

# Biochemistry I (CHEM321)

# Fall 2019 Syllabus

**Instructor:** Kristine Olson, Ph.D.

**Office:** 207 Guion

**Email:** [kolson@sbcc.edu](mailto:kolson@sbcc.edu)

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**General Information:** The schedule on this syllabus is subject to change at any time. The instructor will provide email communication to the class if this occurs. Students enrolled in this course are responsible for knowing any information covered during class time, from assignments, and in the textbook.

**Accommodations:** Sweet Briar College is committed to upholding and maintaining all aspects of the federal Americans with Disabilities Act of 1990 (ADA), as amended in 2008, and Section 504 of the Rehabilitation Act of 1973. If you are a student with a disability and wish to request reasonable accommodations, please contact the Office of Accessibility Services [accessibility@sbcc.edu](mailto:accessibility@sbcc.edu) for an appointment. Because many accommodations require early planning, requests for accommodations should be made as soon as possible.

**Course Objectives:** This course aims to provide the student with information concerning biochemical principles as an addition to previous study in the fields of biology/molecular biology and chemistry and in preparation for further study in biochemistry and related fields. The student will be able to utilize the information and skills obtained from this course in understanding fundamental biochemical principles and processes. The student will gain an understanding of chemical vocabulary in the specific sub-discipline of biochemistry and related sub-disciplines. The student will be shown how biochemical concepts are applied in current laboratory techniques and research. The student will be able to apply this biochemical knowledge to understand and evaluate current events and/or literature.

**Course Meetings:** Lectures, Tuesday and Thursday 10:10 – 11:40 a.m. Some lectures may be taught remotely; more details will be given if this occurs.

**Dr. Olson's Office Hours:** I am on campus Tuesday and Thursday mornings for this course. You may speak to me before or after class (I will do my best to accommodate these requests). If you would like to meet for a longer time on Tuesday or Thursday early afternoon, that is possible as long as I am given 24-hour notice and if it does not conflict with my pre-existing work commitments.

**Attendance:** All students are expected to attend all course meetings and will be held accountable for all information presented during these meetings. Students will sign an attendance sheet at the start of each class. Multiple unplanned absences in a given week or one absence per week over a three-week period should be discussed with the professor.

**Course Structure:** Students will be required to fill out an **entrance ticket and exit ticket** answering simple questions (see example at end of syllabus). Students will earn 5 total points for each class that requires these tickets. **The course is set up as 4 units.** Units 1 and 3 will be taught as traditional lecture. Units 2 and 4 will be taught in a flipped-classroom format. For all 4 units, students are responsible for reading the chapter ahead of class time. For Units 2 and 4, students will also annotate the prepared Powerpoint notes while they read.

**Text:** **REQUIRED** Fundamentals of Biochemistry, 5<sup>th</sup> edition (2016), Donald Voet, Judith G. Voet, and Charlotte Pratt, John Wiley and sons Publishers, New York, New York.

**On-Line Homework Supplement:** **REQUIRED** Sapling Learning at [www.saplinglearning.com](http://www.saplinglearning.com)

- If you are taking ONLY CHEM321 (Biochemistry I, Fall 2019), choose single course Sapling access card (ISBN): **9781319080297** Price is \$42
- If you are taking BOTH CHEM321 and CHEM322 (Biochemistry I & II, Fall 2019 and Spring 2020), choose multi-course Sapling access card (ISBN): **9781319080105** Price is \$64

**Homework due dates – check Sapling.**

**Canvas:** Materials for class will be posted on Canvas (lecture notes, syllabus, additional reading, etc.). Your grades will also be recorded on Canvas.

**Activities:** will take place in-class during the flipped session (instead of lecture). Students will work together in randomly assigned groups to complete the activity during the class period(s). The activity will cover concepts from the assigned chapter reading. At the end of class, the groups will briefly report their findings to the rest of the class. Each activity is worth 15 points; maximum amount of points will be gained if the student is actively participating during this time.

**Quizzes:** will be closed-book in-class format. Students will be allotted 20 minutes to complete the quiz.

**Exams:** will be closed-book take-home format. It will be generally signed out on a Thursday, then returned to me the following Tuesday. Exam dates are tentative and will occur shortly after completion of the designated chapters listed.

**Additional Readings:** As presented in class. This may also substitute for a class if we are unable to meet.

**Requirements:** Fulfillment of the course requirements will be satisfied upon completion of three exams, a final cumulative exam, quizzes, online homework, in-class activities, and the entrance & exit tickets, all as scheduled. See attached *Schedule*.

