

**BIOCHEMISTRY 300B**  
**General Biochemistry II**  
**Course Outline: Spring 2019**

**Place:** ECS123  
**Time:** Tuesday, Wednesday, Friday: 12:30 - 1:20 pm  
**Textbook:** Biochemistry by Berg, Tymoczko, and Stryer, 8<sup>th</sup> edition  
**Web site:** UVic CourseSpaces

**Instructors:** **Dr. PJ Romaniuk (Jan 8 – Feb 15).** Office: Petch 223b;  
Office hours: T, W 1:30-2:30 pm (or by appointment);  
email: pjr@uvic.ca

**Dr. A Boraston (Feb 26 – Apr 5),** Office: Petch 216;  
Office hours: T, W 1:30-2:30 pm (or by appointment);  
email: boraston@uvic.ca

**Course Description:** BIOC 300B in conjunction with BIOC300A provides detailed coverage of foundation topics for students majoring in biochemistry or microbiology. In this course, the structures and functions of DNA, RNA and genes are discussed along with the regulation of gene expression in prokaryotes and eukaryotes. Also discussed are metabolic processes and their control. Students need to have a good understanding of the principles of cell biology and organic chemistry before taking this course.

*Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, approach the Resource Centre for Students with a Disability (RCSD) as soon as possible (<http://rcsd.uvic.ca/>.) in order to assess your specific needs.*

**Marking Policy:**

Date	Evaluation type	Percentage final mark
Jan 18	In class group assignment I	10%
Feb 5	In class group assignment II	10%
Feb 8	Take home individual assignment	10%
Feb 15	In class midterm	20%
Mar 6	In class group assignment III	10%
Mar 15	In class midterm	15%
Mar 26	In class group assignment IV	10%
Apr 5	In class midterm	15%

**Students may only bring their calculator, pens, and pencils to the class tests. Students having a cell phone, tablet, or computer on their person during a class test will be assumed to have it for the purpose of cheating. Test papers must be written in indelible ink in order to be reviewed or re-marked.**

**Biochemistry 300B 2018. Lecture Schedule and Topics**

Lect #	Date	Topic	Text Reference
1	Jan 8	Structure of Nucleic Acids	Ch. 4: 105-116
2	9	Flow of Genetic Information	Ch. 4: 117-128
3	11	DNA structure and replication	Ch. 28: pp. 827-845
4	15	Replication	Ch. 28: pp. 827-845
5	16	DNA Repair and Recombination	Ch. 28: pp. 845-854
<b>6</b>	18	<b><i>In-class group assignment I (10%)</i></b>	
7	22	Transcription in Prokaryotes	Ch. 29: pp. 859-870
8	23	Transcription in Eukaryotes	Ch. 29: pp. 871-876
9	25	Post-transcriptional Modification I	Ch. 29: pp. 876-886
10	29	Post-transcriptional Modification II	Ch. 29: pp. 876-886
11	30	Protein Synthesis I	Ch. 30: pp. 893-902
12	Feb 1	Protein Synthesis II	Ch. 30: pp. 902-916
<b>13</b>	5	<b><i>In-class group assignment II (10%)</i></b>	
14	6	Regulation of Gene Expression in Prokaryotes I	Ch. 31: pp. 925-938
<b>15</b>	8	Regulation of Gene Expression in Prokaryotes II <b><i>Take-home Assignment Due in class (10%)</i></b>	Ch. 31: pp. 925-938
16	12	Regulation of Gene Expression in Eukaryotes I	Ch. 32: pp. 941-958
17	13	Regulation of Gene Expression in Eukaryotes II	Ch. 32: pp. 941-958
<b>18</b>	<b>15</b>	<b>Midterm in class period (20%)</b>	
	<b>18-22</b>	<b>Reading Break</b>	
19	26	Metabolism preamble & Bioenergetics	Ch. 15
20	27	Bioenergetics (continued)	Ch. 15
21	Mar 1	Intermediary Metabolism: Glycolysis	Ch. 16: pp. 453-479
22	5	(continued)	
<b>23</b>	<b>6</b>	<b><i>In-class group assignment III (10%)</i></b>	
24	8	Gluconeogenesis	Ch. 16: pp. 479-493
25	12	Citric Acid Cycle	Ch. 17: pp. 497-520
26	13	(continued)	
<b>27</b>	<b>15</b>	<b>Midterm in class period on lectures 18-25 (15%)</b>	
28	19	Chemiosmosis and ATP synthesis	Ch. 18: pp. 525-555
29	20	(continued)	
30	22	Glycogen metabolism	Ch. 21: pp. 615-624
<b>31</b>	<b>26</b>	<b><i>In-class group assignment IV (10%)</i></b>	
32	27	Fatty degradation and Synthesis	Ch. 12: p 347-348 Ch. 22: pp. 639-667
33	29	Fatty degradation and Synthesis (continued)	
34	Apr 2	Lipids, cholesterol and their synthesis	Ch. 12: pp 348-350 Ch. 26: pp 759-770
35	3	Protein and Amino Acid Catabolism	Ch. 23: pp. 673-690
<b>36</b>	5	<b>Midterm in class period on lectures 26-33 (15%)</b>	

