

**BIOCHEMISTRY 300B**  
**General Biochemistry II**  
**Course Outline: Spring 2015**

**Place:** ECS123  
**Time:** Tuesday, Wednesday, Friday: 12:30 - 1:20 pm  
**Textbook:** Biochemistry by Berg, Tymoczko, and Stryer, 7<sup>th</sup> edition  
**Web site:** UVic CourseSpaces

**Instructors:** **Dr. PJ Romaniuk (Jan 6 – Feb 20).** Office: Petch 223b;  
Office hours: T,W,F 9:30-11:00 am (or by appointment);  
email: bioc300b@uvic.ca

**Dr. A Boraston (Feb 24 – Apr 1),** 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.

**Marking Policy:** There will be **two class tests** held during the regular lecture period on **January 23 and March 17**. The first class test will cover the material discussed in lectures 1-8 (worth 25% of the final grade), and the second will cover the material discussed in lectures 17-25 (worth 25% of the final grade). **Students may bring their calculator, pens, pencils and a one page hand written “cheat sheet” on the form provided on CourseSpaces to the class tests. Students must hand in their cheat sheet along with their test. 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 written in pencil will not be reviewed or regraded.**

**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 class tests.

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

<b>Lect #</b>	<b>Date</b>	<b>Topic</b>	<b>Text Reference</b>
1	Jan 6	Structure of Nucleotides and Nucleic Acids	Ch. 4: 109-118
2	7	Flow of Genetic Information I	Ch. 4: 118-127
3	9	Flow of Genetic Information II	Ch. 4: 127-135
4	13	DNA structure and replication	Ch. 28: pp. 819-837
5	14	Replication	Ch. 28: pp. 819-837
6	16	DNA Repair and Recombination	Ch. 28: pp. 837-846
7	20	Transcription in Prokaryotes	Ch. 29: pp. 851-863
8	21	Transcription in Eukaryotes	Ch. 29: pp. 864-869
<b>T1</b>	<b>23</b>	<b>Class Test I (25%) Lectures 1-8</b>	
9	27	Post-transcriptional Modification	Ch. 29: pp. 869-876
10	28	(continued)	Ch. 29: pp. 876-882
11	30	Overview of Gene Regulation	Ch. 31: pp. 921-933
12	Feb 3	Regulation of Transcription in Prokaryotes	Ch. 31: pp. 921-933
13	4	Regulation of Transcription in Eukaryotes	Ch. 32: pp. 937-951
S1	6	<i>Independent Study Period (no lecture)</i>	
	<b>9-13</b>	<b>Reading Break</b>	
14	17	Protein Synthesis	Ch. 30: pp. 887-899
15	18	Protein Synthesis (continued)	Ch. 30: pp. 899-914
16	20	Post-transcriptional Regulation	Ch. 31: pp. 951-954
17	24	Metabolism preamble	
18	25	Bioenergetics	Ch. 15
19	27	Bioenergetics (continued)	Ch. 15
20	Mar 3	Intermediary Metabolism: Glycolysis	Ch. 16: pp. 453-479
21	4	(continued)	
22	6	Gluconeogenesis	Ch. 16: pp. 479-493
23	10	Glycogen metabolism	Ch. 21: pp. 615-624
24	11	Citric Acid Cycle	Ch. 17: pp. 497-520
25	13	(continued)	
<b>T3</b>	<b>17</b>	<b>Class Test II (25%) Lectures 17-25</b>	
26	18	Chemiosmosis and ATP synthesis	Ch. 18: pp. 525-555
27	20	(continued)	
28	24	Fatty degradation and Synthesis	Ch. 12: p 347-348
29	25	(continued)	Ch. 22: pp. 639-667
30	27	Lipids, cholesterol and their synthesis	Ch. 12: pp 348-350 Ch. 26: pp 759-770
31	31	Protein and Amino Acid Catabolism	Ch. 23: pp. 673-690
32	Apr 1	To Be Determined	

### 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. Although this exam will primarily focus on the material discussed in Lectures 9-16 and 26-32 (along with the associated assigned reading materials), **students are responsible for all material covered in the entire course.**

#### 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 **</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:**

- **Both class tests scheduled for Jan 23, Mar 17 (50%)**
- **The final exam (50%)**

**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 O. 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 plagiarism and cheating. 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. 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.

5. Scan sheets for multiple choice exams (bubble sheets) will not be made available for review. Therefore, in addition to filling in answers on the scan sheet, students should also circle their answers in ink on their exam.
6. Professors may refuse to review/remark exams not written in ink. In addition, requests for review/remark of a midterm exam must be made within one week of the exam being returned. Students are expected to promptly pick up midterm exams after marking has been completed, either in class or from the instructor.
7. Examination papers that have pages removed, or are mutilated will not be marked.