



COURSE INFORMATION SHEET

BCH 297

Introductory Biochemistry

(Tentative course outline and schedule for Winter 2011)

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: A2145. Wednesdays and Fridays, 2:30 – 3:45 pm
Laboratory: A2151. Wednesdays, 4:00 – 6:30 pm

Instructor Information

Instructor: Dr. Jessmi Ling
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. 4th Edition. 2009. 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:

Date	Topic	Chapter
Jan 12	Course introduction	1
Jan 14	The importance of water	3
Jan 19	Energy	4
Jan 21	Amino acids and peptides	5.1 - 5.2
Jan 26	Proteins	5.3
Jan 28	Enzymes I	6.1 - 6.3
Feb 2	Enzymes II	6.4 - 6.5
Feb 4	Carbohydrate I	7.1 - 7.3
Feb 9	Carbohydrate II	7.4 - 7.5
Feb 11	Carbohydrate metabolism I	8.1 - 8.2
Feb 16	Carbohydrate metabolism II	8.3 - 8.5
Feb 18	Aerobic metabolism I	9
Feb 22-26	Mid-semester break	
Mar 2	Aerobic metabolism II	10
Mar 4	Lipids	11.1
Mar 9	Global impact day (no class or lab)	
Mar 11	Lipids and membranes	11.2
Mar 16	Lipid metabolism I	12.1
Mar 18	Lipid metabolism II	12.2 - 12.3
Mar 23	Photosynthesis	13
Mar 25	Nitrogen metabolism I	14

Mar 30	Nitrogen metabolism II	15
Apr 1	Integration of metabolism	16
Apr 6	Nucleic acids	17
Apr 8	Lab test for Bch 297L	
Apr 13	No class	
Apr 20	Final exam (Room 2145; 1 – 4 pm)	

Tentative schedule for the laboratory component (Bch 211L):

The laboratory component consists of wet lab experiments as well as tutorials. The tutorials are designed to supplement the lecture component and broaden the knowledge in laboratory applications. Lab reports are due at midnight on Jan 26 for Lab 1, Feb 9 for Lab 2, Mar 2 for Lab 3, Mar 30 for Lab 4 and Apr 13 for Lab 5. Electronic submissions (via email) are preferred. Tutorial assignments are due at 4 pm on Feb 9 for Tutorial 1, Mar 16 for Tutorial 2 and Apr 13 for Tutorial 3. Late submissions are subject to deduction of 20% of its allocated marks per week. Please collect all tutorial assignments by 2 pm, Friday, April 15.

Date	Topic
Jan 19	Lab 1: Protein concentration
Jan 26	Tutorial 1: Proteins and enzymes
Feb 2	Lab 2: Enzyme activity
Feb 9	Test 1 (Chapters 1, 3 – 6)
Feb 16	Lab 3: Protein purification (rGFP)
Mar 2	Tutorial 2: Carbohydrate and lipids
Mar 16	Test 2 (Chapters 7 – 11)
Mar 23	Lab 4: Specific activity
Mar 30	Tutorial 3: Photosynthesis and nitrogen metabolism
Apr 6	Lab 5: Carbohydrates
Apr 13	Test 3 (Chapters 12 – 17)

Mark distribution:

Bch 297	Tests (2 x 15%)	30%
	Test (1 x 5%)	5%
	Final exam	40%
	Bch 297L	25%
Bch 297L	5 laboratory reports	50%
	3 tutorial assignments	15%
	Lab test	35%

Two hours are allocated for each test. 2.5 hours are allocated for the final exam, while the final exam for Bch 297L is 1.5 hours. Tests will consist of short answer questions based on topics covered during lectures. The tests are not cumulative. The higher scores in two of the three tests will each carry 15% of the total course marks. The lowest test score will carry 5% of the total course marks. The final exam will consist of multiple-choice questions, short and long answer questions. Questions will be based on topics covered during lectures and corresponding chapters from the required textbook. The final exam will cover topics from the whole course (cumulative). 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:

Last day to enter course without permission; last day to withdraw from a course, change to audit, and receive tuition refund – Friday, January 21.

Scholarship application deadline – Monday, February 28.

Last day to withdraw from courses or change to audit without academic penalty – Friday, March 18.

Registration period commences – Monday, March 28.

Registration deadline for returning student scholarship eligibility – Thursday, March 31.

Last day to request revised time for a final exam – Monday, April 4.

Last day to apply for time extension for coursework – Monday, April 4.

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.