

Eastern Kentucky University
Department of Chemistry
Chemistry 570/770, Biophysical Chemistry CRN XXXX
4 Credit Hours
Fall XXXX

Professor:

Phone:

Email:

Office:

Course description:

CHE 570/770 Biophysical Chemistry I. (4) I,II. Prerequisite: CHE 361(C or better), BIO 111 (or higher) (C or better), MAT 124, or MAT 261. Prerequisite or Corequisite: PHY 131 or 201. An introduction to physical and chemical explanations of biological phenomenon and physical chemistry theories and methodologies applied on biological systems. Topics include thermodynamics, chemical equilibrium, kinetics, quantum chemistry, spectroscopy, and selected topics. 6 lec / lab / rec.

Texts:

1. P. Atkins and J. de Paula, *Physical Chemistry for the Life Sciences*, 2nd Ed., W.H. Freeman and Company, New York.
2. Textbook website: -- <http://www.whfreeman.com/pchemls2e/>
3. A scientific calculator.

Student learning outcomes:

Upon completion of this course, students will be able to:

1. Acquire an understanding of the fundamental laws in thermodynamics, chemical equilibrium, and kinetics. (NSTA 1)
2. Gain the knowledge of principles in quantum chemistry, spectroscopy and other selected modern physical chemistry topics. (NSTA 1)
3. Apply general physical laws to specific biological problems to generate quantitative solutions.
4. Exhibit a familiarity to applications of physical chemistry methodologies on biological systems.

In addition to items 1-4 listed above, 770 students will also be able to:

5. Research a current biophysical chemistry topic.
6. Summarize the findings and write a term paper in a scientific journal format.
7. Present the topic orally.

Grading Methods:

This course is designed as a combination of several instructional methodologies. There is no apparent separation of sections between lecture, recitation, and laboratory. Estimated percent of time that will be spent on each methodology: lecture (50%), recitation (25%) and laboratory (25%).

Students are expected to come to all class meeting times, including **12:30-1:45pm on TR**, and **6:00pm-8:45pm on Wednesdays** as well.

Grading:	Categories	570	770
	Attendance/group activities	20%	15%
	Quizzes	10%	10%
	Three in-class exams	45%	45%
	Final exam	15%	15%
	Term paper and oral presentation (770 only)		5%
	Lab performance/Homework	10%	10%
	TOTAL	100%	
		100%	

Your final letter grade will be determined by the following:

A	90%- 100%
B	80%-89%
C	70%-79%
D	60%-69%
F	0-59%

Student progress:

Students are responsible for monitoring their progress in the course as paper are passed back and grades are posted on Blackboard, and EKUDirect.

Attendance:

see attached Departmental Attendance Policy

Blackboard: Course announcements, grades, etc. will be posted on the course web page in EKU Blackboard. You are responsible for checking Blackboard and your EKU e-mail several times daily for information updates. To access Blackboard, go to <http://learn.eku.edu/webapps/login> and login. The login instructions can be found on that page by clicking the link "Student Guide for EKU Blackboard."

Last Date to drop the Course:

See the Colonel's compass

Disability Accommodation statement:

If you are registered with the Office of Services for Individuals with Disabilities, please obtain your accommodation letters from the OSID, present them to the course instructor, and discuss the accommodations needed. If you believe you need an accommodation and are not registered with the OSID, please contact the office in 361 Whitlock Building by email at disserv@eku.edu or by telephone at (859) 622-2933. Upon individual request, this syllabus can be made available in an

alternative format.

A student with a “disability” may be an individual with a physical or psychological impairment that substantially limits one or more major life activities, to include, but not limited to: seeing, hearing, communicating, interacting with others, learning, thinking, concentrating, sitting, standing, lifting, performing manual tasks, working. Additionally, pregnancy accompanied by a medical condition(s), which causes a similar substantial limitation, may also be considered under the Americans with Disabilities Amendments Act (ADAA).

Academic integrity policy:

Students are advised that EKU’s Academic Integrity policy will strictly be enforced in this course. The Academic Integrity policy is available at www.academicintegrity.eku.edu. Questions regarding the policy may be directed to the Office of Academic Integrity.

Tutoring center (NSB 5103):

This free tutoring center is open 9am-5 pm M-F, and regularly staffed with tutors each day. Additional information is available at <http://chemistry.eku.edu/chemistry-tutoring-center-0> You are encouraged to take advantage of the free tutoring service if you need help with this chemistry class. While the instructor is always available for questions during office hours, extra help cannot hurt.

Personal electronics policy: While personal electronic devices have become ubiquitous and seemingly necessary in our daily lives they can hinder instruction and learning, not only for the student using the device but also for other students in the class. And as such their use is prohibited in CHE 570/770 (CRN 12240/12241), unless you are registered with the Office of Services for Individuals with Disabilities and your accommodation necessitate the use of an electronic device. Students will be asked to turn off personal electronic devices if the devices are not being used for class purposes. If the student does not comply, the student may lose the attendance points for that meeting.

Prohibited devices: Cell phones, PDAs, MP3 players and laptop computers.

Official e-mail:

An official EKU e-mail is established for each registered student, each faculty member, and each staff member. All university communications sent via e-mail will be sent to this EKU e-mail address.

Course requirements:

1. **Attendance:** see attached Departmental Attendance Policy.
2. **Activities:** there will be intensive in-class activities such as worksheets, recitation, and oral presentations. Students are expected to actively participate in all in-class activities. Students will be assigned to groups. Students will be given the opportunity to evaluate their group members with regards to their contribution to the group. The instructor reserves the right to

adjust groups. Students will be asked to turn in assignments based on group activities.

3. **Quizzes:** there will be quizzes given typically at the end of each chapter. Quizzes may be given in class, or online through Blackboard.
4. **Homework:** there will be homework given throughout the semester. Due date will be given when homework is assigned. **Late homework will not be accepted.**
5. **In-class Exams:** there will be three in-class exams throughout the semester. No make-up tests will be allowed unless an acceptable excuse is presented. These include: illness, serious family emergency, special curricular requirements, legal reasons, or participation of a university event. You must give the instructor advance notice and present a note from the appropriate official (e.g. doctor).
6. **Term paper and oral presentation (770 only):** students will research a current biophysical chemistry topic, write a term paper and perform an oral presentation of the topic. The due day of the term paper will be the last day of this class .
7. **Final Exam:** There will be a non-comprehensive final exam given at the end of the semester. **No make-up for the final will be available.**

770 only: there will be 1-2 additional questions on each test that is based on additional reading and a deep understanding of the topics.

Course outline:

Chapters 0-2 Exam 1	08/21-09/13 Wed. 09/13, 6:00-7:15pm, in NSB4125
Chapters 3-5 Exam 2	09/15- 10/11 Wed. 10/11, 6:00-7:15pm, in NSB4125
Chapters 6-7 Exam 3	10/13-11/15 Wed. 11/15, 6:00-7:15pm, in NSB4125
Chapters 8-9 Final Exam: Non-Comprehensive	11/17-12/08 Mon. 12/11, 10:30am-12:30pm, in NSB4125

*The instructor reserves the right to adjust the schedule as necessary.

**All exams are close-book, close-notes.