to being made during the regular class hours. The students are expected to read their e-mail and visit the web page on a regular basis, especially if they have to miss one or several lectures.

CHEM419 will be examined on March 19 and April 23, during the regular class hours. No exceptions will be made.

**Instructor:** Dr. Tatyana Polenova, Office: 036 Brown Laboratories, **e-mail:** tpolenov@udel.edu  
**Office Hours:** Thursday 3:00 – 4:00 pm  
**Teaching Assistant:** Marlene Yandrisevits (e-mail: marleney@udel.edu)  
**TA Office Hours:** TBA  
(contact the TA by email if you intend to come to office hours)  
**Text:** Thomas Engel, Gary Drobny, Philip Reid “Physical Chemistry: for the Life Sciences”;  
Cecil Dybowski and Andrew Teplyakov “Essential Data and Equations for a Course in Physical Chemistry”;  
James Barrante “Applied Mathematics for Physical Chemistry”  
**Web site:** <https://sakai.udel.edu/portal/site/3865fd29-875f-4e16-be48-4c5c36abeedd#>  
**Grading:** 2 midterms 500 pts (will constitute 25% of the grade each)  
Quizzes 125 pts (will constitute 12.5% of the grade)  
Final 375 pts (will constitute 37.5% of the grade)  
**Grading Policy:** No exams or problem sets are dropped. No make up exams or quizzes or problem sets, and no exceptions to this policy

**Make sure to check the web site regularly: most of the announcements will be posted.**

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**Detailed Syllabus (subject to minor variations)**

**Week 1: Feb 8, Feb 10**

*Principles of Biochemical Thermodynamics*

Read: Chapter 10

**Week 2: Feb 15, Feb 17 (QUIZ 1)**

*Biochemical Equilibria*

Read: Chapter 11

**Week 3: Feb 22, Feb 24 (QUIZ 2)**

*Kinetics: Rates of Chemical Reactions*

Read: Chapter 25

**Week 4: Mar 1, Mar 3 (QUIZ 3)**

*Kinetics: Rates of Chemical Reactions.*

Read: Chapter 25

**Week 5: Mar 8, Mar 10 (QUIZ 4)**

*Kinetics: Complex Biological Reactions; Enzyme Kinetics*

Read: Chapter 26

**Week 6: Mar 15 (Review for Exam 1), Mar 17 (Exam 1)**

*Principles of Biochemical Thermodynamics; Biochemical Equilibria; Kinetics*

Read: Chapters 10, 11, 25, 26

**Week 7: Mar 22, Mar 24 (QUIZ 5)**

*Enzyme Kinetics; Transport Phenomena*

Read: Chapters 26, 24

**Week 8: Mar 29, Apr 1**

*Spring recess, no classes*

**Week 9: Apr 5, Apr 7 (QUIZ 6)**

*Transport Phenomena; From Classical to Quantum Mechanics*

Read: Chapters 24, 12

**Week 10: Apr 12, Apr 14 (QUIZ 7)**

*From Classical to Quantum Mechanics; The Schrödinger Equation*

Read: Chapters 12, 13

**Week 11: Apr 19, Apr 21 (QUIZ 8)**

*Quantum Mechanics of Simple Systems*

Read: Chapter 14

**Week 12: Apr 26 (Review for Exam 2), Apr 28 (Exam 2)**

*Transport Phenomena, From Classical to Quantum Mechanics, The Schrödinger Equation, Simple Systems*

Read: Chapters 24, 12-14

**Week 13: May 3, May 5 (QUIZ 9)**

*Hydrogen Atom and Many-Electron Atoms; Chemical Bonding in Diatomic Molecules*

Read: Chapters 16, 17

**Week 14: May 10, May 12 (QUIZ 10)**

*Polyatomic Molecules; Vibrational and Rotational Spectroscopy; Electronic Spectroscopy*

Read: Chapters 17-19

**Week 15: May 17**

*Review for the final exam*

**Week 15-16: May 19-25**

*The finals week*

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