**Biochemistry 202**

Course Outline

# Summer Session Term 1: May 6, 2019 – June 20, 2019

**Calendar**

**Description: BIOC 202-951 – Introductory Medical Biochemistry (3 credits):** Introduction to proteins and enzymes, carbohydrate metabolism, and glucose homeostasis. The course emphasis is on human biochemistry and it is designed for students going into health science fields. Credit will be granted for only one of BIOC 202 or BIOC 203 or BIOL 201. **[3-0-1].**

**Prerequisite**:

Either (a) CHEM 203 or (b) CHEM 233 or (c) all of CHEM 233, PHAR 220.

For option (a), a corequiste of CHEM 213 is required.

For option (b), a corequiste of CHEM 205 is required.

**Equivalents**: BIOC 203, BIOL 201.

**Lectures:** MWF, 10:00-12:50

 Woodward (Instructional Resources Centre-IRC) 6

**Dates:**

Before Midterm Exam (Section I): May 6, 8, 10, 13, 15, 17, 22, 24

After Midterm Exam (Section II): May 29, 31, June 10, 12, 14, 17, 19

**Tutorials:** W & F, 13:00-14:00

 Woodward (Instructional Resources Centre-IRC) 6

 ***Tutorials are optional***

**Dates:**

Before Midterm Exam (Section I): May 8, 10, 15, 17, 22, 24

After Midterm Exam (Section II): May 29, 31, June 12, 14, 19, ***21\****

**\*** The ***review tutorial*** on June 21 will be held in ***Earth Sciences Building*** *(****ESB) 1012*.**

**Textbook:** *Recommended* Lehninger: Principles of Biochemistry (Seventh edition), Worth Publishers, 2017.

Also available as looseleaf package with portal. *Website*: <https://www.macmillanlearning.com/catalog/Product/lehningerprinciplesofbiochemistry-seventhedition-nelson>

*Older 6th and 5th editions will suffice.*

*Free online textbook:* http://biochem.science.oregonstate.edu/biochemistry-free-and-easy

**Instructor: Dr. Michael J. Krisinger (Course Chair, Lectures #1-15)**

 Copp Building, Room 4207

 Tel: 827-1700; Email: mikekrisinger@hotmail.com

 Office Hours: MWF 14:00-15:00 or by appointment

**Teaching Assistants:**

**Peter M. Grin (Section I)**

 peter.grin@alumni.ubc.ca

 Office Hours (Q and A sessions): WF 14:00-15:00 (in IRC6)

**Kazune Tamura (Section II)**

kazune.tamura@msl.ubc.ca

Office Hours (Q and A sessions): WF 14:00-15:00 (in IRC6)

**Key Dates:** Victoria Day (***no class***): Mon, May 20th, 2019

Midterm exam: Mon, May 27th, 2019 from 10:00 – 13:30

 UBC congress (***no classes***): June 3-7, 2019

Final Exam: to be announced (June 24 to 28, 2019)

**Exams: Exam Location Weight**

Midterm Exam: CHBE 101 45% of final grade

Final Exam (non-cumulative): TBA 55% of final grade

**CANVAS:** Please login to the course web page: <https://canvas.ubc.ca> for other important announcements. Here you will also find **problem sets**, **lecture slides & notes** and a link to the **PIAZZA** discussion board.

IMPORTANT NOTICE REGARDING EXAMINATIONS:

Both prescribed examinations – Midterm Exam and Final Exam – are mandatory. Students who miss a midterm or final examination will have a zero recorded as their mark for that exam. The situations in which a score of zero may be avoided are those for which the student meets all of the following conditions:

1. Circumstances clearly and absolutely beyond the control of the student caused the examination to be missed. Such circumstances include serious illness or injury, or death of a close family member. They do **NOT** include forgetting about the test, lack of preparation for the test, work-related or social obligations.

2. The student has notified the instructor about the missed examination. Such notification MUST occur in advance, if possible, or at the latest, on the day of the examination.

3. Proof of the circumstance is provided.

Students that miss the **midterm** examination because of medical problems and want to be granted a deferred midterm exam will **have to** provide **a certificate of illness within 5 days** of the exam. The treating doctor (at Student Health Service or any private clinic) is the only one who can document your illness. Any documentation has to be faxed directly from the attending doctor to the instructor (Attn Dr. Krisinger) at 604-822-5227. Deferred examinations will be performed on a date set by the instructor.

If these conditions are met, the student will be permitted to take a deferred examination that will be performed on a date and format (**oral** or perhaps written) set by the instructor.

Students that miss the **final** examination need to report to the Dean’s office in their area of study. For Science students information can be found at: <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1462>.

**Final examination period**: Students should not book airline tickets until the definitive final exam schedule has been posted, as preliminary schedules are often changed.

**June examinations are June 24-28 (inclusive).**

**Course Outline and *Tentative* Lecture Schedule:**

**Section I: lectures 1-7**

**Section II: lectures 8-15**

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| Date | **Lecture** | **Topic** |
| May 6, 2019 | 1 | Introduction, Review of basic chemistry |
| May 8, 2019 | 2 | Amino acid & protein structure |
| May 10, 2019 | 3 | Protein structure |
| May 13, 2019 | 4 | Enzyme thermodynamics & kinetics  |
| May 15, 2019 | 5 | Enzyme kinetics & inhibition |
| May 17, 2019 | 6 | Protein catalysis: Chymotrypsin & Protein function: Hemoglobin |
| **May 20, 2019** |  | **HOLIDAY – No lecture** |
| May 22, 2019 | 7 | Introduction to metabolism, ATP, Carbohydrates (***end of midterm material***) |
| May 24, 2019 | 8 | Glycolysis |
| May 27, 2019 |  | Midterm Exam (45% of final course grade) |
| May 29, 2019 | 9 | e- carriers, Glycolysis regulation, Pyruvate dehydrogenase |
| May 31, 2019 | 10 | Krebs cycle, Oxidative phosphorylation  |
| **June 3-7, 2019** |  | **UBC Congress – No lectures** |
| June 10, 2019 | 11 | ATP synthase |
| June 12, 2019 | 12 | Regulation of Oxidative phosphorylation, Glycogen metabolism |
| June 14, 2019 | 13 | Gluconeogenesis, Ketone bodies |
| June 17, 2019 | 14 | Fuel Metabolism: integration and regulation  |
| June 19, 2019 | 15 | Fuel Metabolism: integration and regulation, Diabetes, Wrap-up |
| **June 24-28, 2019** |  | **Final Exam (55% of final course grade): specific date TBA** |