

**Spring 2012**  
**Chem 465 Biochem II**  
**Black Hills State University**  
**M, W, F 1:00-1:50, BJA 109**

**Instructor:** Dr. Micheal Zehfus  
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**Text and material:**

Lehninger Principles of Biochemistry Nelson & Cox Worth

-Additional class material may be obtained either from my Web pages:

[www.bhsu.edu/michealzehfus](http://www.bhsu.edu/michealzehfus) look under **Courses Tab** (note the spelling of micheal)  
or the L: drive Handouts/michaelzehfus

**Description:**

A study of the fundamental principles governing the behavior of biochemical systems. Topics to be covered in the two semester sequence include the study of proteins, lipids, and carbohydrates, metabolic processes, biological oxidation and reduction processes, molecular aspects of DNA replication and repair pathways transcription and RNA processing, and protein translation.

PreRequisite: Chem 464

Corequisite: Chem 465L

Semester hours: 3

**Writing Intensive Requirement:**

This course is used to fulfill the Writing Intensive Requirement for the Chemistry Major.

*Goal:* Students will learn and utilize the language of the discipline, use writing-to-learn techniques to develop ideas and learn content, and understand the audience for, and parameters of, writing done within the student's specific major.

*Student Learning outcomes:* As a result of taking this course the student will:

1. Use writing to learn course content, understand the ideas of the language of chemistry, and discover their own ideas relative to the content of this course.
2. Compose texts within the discipline/area of study of the course, through drafting, revising, and completing a finished product (applying the appropriate style manuals), in order to comprehend more fully the unique nature of knowledge within the chemistry discipline as well as potentially contribute to it.
3. Develop critical thinking skills unique to chemistry and biochemistry.

## Objectives:

This semester we will focus on metabolism and information pathways in the cell. In the section on metabolism we will study the overall principles of bioenergetics, and study the details of glycolysis, gluconeogenesis, the citric acid cycle and oxidative phosphorylation. In the section on information we will examine chromosomal structure, DNA, RNA, and protein metabolism and the regulation of gene expression.

## Course Outline:

Week	Date	Sections of text covered	Writing
0	1/13	Chapter 14	General Intro
1	18, 20	Chapter 14 (skim pentose phosphate pathway)	Writing Intros
2	23, 25, 27	Chapters 14 & 15	1 <sup>st</sup> draft due
3	1/30 2/1, 3	Chapters 15 & 16	2 <sup>nd</sup> draft due
4	6, 8, <b>10</b>	Chapter 16 & 19 (Skip photosynthesis) <b>EXAM I</b>	
5	13, 15, 17	Finish 19	Materials & Methods
6	22, 24	Chapter 24	1 <sup>st</sup> draft M&M due
7	27, 29, 3/2	Chapter 25	2 <sup>nd</sup> draft M&M due
	5, 7, 9	Spring Break	
8	12, 14, 16	Chapter 25 & 26 <b>EXAM II</b>	
9	19, 21, 23	Chapter 26	Abstracts
10	26, 28, 30	Chapter 26	1 <sup>st</sup> draft Abstract
11	2, <b>5</b>	Chapter 27 <b>EXAM III</b>	
12	11, 13	Chapter 27	2 <sup>nd</sup> draft Abstract
13	16, 18, 20	Chapter 28	Results & Discussion
14	23, 25, <b>27</b>	Chapter 28 <b>EXAM IV</b>	

Final Exam: April 30- May 4, see BHSU Master schedule for exact time.

## Evaluation

### *Tests*

Four hour exams are shown on the above schedule. Each hour exam is worth 100 points. The **final** will be a standardized ACS test covering the entire year of biochemistry worth 100 points. At this point I would like to use the following grading scheme:

A	88-100%
B	78-87%
C	63-77%
D	50-62%
F	<50%

This may change if necessary.

### *Writing*

This course includes a writing component. The emphasis will be on writing in a format suitable for publication. Expect to have short writing projects due every week or two. We may come up with other lab reports based on data obtained in Chem 465L, but the writing part of these reports will still be included in your 465 (lecture) grade.

The total points for all writing assignments in aggregate will be equivalent 100 points, or one additional test score.

All writing assignments must be submitted electronically.

### **Homework**

I will assign problems in each chapter. Since you have the answers to all the problems in the back of the book, these will not be graded. Those who have taken this course in the past know that I frequently will include a problem from the text in most exams. If I can come up with some homework problems that do not have answers in the back of the book, I may assign these problems as extra credit.

### **Disabilities**

Reasonable accommodations, as arranged through the Disabilities Services Coordinator, will be provided students with documented disabilities. Contact the BHSU Disabilities Services Coordinator, Mike McNeil, at 605-642-6099, (WA 145) or via email at [mike.mcneil@bhsu.edu](mailto:mike.mcneil@bhsu.edu) for more information. Additional information can also be found at <http://www.bhsu.edu/StudentLife/Learning/DisabilityServices/tabid/162/Default.aspx>

### **Academic Dishonesty**

A student who, in connection with his or her studies, disrupts a class, plagiarizes, cheats, or otherwise violates reasonable standards of academic behavior may, at my discretion, have his or her enrollment canceled and/or be given a reduced or failing grade. For more information on specific acts that can constitute academic dishonesty, see your student handbook.

### **Academic Freedom and Responsibility**

Under Board of Regents and University policy student academic performance may be evaluated solely on an academic basis, not on opinions or conduct in matters unrelated to academic standards. Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled. Students who believe that an academic evaluation reflects prejudiced or capricious consideration of student opinions or conduct unrelated to academic standards should contact the chair of the department in which the course is being taught to initiate a review of the evaluation.