

**School of Kinesiology
Faculty of Health Sciences
Western University**

**EXERCISE BIOCHEMISTRY
Kin 3360B
Winter, 2019**

Instructor:

Course Format:

Lectures held on Monday, Wednesday and Friday from 12:30 p.m. – 1:30 p.m.

may be necessary for the student to readjust/modify their personal schedule to accommodate the midterm. A missed midterm or final examination without appropriate documentation will result in a “zero” grade (note: attending athletic team practice is not an a_

2. **Grades:** Where possible assignment objectives and rubrics will be posted on OWL. Assignments will be returned to students. The final examination will not be returned but students are able to view their exams by making an appointment with the GTA. Should you have a concern regarding the grade you received on an assignment or final examination or feel that it is unfair in

4. **Examination Conflict Policy:** Please see the Office of the Registrar policy on Exam Conflict and Multiple Exam Situations www.registrar.uwo.ca/examinations/exam_schedule.html

5. **Classroom Behaviour:** Class will begin promptly at the time specified in this syllabus. In the event that you must arrive late, please enter the classroom with a minimal disturbance to the class. The course instructor or GTAs reserve the right to lock the classroom door and deny entrance if lateness becomes a common occurrence. Excessive talking during class time is disruptive, disrespectful, and will not be tolerated. Students engaging in such behaviour may be asked to leave the room. Cellular phones, pagers, and text-messaging devices are disruptive when they ring in class. If you must bring these with you, please place them on silent mode or turn them off during class. Failure to do so may result in your being asked to leave.

6. **Electronic Device Usage:**

During Lectures and Tutorials: Although you are welcome to use a computer during lecture and tutorial periods, you are expected to use the computer for scholastic purposes only, and refrain from engaging in any activities that may distract other students from learning. From time to time, your professor may ask the class to turn off all computers, to facilitate learning or discussion of the material presented in a particular class. **Unless explicitly noted otherwise, you may not make audio or video recordings of lectures nor may you edit, re-use, distribute, or re-broadcast any of the material posted to the course website.**

During Exams - Unless you have medical accommodations that require you to do so, or explicit permission from the instructor of the course, you may not use any of the following electronic devices during ANY of the tests, quizzes, midterms, examinations, or other in-class evaluations: cellphones, smart phones, smart watches, smart glasses, audio players or recorders of any sort, video cameras, video games, DVD players, televisions, laptop/notebook/netbook computers, flashlights or laser pointers.

7. **Health and Wellness:** As part of a successful undergraduate experience at Western, we encourage you to make your health and wellness a priority. Western provides several on-campus health-related services to help you achieve optimum health and engage in healthy living while pursuing your degree. For example, to support physical activity, all students receive membership in Western's Campus Recreation Centre as part of their registration fees. Numerous cultural events are offered throughout the year. Please check out the Faculty of Music web page (<http://www.music.uwo.ca/>), or the McIntosh Gallery <http://www.mcintoshgallery.ca/>

Further information regarding health and wellness-related services available to students may be found at <http://www.health.uwo.ca/>.

Students who are in emotional/mental distress should refer to Mental Health@Western (<http://www.health.uwo.ca/>) for a complete list of options about how to obtain help.

STUDENT CODE OF CONDUCT

The purpose of the Code of Student Conduct is to define the general standard of conduct expected of students registered at Western University, provide examples of behaviour that constitutes a

breach of this standard of conduct, provide examples of sanctions that may be imposed, and set out the disciplinary procedures that the University will follow. For more information, visit <http://www.uwo.ca/univsec/board/code.pdf>

ENGLISH PROFICIENCY FOR THE ASSIGNMENT OF GRADES

Visit the website <http://www.uwo.ca/univsec/handbook/exam/english.pdf>

SUPPORT SERVICES

There are various support services around campus and these include, but are not limited to:

1. Student Development Centre -- <http://www.sdc.uwo.ca/ssd/>
2. Student Health & Wellness -- <http://www.health.uwo.ca/>
3. Registrar's Office -- <http://www.registrar.uwo.ca/>
4. Ombuds Office -- <http://www.uwo.ca/ombuds/>

TENTATIVE Course Schedule (2018-2019)
(tentative schedule only topics subject to change)

Tentative Course Outline &/or Proposed Topics To Be Covered:

1. Amino acid, peptides and proteins
 - The nature of amino acids
 - Characteristics of peptides
 - Structure of proteins

2. Water & acid-base balance
 - Properties of water
 - Acid-base dependent and independent variables
 - Strong and weak acids
 - Strong ions (and the strong ion difference); weak acids and proteins; and CO₂

3. Enzymes
 - Enzymes as catalysts
 - Rates of enzymatic reactions
 - Enzyme inhibition
 - Regulation of enzyme activity
 - Provision of reactive groups by cofactors
 - Oxidations and reductions

4. Bioenergetics
 - Free Energy
 - Energy-rich phosphates
 - Energy systems

5. Carbohydrate metabolism
 - Carbohydrates
 - Cellular uptake of glucose
 - Phosphorylation of glucose
 - Glycolysis
 - Glycogen metabolism (glycogen synthesis; glycogenolysis)
 - Regulation of glycogen/glucose metabolism (in muscle and liver)
 - Pyruvate/Lactate metabolism and transport
 - Oxidation of cytoplasmic NADH and shuttle systems
 - Gluconeogenesis
 - Regulation of gluconeogenesis
 - Pentose Phosphate Pathway

6. Oxidative phosphorylation
 - Overview
 - Mitochondria