**Grading Policy:** Grades will be assigned on the standard scale described below. Point distribution for each of the course requirements is listed on the syllabus. The total score for the semester will be determined as the sum of all points earned on exams, homework, and quizzes. **Extra credit points** may be earned by a student throughout the semester and added on to her cumulative semester total. These opportunities will be on exams, but you must attempt to answer all regular exam questions before trying the extra credit. Surprise extra credit assignment(s) may potentially arise during the semester.

**Late Policy:** Late assignments will be accepted but will be downgraded as follows:

1 second to 15 minutes	amnesty
15 minutes to 12 hours	5% deduction
12 hours to 24 hours	10% deduction
24 hours to 36 hours	20% deduction
36 hours to 48 hours	30% deduction
48 hours to 1 week	50% deduction
1 week to the end of time	100% deduction

(No exceptions to this late policy are made without notification from the Dean of the College.)

### Point Totals for Semester:

The chart below shows the # of opportunities to earn points in the categories of Homework, Quiz, Exam, Activities, Entrance & Exit Tickets. If you earn extra credit, that will be added to your semester total (or exam, if applicable).

### Keep track of your scores here:

Type of Assignment	Assignment Name	Possible Points	Points Earned	Extra Credit Points (if applicable)
<b>HOMEWORK</b>				
	Learn Sapling/HW 0	15		-
	HW1 (Ch. 1)	15		-
	HW2 (Ch. 2)	15		-
	HW3 (Ch. 3)	15		-
	HW4 (Ch. 4)	-		-
	HW5 (Ch. 5)	-		-
	HW6 (Ch. 6)	-		-
	HW7 (Ch.7)	15		-
	HW8 (Ch. 24)	15		-
	HW9 (Ch. 25)	15		-
	HW10 (Ch. 26)	-		-
	HW11 (Ch. 27)	-		-

ACTIVITY				
	Chapter 4 Activity (Unit 2)	15		-
	Chapter 5 Activity (Unit 2)	15		-
	Chapter 6 Activity (Unit 2)	15		-
	Chapter 26 Activity (Unit 4)	15		-
	Chapter 27 Activity (Unit 4)	15		-
ENTRANCE & EXIT TICKETS (9/24 to 12/5), Ticket = Entrance (3pts) + Exit (2pts)				
	Ticket 1	5		-
	Ticket 2	5		-
	Ticket 3	5		-
	Ticket 4	5		-
	Ticket 5	5		-
	Ticket 6	5		-
	Ticket 7	5		-
	Ticket 8	5		-
	Ticket 9	5		-
	Ticket 10	5		-
	Ticket 11	5		-
	Ticket 12	5		-
	Ticket 13	5		-
	Ticket 14	5		-
	Ticket 15	5		-
	Ticket 16	5		-
	Ticket 17	5		-
	Ticket 18	5		-
	Ticket 19	5		-
	Ticket 20	5		-
QUIZ				
	QUIZ1	15		-
	QUIZ2	15		-
	QUIZ3	15		-
	QUIZ4	15		-
	QUIZ5	15		-
	QUIZ6	15		-
	QUIZ7	15		-
	QUIZ8	15		-
EXAM				
	EXAM1	200		
	EXAM2	200		
	EXAM3	200		
	FINAL EXAM (cumulative)	200		
SEMESTER TOTAL		1200		

60-63 = D-

64-67 = D

68 &amp; 69 = D+

70-73 = C-

74-77 = C

78 &amp; 79 = C+

80-83 = B-

84-87 = B

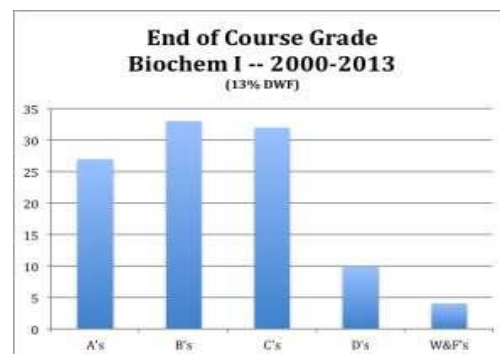
88 &amp; 89 = B+

90-93 = A-

94-100 = A

**To calculate your grade:**

1. Add up Points Earned + Extra Credit = Total Points Earned
2. Then Total Points Earned / 1200 \*100 = Your Percentage
3. Refer to table at left to translate Your Percentage into a letter grade.



## Class Schedule

Quiz and Exam dates are tentative. Check Sapling for the most current homework due dates.

