

**BIOCHEMISTRY 300B**  
**General Biochemistry II**  
**Course Outline: Spring 2017**

**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 4 – Feb 21).** Office: Petch 223b;  
Office hours: W 10:00-11:30 am (or by appointment);  
email: pjr@uvic.ca

**Dr. A Boraston (Feb 23 – Apr 4),** Office: Petch 216;  
Office hours: T, W 1:30-2:30 pm (or by appointment);  
email: boraston@uvic.ca

**Dr. J. Lum (Mar 15- Apr 4),** Office: TBA  
Office hours: **by appointment on campus or at Deeley Centre**  
email: jjlum@bccancer.bc.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:** There will be a **midterm** of 2 hours duration held in the evening of February 21 from 7-9 pm in BWC B150. This midterm will account for 50% of the final grade for the course. This midterm will cover the first half of the course, up to and including the material covered in the lecture on February 10. **Students may only bring their calculator, pens, and pencils to the exam. An information sheet will be provided, attached at the end of the test paper. Students having a cell phone, tablet, or computer on their person during the midterm 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 remarked.**

**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. The lecture schedule given below is a close approximation of what will be followed. 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 midterm and final exams.

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

Lect #	Date	Topic	Text Reference
1	Jan 4	Course Overview	
2	6	Structure of Nucleic Acids	Ch. 4: 105-116
3	10	Flow of Genetic Information	Ch. 4: 117-128
4	11	DNA structure and replication	Ch. 28: pp. 827-845
5	13	Replication	Ch. 28: pp. 827-845
6	17	DNA Repair and Recombination	Ch. 28: pp. 845-854
7	18	Transcription in Prokaryotes	Ch. 29: pp. 859-870
8	20	Transcription in Eukaryotes	Ch. 29: pp. 871-876
9	24	Post-transcriptional Modification I	Ch. 29: pp. 876-886
10	25	Post-transcriptional Modification II	Ch. 29: pp. 876-886
11	27	Protein Synthesis I	Ch. 30: pp. 893-902
12	31	Protein Synthesis II	Ch. 30: pp. 902-916
13	Feb 1	Regulation of Gene Expression in Prokaryotes I	Ch. 31: pp. 925-938
14	3	Regulation of Gene Expression in Prokaryotes II	Ch. 31: pp. 925-938
	7	Regulation of Gene Expression in Eukaryotes I	Ch. 32: pp. 941-958
15	8	Regulation of Gene Expression in Eukaryotes II	Ch. 32: pp. 941-958
16	10	<i>In class review of practice midterm</i>	
17	<b>13-17</b>	<b>Reading Break</b>	
<b>T1</b>	<b>21</b>	<b>Midterm (2 hours in evening 7:00-9:00 PM; Jan 4-Feb 10 topics) NO CLASS TODAY</b>	
18	22	Metabolism preamble	
19	24	Bioenergetics	Ch. 15
20	28	Bioenergetics (continued)	Ch. 15
21	Mar 1	Intermediary Metabolism: Glycolysis	Ch. 16: pp. 449-474
22	3	(continued)	
23	7	Gluconeogenesis	Ch. 16: pp. 476-489
24	8	Glycogen metabolism	Ch. 21: pp. 617-627
25	10	Fatty Acid Degradation and Synthesis	Ch. 12: pp 343-344
26	14	(continued)	Ch. 22: pp. 643-673
27	15	Citric Acid Cycle	Ch. 17: pp 494-518
28	17	(continued)	
29	21	Chemiosmosis and ATP synthesis	Ch. 18: pp. 523-552
30	22	(continued)	
31	24	Lum – special topic 1	
32	28	Lipids, cholesterol and their synthesis	Ch. 12: pp 344-346 Ch. 26: pp 767-779
33	29	Protein and Amino Acid Catabolism	Ch. 23: pp. 681-699
34	31	Boraston – special topic 2	
35	Apr 4. <b>TBD</b>	Final lecture and CES <b>Final Exam 50% (Feb 22-Apr 4 topics)</b>	

**FINAL EXAM**

The final exam for this course will be given during the regularly scheduled exam period, and will count for 50% of the final mark. This exam will cover the material discussed in Lectures 18-34 (along with the associated assigned reading materials).

**UVic Grading Scheme**

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

**midterm and final exams**

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. **(Deferred final exams in BIOC300B will be written during the summer exam schedule, typically in late July/early August).**
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 Department reserves the right to use plagiarism detection software or other platforms to assess the integrity of student work

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

*We value your feedback on this course. Towards the end of term, as in all other courses at UVic, you will have the opportunity to complete a confidential survey regarding your learning experience (CES). The survey is vital to providing feedback to us regarding the course and our 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. Please ensure that your current email address is listed in MyPage (<http://uvic.ca/mypage>). If you do not receive an email invitation, you can go directly to <http://ces.uvic.ca>. You will need to use your UVic netlink ID to access the survey, which can be done on your laptop, tablet, or mobile device. We will remind you and provide you with more detailed information nearer the time but please be thinking about this important activity during the course.*