Winter 2020 – Basic Biochemistry I **Chemistry 351 (WS1) Instructor:**
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ITS: http://www.siue.edu/its/ **Blackboard:** https://bb.siue.edu
Office: SLW 3115 **Office phone: (**618) 650-3561
Format: Online Lecture-based **Credits:** 3 hours

Duration: December 16, 2019 – January 5, 2020

Availability: The most effective way to contact the Instructor during this period is by email. Please allow 24-48 hours for an email response. If you do not receive a reply in that time-frame, it is recommended you send a follow up email.

Course Materials:
Textbook Rental and MUC Book Store can ship the books/materials to you if you cannot pick them up on campus. You must contact them to obtain these items and there is a fee associated with this service.

Text Books: Available at Text Book Rental

- "Biochemistry-Concepts and Connections" by Appling, Anthony-Cahill and Mathews; Pearson, 2nd edition, 2019. **This book will be the main text for the course**.
- Additional supplemental material will be uploaded and made available on Blackboard

Overview of Course and Learning Objectives:
In this course you will be introduced to the chemistry of life, Biochemistry. The goal of this course is to build a solid foundation of biochemistry knowledge that includes learning the "language of biochemistry," understanding important concepts that are central to biochemistry, and understanding the role biochemistry plays in our lives.

There will be three primary learning tools for the course:
- Presentation of material in recorded voice over lecture notes
- Mastering chemistry assignments or other (via Blackboard)
- Exams and knowledge assessment will be administered each week
  The material coverage for each exam is outlined in the schedule on p. 4.

By the end of this session you should have a reasonable understanding of the main points covered in this course.

Course Requirements and Expectations:

Blackboard:

You will need access to a computer and Blackboard for this course. Lecture notes and additional course material will be posted to Blackboard. It is recommended that you login to Blackboard frequently as this will be the main Learning Management System for distributing course materials, homework assignments, lectures, etc. Your grades will also be posted here for each assignment and exam. Announcements and other general responses to inquiries will be addressed on Blackboard.

Assignments (40%):

There will be 2-3 homework assignments posted weekly during the winter session that correspond to each "lecture block" (see schedule on p. 4). All assignments must be completed by the end of the week and **BEFORE** the respective exam. Homework may be assigned through the Pearson Mastering system that accompanies the main text OR through Blackboard. Each assignment is worth a total of 100 points.

Late assignments will not be accepted **(after the respective exam deadline has passed)**.

Exams (60%):

A total of **three exams** will be administered over the three-week period (one exam every week). All exams count as 20% of your final grade and are worth a total of 100 points each. Exams will be administered through Blackboard and will consist of a combination of multiple choice, short answer and essay questions. Further instruction and details about exam format will be provided at the time of the exam. You will have a finite amount of time to complete each exam (to be determined), which will be sufficient if you have prepared well. You won't see all of the questions up-front as you navigate through each exam question and you won't be able to go back and provide answers for questions that were left blank or change answers. These measures are necessary to minimize cheating in an online course format.

Grading Policies:
The instructor has the sole discretion to make adjustments to scores or curve final grades at the END of the course. These adjustments will never negatively affect your original score and will only be applied in cases where the Instructor believes it is necessary.

Tentative Grading Scale:

100 - 88 %	A
87 - 76 %	B
75 - 64 %	C
63 - 51 %	D
Below 51%	F

Grade Composition:

Assignments (7)	40%
Exams (3)	60%

There are a total of **1000 points** possible in this course. Your exam scores are more heavily weighted compared to assignments.

*No assignments will be accepted after their respective due dates or after the course has ended on January 5, 2020.

Additional help and tutoring:

Please be aware that extra help may be limited during this period of time. You have signed up for an intense 3-week course of study with the mutual understanding that you are able to keep up with the course work and have made the necessary arrangements with your time to complete all required work to a minimum satisfactory level.

