

University of Toronto Scarborough – Department of Biological Sciences
BIOC13 – Biochemistry II: Bioenergetics and Metabolism – Summer 2015

Course Instructor: **Dr. Jason Brown**
Office: SW563B
Email: nysuloem.brown@utoronto.ca
Office Hours: Tuesdays 8-11am (in my office)
 Tuesdays 11am-1pm (near HW Tim Hortons)
 Wednesdays 9am-12pm (near HW Tim Hortons)
 Wednesdays 12-2pm (in my office)

Teaching Assistant: **Dr. Fraser Soares**
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Course Description: A lecture course that introduces cellular metabolism, the process by which living organisms extract and utilize energy from their environment. Topics include: bioenergetics; oxidative phosphorylation; aspects of carbohydrate, lipid and amino acid metabolism; regulation of metabolism; and, the integration of metabolic pathways.

Prerequisites: BIOB10Y3 (or BIOB10H3 and BIOB11H3), CHMB41H3, CHMB42H3

Exclusions: CHMB62H3, BCH210H, BCH242Y, BCH310H, (BGYC13H3)



Sustainability: This course is recognized as a UTSC Green Course which has steps in place to reduce the amount of course-generated paper, encouraging students to print multiple slides per page, double-side printing or using scrap paper.

Lectures: Tuesdays 6:10-9pm, SW128; please be aware that I will most often use the entire lecture period, though we will have breaks every hour or so.

Lecture notes will be posted (in PowerPoint format only) on Blackboard ~24 hours before each lecture. By the end of each week (i.e., Friday), an *optional* quiz based on the week's lecture will be posted on Blackboard. The quiz will allow students to i) assess their basic understanding of the lecture content, ii) think critically and creatively about lecture content, as well as apply lecture content to novel situations and problems, and iii) prepare for Term Tests and Final Exam. Students are strongly encouraged to discuss these quizzes with the course instructor when they encounter any difficulties, whether by email or during office hours.

Textbooks: I do not “teach from a textbook”. There will be no assigned readings from any textbook, and only material covered in class will be subject to examination; however, in my experience, many students enjoy having a textbook to supplement their lecture notes. If you so desire, I would recommend the following textbooks:

Principles of Biochemistry, 5th ed., Moran et al.

*Copies of this textbook are available in the campus bookstore.

Bioenergetics 4, Nicholls and Ferguson

*An e-book version of this textbook is available **for free** via the UTSC library’s website. UTSC’s license agreement with the publisher of this textbook permits students to use this textbook for course study but does not permit me to post any content of this textbook to Blackboard.

I will post suggested readings from these textbooks, where applicable, on Blackboard; however, these textbooks may discuss material not covered in lecture, and I may discuss material in class not covered by the textbook. **You are responsible for all material covered in class only.**

Evaluation:

Term Tests	35%	(23% best; 12% worst)
Journal Club	30%	(2% intro blog; 5% x 5 best blogs; 3% summative presentation)
Final Exam	35%	

Important Notes Regarding Evaluations:

Term Tests

The dates of the Term Tests will be determined by the Registrar’s office during the first few weeks of the semester, and I will post the dates on Blackboard as soon as they are available. The lectures covered on each Term Test will be announced in class and on Blackboard. Term Tests will comprise of multiple choice, fill-in-the-blank, and short answer questions. Students will have some choice with regards to which questions they answer (e.g., answer 20 out of 25 multiple choice questions). A large proportion of the Term Test questions will require students to think critically and creatively about the lecture content as well as apply the lecture content to novel situations and problems. The optional online quizzes will help students prepare themselves to tackle such questions successfully. Additional office hours (both in-person and online via Blackboard Collaborate) will be made available during the week prior to the Term Tests. A student’s best Term Test will be worth 23% of their final grade, and their worst Term Test will be worth 12% of their final grade.

If you know *in advance* that you cannot write a Term Test at the scheduled time because it conflicts with some other valid activity, please notify me as soon as possible so that we can make arrangements for you to write the Term Test at an alternative time.

If you miss a Term Test due to medical illness, then you must submit a detailed UTSC Medical Certificate filled out by the physician who saw you. This note must be submitted to the course instructor as soon as possible following the Term Test. Other medical notes will not be accepted, and if the UTSC Medical Certificate is not completed to the satisfaction of the course instructor, it may be refused. The UTSC Medical Certificate can be found via the following link:

http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf.

If you miss a Term Test for any other valid reason, please consult with the course instructor as soon as possible. The course instructor will determine whether the reason given for a missed Term Test is valid in accordance with university policies. Also, the course instructor may ask for any documentation required to verify the reason given.

Students who miss one Term Test for a valid reason (medical or otherwise) will not be permitted to write a make-up Term Test; rather, the weight of the remaining Term Test will be increased to 35% of their final grade. Students who miss both Term Tests for valid reasons will not be permitted to write make-up Term Tests; rather, the weight of their final exam will be increased to 65% and they will be asked to submit an additional written assignment worth 5%.

Students who miss a Term Test for any invalid reason will receive a grade of zero for that Term Test.

Journal Club

The details of the Journal Club will be outlined in a PowerPoint presentation given during the first class. This presentation will be posted on Blackboard along with this syllabus and will constitute part of this syllabus.

Final Exam

The Final Exam (3 hours) will be scheduled by the Registrar's office (August 7-20) and will be worth 35% of the final grade. The Final Exam will cover all material covered in the lectures throughout the course, though it will place emphasis on the material covered since the last Term Test. It will have the same format as the Term Tests.

Tentative Schedule:

WEEK	LECTURE	JOURNAL CLUB
May 5	Introduction to the Course; Fundamental Concepts	Introduction to Journal Clubs
May 12	Glycolysis	Introductory Journal Club Meeting
May 19	Glycogen Metabolism & Gluconeogenesis	Journal Club 1
May 26	Citric Acid Cycle	Journal Club 2
Jun 2	Chemiosmotic Theory	Journal Club 3
Jun 9	Electron Transport Chains: Respiration	Journal Club 4
Jun 16	READING WEEK	
Jun 23	Electron Transport Chains: Photosynthesis	Journal Club 5
Jun 30	ATP Synthesis	Journal Club 6
Jul 7	Electron Transport Chains: ROS Production	Journal Club 7
Jul 14	Lipid Metabolism: Fatty Acid Oxidation	Journal Club 8
Jul 21	Lipid Metabolism: Triacylglycerol, Fatty Acid, & Steroid Synthesis	
Jul 28	Nitrogen & Amino Acid Metabolism	Journal Club Summative Presentations

Accessibility Needs:

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, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or ability@utsc.utoronto.ca.

Academic Integrity:

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's *Code of Behaviour on Academic Matters* (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

- In papers and assignments:*
- using someone else's ideas or words without appropriate acknowledgement
 - submitting your own work in more than one course without the permission of the instructor
 - making up sources or facts
 - obtaining or providing unauthorized assistance on any assignment.
- On tests and exams:*
- using or possessing unauthorized aids;
 - looking at someone else's answers during an exam or test
 - misrepresenting your identity
- In academic work:*
- falsifying institutional documents or grades
 - falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. There are other offences covered under the Code, but these are the most common. ***Please respect these rules and the values that they protect.***