Week	Date	Class Topic & Reading Assignment	Class Time	QUIZ and HW due	Exam Schedule	Ticket?
<b>UNIT 1</b>						
1	9/17	Intro to course, Ch. 1: Intro to Chemistry of Life	Lecture			
	9/19	Ch. 2: Water and Buffers	Lecture			
2	9/24	Ch. 2: Water and Buffers	Lecture			Yes
	9/26	Ch. 3: Nucleotides, Nucleic Acids, Genetic Info	Lecture	QUIZ 1		Yes
3	10/1	Ch. 3: Nucleotides, Nucleic Acids, Genetic Info	Lecture			Yes
	10/3	Ch. 3: Nucleotides, Nucleic Acids, Genetic Info	Lecture	QUIZ 2, HW 0-3 due by 10/8 11:59 p.m.		Yes
<b>UNIT 2</b>						
4	10/8	Ch. 4: Amino Acids	Activity			Yes
	10/10	Ch. 5: Protein Primary Structure	Activity		Exam 1 (Ch 1, 2, 3 handed out 10/10)	Yes
5	10/15	Ch. 6: Protein 3D Structure	Activity	QUIZ 3		Yes
	10/17	Ch. 6: Protein 3D Structure	Activity			Yes
6	10/22	Ch. 6: Protein 3D structure	Activity	QUIZ 4, HW 4-6 optional		Yes
<b>UNIT 3</b>						
	10/24	Ch. 7: Protein Function (sections on myoglobin and hemoglobin only)	Lecture			Yes
7	10/29	Ch. 7: Protein Function (sections on myoglobin and hemoglobin only)	Lecture		EXAM 2 (Ch 4, 5, 6 handed out 10/31)	Yes
	10/31	Ch. 7: Protein Function (sections on myoglobin and hemoglobin only)	Lecture			Yes
8	11/5	Ch. 24: Nucleic Acid Structure	Lecture			Yes
	11/7	Ch. 24: Nucleic Acid Structure	Lecture	QUIZ 5		Yes
9	11/12	Ch. 25: DNA Replication	Lecture			Yes
	11/14	Ch. 25: DNA Replication	Lecture	QUIZ 6, HW 7-9 due by 11/12 11:59 p.m.		Yes
<b>UNIT 4</b>						
10	11/19	Ch. 26: Transcription and RNA Processing	Activity		EXAM 3 (Ch 7, 24, 25 handed out 11/14)	Yes
<b>Schedule continued on next page ...</b>						

	11/21	Ch. 26: Transcription and RNA Processing	Activity	QUIZ 7		Yes
<b>THANKSGIVING BREAK</b>						
11	12/3	Ch. 27: Protein Synthesis	Activity			Yes
	12/5	Ch. 27: Protein Synthesis	Activity	QUIZ 8, HW 10, 11 optional		Yes
12	12/10	Review for final exam				
	12/12	Review – Last Day of Class			Final Exam handed out 12/12	

**This is what the division of workload looks like – it’s the same at home or in class regardless of whether it’s traditional or flipped classroom.**

<p>Traditional (Units 1 and 3)</p> <p><u>At Home</u></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read chapter or parts of chapter before class</li> <li><input type="checkbox"/> Complete online Sapling Homework for corresponding chapters</li> </ul> <p><u>In Class</u></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Entrance Ticket</li> <li><input type="checkbox"/> <u>Powerpoint</u> lecture – we go through the material and you take notes.</li> <li><input type="checkbox"/> Exit Ticket</li> </ul>	<p>Flipped (Units 2 and 4)</p> <p><u>At Home</u></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Read chapter or parts of chapter before class</li> <li><input type="checkbox"/> Read the corresponding <u>Powerpoint</u> lecture; fill in notes if needed</li> <li><input type="checkbox"/> <b>Optional</b> – online Sapling Homework posted for extra practice, but not part of your grade</li> </ul> <p><u>In Class</u></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Entrance Ticket</li> <li><input type="checkbox"/> Group activities will cover the material from the chapter/parts of chapter you read</li> <li><input type="checkbox"/> Exit Ticket</li> </ul>
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**Entrance Ticket for Class (3 total points can be earned)**

Indicate your acknowledgement of this information by signing below and pledging to uphold the Sweet Briar Honor Code:

**Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

1. Did you do the assigned reading before class?
2. List the idea/concept/topic(s) you understood the best and % understanding.\*
3. List the idea/concept/topic(s) you understood the least and % understanding.\*

\* On a scale of 0 to 100%:  
0 = no understanding  
100 = total understanding

**Exit Ticket for Class (2 total points can be earned)**

Indicate your acknowledgement of this information by signing below and pledging to uphold the Sweet Briar Honor Code:

**Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

1. What was the **most interesting** idea/concept/topic today? What was the idea/concept/topic you understood the best today and % understanding.\*
2. What idea/concept/topic is still unclear for you? Assign a % understanding\* If your understanding improved since you arrived at the start of class, state what helped (lecture, activity, Q&A, etc.).

\* On a scale of 0 to 100%:  
0 = no understanding  
100 = total understanding