

Biochemistry II

CHE / BIO 483

Spring 2009

Class time: MWF 11:00 - 11:50

Location: SC 402

Instructor: Dr. Stefan Paula
SC 445
paulas1@nku.edu
572-6552

Office hours: W 1:00 – 3:00
F 12:00 – 2:00
or by appointment

Text: *Fundamentals of Biochemistry: Life at the Molecular Level*
3rd Edition by Voet, Voet, & Pratt

Prerequisite: C or better in CHE/BIO 482 (no exceptions)

Course description:

Advanced metabolism: carbohydrate metabolism, citric acid cycle, oxidative phosphorylation, lipid and nucleotide metabolism. Signal transduction. Molecular modeling of ligand/biopolymer interactions.

Departmental Student Learning Outcomes Relevant for this Course:

- explain the major concepts and experimental findings in the chemical sciences
- utilize critical thinking skills to apply concept knowledge and adapt experimental techniques to: a) form and test hypotheses and b) solve scientific problems
- compile, critically evaluate, and interpret scientific information and data
- evaluate the relationships between chemistry and mathematics, physics, biology, and other disciplines and between chemistry and society
- apply computer technology and other technologies in the comprehension, interpretation, and presentation of the chemical sciences

Additional Student Learning Outcomes:

- describe the individual steps of selected major metabolic pathways
- demonstrate familiarity with regulation mechanisms of metabolic pathways
- visualize enzyme/ligand interactions using molecular modeling software
- analyze reaction mechanisms employed by selected enzymes involved in metabolism
- interpret and analyze scientific articles
- understand the underlying theory of techniques commonly used in biochemistry
- develop regular studying habits

Grading:

grade distribution:

3 exams, 20% each	60 %
final exam (M, 05/04/09)	20 %
in-class quizzes	10 %
homework	10 %

grade scale:

A	88 – 100 %
B	76 – 88 %
C	62 – 76 %
D	50 – 62 %
F	0 – 49 %

Exams, homework, quizzes:

There will be three one-hour exams and a comprehensive final exam (M, 05/04/09 from 10:10 - 12:10 pm).

Several homework problem sets will be assigned throughout the semester. They will be posted on Blackboard and collected in class. Late homework will not be accepted for credit.

Several *unannounced* quizzes will be given in class throughout the semester. The quizzes will test the students' knowledge of material covered in the last two lectures and encourage regular studying habits. Questions regarding grading of exams, homework, and quizzes must be submitted to the instructor *within one week* after the work has been returned to students.

Attendance is not taken, but highly recommended. Students are expected to show up for class *on time* and *not leave early*. Students are responsible for the material covered in class and will find it difficult to do well in this course if they do not attend the lectures. *Cell phones* and *paggers* may not be used in class.

Missed Exams/Quizzes:

There are no make-ups for missed exams and quizzes. Missed exams and quizzes will **count as zero**, unless there is a **documented** medical or personal emergency **and the instructor has been notified in a timely fashion**. One quiz can be missed without penalty since the quiz with the lowest score will be dropped at the end of the semester. If one exam is missed because of a documented emergency, the final exam will count 40% instead of 20%.

Blackboard and Molecular Modeling Project:

Since some of the material presented in class and homework assignments will be posted on Blackboard, all students are required to obtain a username and a password. In order to complete the molecular modeling project (counts as two homework sets), access to a computer with the freeware "DeepView" is necessary. Details about the project will be announced in class and posted on Blackboard.

Seminars:

Throughout the semester, students will be given the opportunity to attend seminars on subjects related to this course and write a short, one page report (report form is posted on Blackboard) on the topic presented. Each report is worth as much as one point on a quiz and will be added to the overall quiz score.

Other Information:

The last day to drop the course with an X is February 2nd, the last day to drop with a W is March 30th.

Honesty:

In accordance with the Student Honor Code, cheating will not be tolerated. A student found guilty of violating the code will receive an **F** for the course.

Tentative Schedule of Topics:

<i>Topic</i>	<i>Chapter in Textbook</i>
review of glycolysis	15
glycogen metabolism	16
citric acid cycle	17
Exam 1	
electron transport and oxidative phosphorylation	18
pentose phosphate pathway	15
gluconeogenesis	16
Exam 2	
lipid metabolism	20
nucleic acid structure and metabolism	3, 23, 24
Exam 3	
hormones and signal transduction	13
Final Exam	

This schedule is tentative and subject to change.

Policies of the Department of Chemistry at Northern Kentucky University

All items on syllabi are subject to change by the instructor.

Students are responsible for reading and understanding all items on the syllabi. Any items not understood must be brought to the attention of the instructor within the first two weeks of class.

The work you will do in any course is subject to the Student Honor Code. The Honor Code is a commitment to the highest degree of ethical integrity in academic conduct, a commitment that, individually and collectively, the students of Northern Kentucky University will not lie, cheat, or plagiarize to gain an academic advantage over fellow students or avoid academic requirements.

Cheating will not be tolerated. In accordance with the Code of Student Rights and Responsibilities, faculty members have the right to determine actions to be taken when a student is caught cheating.

Faculty members reserve the right to dismiss or to have removed a disruptive student from their classrooms.

This is a web enhanced course. Students meet at regularly scheduled class time and will need access to the internet to fulfill course requirements.

Students entitled to consideration because of a disability may find policies at <http://www.nku.edu/~disability/>