AMBROSE UNIVERSITY COLLEGE | FACULTY OF ARTS & SCIENCE

COURSE INFORMATION SHEET

BCH 297
Introductory Biochemistry
(Tentative course outline and schedule for Winter 2013)

Course description

This course will study the structure and function of carbohydrates, amino acids, proteins, lipids, and enzymes, along with an introduction to metabolism and energy transduction.

Further course information

Biochemistry explores the chemical makeup and reactions that are essential for life processes. The course will introduce the students to the composition of carbohydrate, protein, lipid and nucleic acids as well as the metabolism of these compounds. The course laboratory component will introduce students to some fundamental biochemistry experiments that will aid in the comprehension of the concepts covered during lectures. Students taking this course are required to enroll in Bch 297L, which encompass the laboratory accompaniment for this course.

Class schedules:

Lectures: A2141. Wednesdays and Fridays, 2:30 – 3:45 pm
Laboratory: A2151. Wednesdays, 4:00 – 6:30 pm

Instructor Information

Instructor: Jessmi Ling PhD
Office: A2158
Telephone: 1-403-410-2000 ext. 2919
Email: jling@ambrose.edu

Course prerequisites: Biology 131 and 133, Chemistry 251

Course objectives

It is the aim of the course that students acquire the following skills:

1. Understand the chemistry of important biological macromolecules.
2. Understand the principles of enzymatic activities and analysis.
3. Comprehend various metabolic pathways and appreciate its complexity, network and proper regulation.

Required textbook

McKee T and McKee JR. Biochemistry: the molecular basis of life. 5th Edition. 2011. Oxford University Press. New York.

Attendance

There are no penalties for non-attendance for lectures or tutorials. Marks are awarded to tutorial assignments. However, attendance is compulsory for all laboratory, tests and exams. Allocated marks will not be awarded if student is absent from any laboratory, tests or exams without notice and sufficient reason.

Tentative schedule for lecture, laboratory and tutorials:

The laboratory component consists of wet lab experiments as well as tutorials. Lab reports and tutorial assignments are due at midnight two weeks after the laboratory experiment or tutorial. Electronic submissions (via email) are preferred. Late submissions are subject to deduction of 20% of earned marks per week.

Date	Topic	Chapter
Jan 9	Introduction to the course	1
Jan 11	Water and energy	2 and 3
Jan 16	The biochemistry of genetics Lab 1: Bioinformatics Term paper instructions.	17, 18 and 19
Jan 18	Amino acids, peptides and proteins	5
Jan 23	Enzymes I: what are enzymes and how are they studied? Lab 2: Protein concentration	6.1-6.3
Jan 25	Enzymes II: How enzymes work?	6.4 and 6.5
Jan 30	Test 1 Tutorial 1	
Feb 1	Carbohydrates	7
Feb 6	Carbohydrate metabolism Lab 3: Enzyme activity	8
Feb 8	Aerobic metabolism I	9
Feb 13	Aerobic metabolism II Tutorial 2	10
Feb 15	Photosynthesis	13

Feb 19-23	Mid-semester break	
Feb 27	Global Impact Community Day (No classes)	
Mar 1	Test 2	
Mar 6	Lipids and membranes Lab 4: Protein purification (rGFP)	11
Mar 8	Lipid metabolism: Fatty acids and triacylglycerols	12.1
Mar 13	Lipid metabolism: Membrane lipids and isoprenoids Tutorial 3	12.2 and 12.3
Mar 15	Nitrogen metabolism I: Fixation	14.1
Mar 20	Nitrogen metabolism I: Amino acids Lab 5: Specific activity	14.2 and 14.3
Mar 22	Nitrogen metabolism II: Protein turnover and degradation	15
Mar 27	Integration of metabolism Tutorial 4	16
Mar 29	Good Friday (No classes)	
Apr 3	Term paper presentations. Term paper due.	
Apr 5	Test 3	
Apr 12	Final Exam. 9:00 am at A2141.	

Mark distribution:

Bch 297	Term paper	5%
	Tests (3 × 15%)	45%
	Final exam	30%
	Bch 297L	20%

Bch 297L	Bioinformatics assignment (Lab 1)	8%
	4 laboratory reports (4 × 15%)	60%
	4 Tutorial assignments (4 x 8%)	32%

The term paper is an extension of the bioinformatics assignment from Bch 297L. Evaluation of the term paper comprises of a short presentation and a written assignment.

Tests consist of short answer questions based on topics covered during lectures. These tests are not cumulative. The final exam will consist of multiple-choice questions, short and long answer questions. Questions will be based on topics covered during lectures, labs and corresponding chapters from the required textbook. The final exam will cover topics from the whole course (cumulative). There is no final exam for the laboratory component. Study guides for tests or exams will not be provided in this course. Students are encouraged to make their own lecture notes to summarize the course material. Students are also encouraged to keep up with the readings, preferably reading the corresponding chapter before each lecture.

Grading scheme:

A+	93 – 100%	C+	66 – 69%
A	86 – 92%	C	62 – 65%
A−	82 – 85%	C−	58 – 61%
B+	78 – 81%	D+	54 – 57%
B	74 – 77%	D	50 – 53%
B−	70 – 73%	F	Below 50%

Important dates:

Convocation Chapel: Thursday, January 10.

Registration revision period: Wednesday, January 10 – Sunday, January 20.

Last day to enter course without permission; last day to withdraw from a course, change to audit, and receive tuition refund: Sunday, January 20.

Returning Scholarship application available: Wednesday, January 30.

Returning Scholarship application deadline: Tuesday, February 26.

Community Day (Program Day): Thursday, January 31.

Global Impact Community Day: Wednesday, February 27.

Legacy Youth Conference: Friday, March 15 – Sunday, March 17.

Last day to withdraw from courses without academic penalty: Friday, March 22.

Ambrose Research Conference: Monday, March 25.

Registration period commences: Monday, April 1.

Last day to request revised time for a final exam: Monday, April 1.

Last day to apply for time extension for coursework: Monday, April 1.

Last day of classes: Tuesday, April 9.

From the registrar:

Electronic Etiquette

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to engage in electronically-enabled activities unrelated to the class during a class session. Please turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Please do not use iPods, MP3 players, or headphones. Do not text, read or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. The professor has the right to disallow the student to use a laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Student Handbook and Academic Calendar. Personal information, that is information about an individual that may be used to identify that individual, may be collected as a requirement as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@ambrose.edu.

Extensions

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a "Course Extension" from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the appropriate deadline (as listed in the Academic Calendar http://www.ambrose.edu/publications/academiccalendar). Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

Academic Integrity

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University College as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to give credit to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university college. Students are expected to be familiar with the policies in the current Academic Calendar and the Student Handbook that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

Students are advised to retain this syllabus for their records.