

PHYSICAL CHEMISTRY II

Spring 2017

Instructor:	Prof. David Coker	Email:	coker@bu.edu
Teaching Fellow:	Thomas Heavey	Email:	theavey@bu.edu
Time:	TR 9:30-10:45	Place:	SCI 117

Course Pages:

1. <http://people.bu.edu/cokergroup/courses.html>
2. learn.bu.edu

Office Hours:

Prof. Coker: By appointment

Thomas Heavey: M 13:30-14:30 SCI 344 and R 11:00-12:00 SCI 200B

Textbooks: The first book is a required textbook, but the second is not and can be used as an extra reference. The course will generally follow the order of the first book listed below.

- Ken Dill and Sarina Bromberg, *Molecular Driving Forces*, Garland Science, 2010.
- Donald McQuarrie and John Simon, *Physical Chemistry*, University Science Books, 1997.

Discussion Sections: (Please note updated locations!)

B1 10:10-11:00 in PSY B40

B2 11:15-12:05 in PSY B55

B3 12:20-13:10 in PSY B40

Objectives: This course is the second in a two part series of undergraduate physical chemistry courses aimed particularly at chemistry majors. Following the basics of quantum mechanics aimed at chemical systems taught in the first portion, this course will start with a treatment of statistical mechanics. Naturally following from statistical mechanics are the basic principles of thermodynamics which will be derived and shown with examples drawn mainly from chemically-relevant systems.

By the end of this course, the students should have an understanding of the basics of physical chemistry sufficient for graduate study in chemistry. This includes the principles of quantum mechanics, theory of spectroscopy, understanding of ensembles, Fermi-Dirac and Bose-Einstein statistics, Gibbs and Helmholtz free energies, enthalpy and entropy, and related principles and physical mathematics.

Prerequisites: This course requires as prerequisites general chemistry, general physics, and calculus of one and multiple variables. A basic understand of probability and statistics is helpful but can be learned during the course.

Grading Policy: Homework and Discussion Quizzes (30%), Exam 1 (20%), Exam 2 (20%), Final (30%).

Important Approximate Dates:

Midterm #1	28 February 2017
Midterm #2	4 April 2017
Final Exam	9 May 2017
	9-11 AM SCI 117

Class Policies:

- Regular attendance is essential and expected.
- Discussion quizzes will help to cement understanding and check on class learning.
- The approximately six homework assignments will be due in class about week after they are assigned.

Academic Honesty: The Boston University Academic Code of Conduct can be found in full online (<https://www.bu.edu/academics/policies/academic-conduct-code/>). This policy will be strictly followed. Students are encouraged to work together on homework, reviewing, and studying, but copying of answers will not be tolerated. Students are expected to do their own work and submit their own answers to the problems, understanding everything they submit. While explaining your work to others can be a great teaching tool to cement your understanding and help the students listening, giving answers to other students is a violation of the Academic Code of Conduct.

Collaboration on exams is not allowed, whether in class or on take-home exams.

Questions about what is allowed and what is not can be brought to the course instructors for clarification.

Disclaimer: This syllabus is subject to change. The most up-to-date version will always be posted on the first course website listed above