Students with Disabilities:

Southern Illinois University Edwardsville offers a range of resources to support students with disabilities. At SIUE every effort has been made to eliminate barriers to learning and help students reach

their educational goals and personal development. Reaching your goals starts with pre-admission planning and an assessment of your abilities and interests.

The director of the Disability Support Services (DSS) office will develop an understanding of your individual needs through counseling and academic advising. An Illinois Department of Human Resources Office of Rehabilitation Services counselor is also available by appointment on campus to meet you and discuss your university plans and career goals.

Early planning and testing will ensure that your special needs are taken into consideration and that you enjoy your educational experiences at SIUE. Disability Support Services offers to coordinate support services for self-identifies students with permanent or temporary disabilities.

Students must register and request services from the Disability Support Director at the DSS office, which is located in Peck Hall, Room 1311. An individualized accommodation plan is developed according to each student's needs. Requests for services should be made two to four weeks prior to the date that the service is to begin.

Academic Dishonesty: If there is any evidence of cheating taking place during exams the consequences will be handled per University policy. Cheating is forbidden.

Overview of Chapters covered in Appling:

1 Biochemistry and the Language of Chemistry
2 The Chemical Foundation of Life: Weak Interactions in an Aqueous Environment
3 The Energetics of Life
4 Nucleic Acids
5 Introduction to Proteins: The Primary Level of Protein Structure
6 The Three-Dimensional Structure of Proteins
7 Protein Function and Evolution
8 Enzymes: Biological Catalysts
9 Carbohydrates: Sugars, Saccharides, Glycans
10 Lipids, Membranes, and Cellular Transport

Exams Tentative Deadline Schedule:

Exam I	Dec. 22, 2019
Exam II	Dec. 29, 2019
Exam III	Jan. 5, 2020

Exams MUST be completed by the date listed above by 11:59 pm on that day. There are NO MAKEUPS, so please plan accordingly. Due to the compressed winter session schedule there is limited flexibility with these dates, however, you are always welcome to complete the exams before the scheduled deadline.

Lecture Schedule:

A tentative lecture schedule is presented below. There will be a total of 34 pre-recorded lectures each lasting approximately 20-50 minutes. It is recommended that you follow the schedule below to avoid falling behind. You are always encouraged to work ahead as well. Lectures have been pre-recorded and most of them will be available at the start of the Winter session period.

Tentative lecture schedule:

Week	Date(s)	Topic(s) Covered	Appling Text Chapter
1 **(Dec. 16-21)** **Exam I material**	Lectures 1-4	- Course syllabus and expectations - Intro to Biochemistry - Characteristics of living systems - Review of General chemistry and organic Chemistry - Non-covalent interactions/water	Chapter 1 Chapter 2
	Lectures 5-8	- Acid/Base equilibria, pH - Buffers - Thermodynamics * *Assignment*	Chapter 2 Chapter 3
	Lectures 9-12	- Amino acids - Intro to protein primary structure - Primary structure **Assignment*	Chapter 4 Chapter 5
2 **(Dec. 22-28)** **Exam II material**	Lectures 13-16	- Secondary protein structure - Tertiary protein structure - Quaternary protein structure - Hemoglobin **Assignment*	Chapter 6 Chapter 7
	Lectures 17-21	- Protein structure / function (superfamilies) - Mutations and disease - Intro to enzymes (biological catalysts) **Assignment*	Chapter 7 Chapter 8
	Lectures 22-25	- Enzyme kinetics - Inhibition and regulation - Nucleic acids - DNA/RNA structure **Assignment*	Chapter 8 cont. Chapter 4
3 **(Dec.29 – Jan. 5)** **Exam III material**	Lectures 26-30	- Carbohydrates - Lipids **Assignment*	Chapter 9 Chapter 10
	Lectures 31-34	- Membranes - Techniques in Biochemistry **Assignment*	Chapter 10 Chapter 12 (W&W -suppl.)