**Lecture Content:** Each lecture will conform approximately to the organization used in the text. Additional material and examples may be added by the lecturer and will be posted on CourseSpaces. Readings from the text for each lecture have been assigned and must be read *prior to* the lecture. Information designed to guide students with the readings is available on CourseSpaces. Students are responsible for the lecture material and reading assignments for the in-class tests. **There is no final exam in this course.**

UVic Grading Scheme

<b>A+</b>	90 -100	<b>B+</b>	77 - 79	<b>C+</b>	65 - 69	<b>F</b>	< 50
<b>A</b>	85 - 89	<b>B</b>	73 - 76	<b>C</b>	60 - 64	<b>N **</b>	< 50
<b>A-</b>	80 - 84	<b>B-</b>	70 - 72	<b>D</b>	50 - 59		

**\*\* N grades**

Students who have completed the following elements will be considered to have completed the course and will be assigned a final grade:

**all assignments (group and individual) and in-class tests**

Failure to complete one or more of these elements will result in a grade of “N” regardless of the cumulative percentage on other elements of the course. An N is a failing grade, and it factors into a student’s GPA as 0. The maximum percentage that can accompany an N on a student’s transcript is 49.

**DEPARTMENT INFORMATION AND POLICIES**

1. The Department of Biochemistry and Microbiology upholds and enforces the University’s policies on academic integrity. These policies are described in the current University Calendar. All students are advised to read this section.
2. Cell phones, computers, and other electronic devices must be turned off at all times unless being used for a purpose relevant to the class. Students having a cell phone, tablet, or computer on their person during an exam will be assumed to have it for the purpose of cheating.
3. Any recordings of lectures may only be performed with written permission of the instructor, and are for personal use only. The instructor retains copyright to such recordings and all lecture materials provided for the class (electronic and otherwise); these materials must not be shared or reposted on the Internet.
4. Course materials, such as notes, problem sheets, quizzes, examinations, example sheets, or review sheets, may not be redistributed without the explicit written permission of the instructor.
5. Students are expected to be present for the midterm and final exams. Instructors may grant deferrals for midterm examinations for illness, accident, or family affliction, and students must provide appropriate documentation 48 hours after the midterm exam. The Department of Biochemistry and Microbiology considers it a breach of academic integrity for a student taking a deferred examination to discuss the exam with classmates. Similarly, students who reveal the contents of an examination to students taking a deferred examination are considered to be in violation of the University of Victoria policy on academic integrity (see current University Calendar). Deferral of a final exam must be requested with an Academic Concession form and submitted directly to Undergraduate Records. Deferred final exams for fall term courses will be arranged by the instructor. Deferred final exams for spring term courses will be arranged through Undergraduate Records and must be written before the end of the summer term as stipulated in the University Calendar. **BIOC300B does not have a final exam. Students must complete all assignments and in-class tests to receive a grade other than N. A deferral request for any assignment or test may be granted for illness, accident or family affliction if the student provides appropriate documentation within 48 hours after the assignment or test.**
6. Multiple choice scan sheets for machine scoring (bubble sheets) are considered the authentic exam answer paper and will be retained by the department for 1 year.

7. Professors may refuse to review/remark exams not written in indelible ink. **In BIOC300B, only papers written in indelible ink can be reviewed/remarked.** In addition, requests for review/remark of a midterm exam must be made within one week of the exam being returned. **In BIOC300B, requests for remarking must be made in writing and must be specific in the reason for the request.** Students are expected to promptly pick up midterm exams after marking has been completed, either in class or from the instructor.
8. Examination papers that have pages removed, or are mutilated will not be marked.
9. The instructor reserves the right to use plagiarism detection software or other platforms to assess the integrity of student work.

### **Centre for Accessible Learning**

*Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, approach the Centre for Accessible Learning (CAL) as soon as possible in order to assess your specific needs.*

<https://www.uvic.ca/services/cal/index.php>

### **Course Experience Survey (CES)**

*We value your feedback on this course. Towards the end of term you will have the opportunity to complete a confidential course experience survey (CES) regarding your learning experience. The survey is vital to providing feedback to me regarding the course and my teaching, as well as to help the department improve the overall program for students in the future. When it is time for you to complete the survey, you will receive an email inviting you to do so. If you do not receive an email invitation, you can go directly to your [CES dashboard](#). You will need to use your UVic NetLink ID to access the survey, which can be done on your laptop, tablet or mobile device. I will remind you nearer the time but please be thinking about this important activity*