

NORTHERN KENTUCKY UNIVERSITY
Department of Chemistry
Spring 2005

CHE 115
Physiological Chemistry
1:30
3 Credit Hours
Instructor: Jean Gade, MS, RN
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SC 308
Section 001: 12:15-

Section 002: 4:30-5:45
Office Hours:
TR 9:30-Noon
3:15-4:15
Others by appointment

Course Description:

This is a chemistry course intended for non-science majors, particularly those desiring careers in nursing and allied health-care fields. It will fulfill the general science requirement. The basic tenets of general, organic and biological chemistry are covered from a practical viewpoint, with emphasis on chemical reactions and concepts related to physiologic processes and other phenomena of everyday interest.

Objectives:

Upon completion of this course, the student will demonstrate the ability to:

1. Discuss the basic concepts of (a) general chemistry, including nuclear reactions, (b) organic chemistry, and (c) biological chemistry, including metabolic processes.
2. Identify factors that influence chemical processes.
3. Evaluate the outcomes of chemical processes as they relate to body functions.
4. Discuss the relationship of chemistry to a variety of topics such as health, disease, nutrition and the environment.
5. Evaluate research findings based on chemical concepts that relate to current issues such as health and the environment.

Required Text:

Introduction to General, Organic and Biochemistry, 7th ed. Bettelheim, Brown and March, Brooks/Cole, 2004.

Gade, J., CHE 115, Physiological Chemistry Worksheets, Northern Kentucky University, 2004.

Suggested Texts:

Scovell, W.M., Student Study Guide for An Introduction to General, Organic & Biochemistry, 7th ed., Brooks/Cole, 2004.

Erickson, Brown and Boyer, Student Solutions Manual, Brooks/Cole, 2004.

Prerequisite: High school chemistry or CHE 110 (or equivalent)

Note: It is assumed in this course that you understand the concepts covered in CHs 1 and 2 of your text, as well as most of CHs 3 and 4. These concepts form a foundation for the topics that will be covered in this course. We

will not cover CHs 1 and 2, but you are responsible for information covered there. We will cover CHs 3 and 4, but will do so fairly rapidly, again, assuming it is mostly review for you. If you are not comfortable with the concepts, it is your responsibility to seek assistance.

Course Policies:

Attendance at all class sessions is highly recommended. Although attendance will not be taken, students are responsible for all information and assignments presented in class.

No exam will be dropped (except lowest one -Final **not** included) or excused. Make-up work will be arranged for legitimate medical problems or other extraordinary circumstances, at the discretion of the instructor; the student is responsible for notifying the instructor within 48 hr. of such absences.

Course Requirements:

The student is responsible for knowing the material presented in lecture, worksheets, assigned readings and problems.

The student is expected to attend all lectures, complete worksheets and participate in class discussions.

Problems from the text will be assigned. Although problems will not be turned in or graded, it is strongly advised that you complete them - they are chosen to test your understanding of concepts your instructor expects you to understand; they represent types of questions you will see on exams and some test questions will be taken from these problems. It will be helpful to look at the example problems (with solutions) within the text sections and then try to do the unsolved problems that follow.

Three section exams and a Final will be given; the lowest exam grade (excluding the final exam) will be dropped. Exam grades will constitute 100% of your final grade. Exam questions will cover material presented via lecture, assigned readings and worksheets, class discussions/activities, and assigned problems.

Exams

The best way to prepare for exams is to study your class notes, complete the worksheets, and work the assigned problems. After your exams have been graded, they will be returned to you - you are to correct any mistakes you have made and return the exams to your instructor - if you do not, you will receive a zero for that exam. **No extra credit** is given for doing the corrections - this is part of the exam process, and will help you learn from your mistakes.

Student Honor Code:

"The work you will do in this 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 to avoid academic requirements. You are bound by the Student Honor Code neither to give nor receive any unauthorized aid on examinations, or other work". (Student Handbook or <http://www.nku.edu/~deanstudents/>).

Note: Cheating will not be tolerated! Students found cheating will automatically receive an F for the semester grade.

Grading:

Your grade will be based on your performance on four exams, quizzes, and any extra credit activities that **may** be offered. Grades are **not** based on a curve. Grades are assigned according to the following percentages:

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

CHE 115

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COURSE SCHEDULE

<u>Date</u>	<u>Lecture</u>	<u>CH Sections</u>	<u>CH Boxes</u>
1/11	Introduction/Review		
1/13	CH 3 Bonds	1, 2, 4, 5, 7, 9, 10	A-C
1/18	CH 4 Chemical Reactions	1-8	A-C
1/20	CH 5 Gases, Liquids, Solids	1.6, 5.1-8, 10, 11	A-G
1/25	CH 6 Solutions	1-6, 8	A, B, D, F
1/27	CH 7 Reaction Rates and Equilibrium	1-5, 8	A-D
2/1	CH 8 Acids and Bases	1-4, 6-8, 11, 12	A-D
2/3	CH 8 " "		
2/8	EXAM 1 CHs 3 - 8		
2/10	CH 10 Organic Chemistry	1-4	A
	CH 11 Alkanes & Cycloalkanes	1-3, 5, 6, 8, 9	A, C
2/15	CH 12 Alkenes	1, 4, 6	A, C, D
2/17	CH 14 Alcohols and Ethers	1-6	D
2/22	CH 17 Aldehydes and Ketones	1, 2, 4-6	A
2/24	CH 18 Carboxylic Acids, Esters	1-4, 6, 7	A - F
3/1 & 3/3	CH 16 & 18 Amines and Amides	16.1, 2, 4-6 18.3, 5, 6	16 A - D E
3/8 & 3/10	Spring Break		
3/15	EXAM 2 CHs 10 - 18		

3/17	CH 19	Carbohydrates	19.1-6	A-D
		*First read CH 15 - Chirality - Pay special attention to diagrams and section 15.6.		
3/22	CH 19 & 20	Carbohydrates & Lipids	20.1-5,9-12	20 C - I
3/24	CH 20 & 21	Lipids & Proteins	21.1-9,11	21 A,B,C,D,H
3/29	CH 21 & 22	Proteins & Enzymes	22.1-7	22 A - F
3/31	CH 24	Nucleic Acids	1-6	A,C,D,E
4/5	CH 25	Gene Expression & Protein Synthesis	1-5,7	A,B,C,E-G
4/7	Catch-up/Review			
4/12	EXAM 3	CH 19 - 25		
4/14	CH 26	Bioenergetics	1-7	C
4/19				
4/21	CH 26 - 27	Catabolic Pathways	1-10	27 A,C,F,G
4/26				
4/28	Review			
5/3	FINAL EXAM	CH 26 & 27; Comprehensive		

Important dates: 1/15 Last day to register for a course and to Drop with 100% reimbursement of tuition

1/29 Last day to drop with 50% reimbursement and without a grade recorded

3/28 Last day to drop with grade of W

Note: Schedule subject to change at the discretion of the instructor.