

STUDIES IN THE BIOLOGICAL SCIENCES INVOLVE THE USE OF LIVING AND DEAD ORGANISMS. Students are expected to be familiar with <http://www.ucalgary.ca/pubs/calendar/current/sc-5-1.html> of the on-line calendar.

See also <http://www.ucalgary.ca/pubs/calendar/current/e-5.html>.

10. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- (a) **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties.
- (b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).
- (c) **Academic Accommodation Policy:** Students with documentable disabilities are referred to the following links: Students with Disabilities: <http://www.ucalgary.ca/pubs/calendar/current/b-1.html> [B.1](#) and Student Accessibility Services: <http://www.ucalgary.ca/access/>.
- (d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 403-220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- (e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also <http://www.ucalgary.ca/secretariat/privacy>.
- (f) **Student Union Information:** VP Academic Phone: 403-220-3911 Email: suvpaca@ucalgary.ca.
SU Faculty Rep. Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca; [Student Ombudsman](#)
- (g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.
- (h) **U.S.R.I.:** At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference - please participate in USRI Surveys.

Department Approval _____ ORIGINAL SIGNED _____ Date _____

DEPARTMENT OF BIOLOGICAL SCIENCES

COURSE OUTLINE

BIOCHEMISTRY 341

BIOCHEMISTRY OF LIFE PROCESSES

TERM: Winter 2015 SECTION NO: 01

PREREQUISITE(S): Chemistry 351

A student may not register in a course unless he/she has a grade of at least C- in the prerequisite course.

ANTIREQUISITE(S): Credit for both Biochemistry 341 and 393 will not be allowed.

Note: This course will not serve as a prerequisite for advanced chemistry courses or certain biochemistry or cellular, molecular and microbial biology courses.

COURSE COORDINATOR: Dr. R.A. Edwards

Instructors: Dr. R.A. Edwards BI 443 403-220-5350 redwards@ucalgary.ca
Dr. M.E. Fraser BI 413 403-220-6145 frasm@ucalgary.ca

LAB COORDINATOR: Dr. R.A. Edwards

LECTURES: MWF 13:00 SA 129

LABS: 01 T 09:30 BI 117
02 T 14:00 BI 117
03 T 18:00 BI 117

TEXT: Required: Biochemistry: A Short course, Tymoczko, Berg, and Stryer, W. H. Freeman and Company & Sons, 2nd edition.

*Laboratory exercises: will be uploaded on Desire 2 Learn, along with lecture notes.

MARK DISTRIBUTION: A. Composition of Final Grade

Midterm Exam I	20%
Midterm Exam II	20%
Laboratory work (6 labs x 3% per lab)	18%
Quizzes (6 x1% each)	6%
Final Examination	36%

B. Final Exam

There will be a final examination scheduled by the Registrar's Office.

C. Components of course for which a passing grade is essential

Laboratory Work \geq 58%

D. Grade Scale

\geq 86% \rightarrow A
82% \rightarrow A-
78% \rightarrow B+
74% \rightarrow B
70% \rightarrow B-
66% \rightarrow C+
62% \rightarrow C
58% \rightarrow C-
54% \rightarrow D+
50% \rightarrow D
<50% \rightarrow F

BCEM341 Winter 2015: Tentative Lecture Schedule

DATE	TOPIC	Instructor	
Jan.	12	Introduction to the Course and Lipids	MEF1
	14	Lipids in Membranes	MEF2
	16	Carbohydrates – Monosaccharides	MEF3
	19	Carbohydrates – Linking Monosaccharides	MEF4
	20	Tuesday - Lab 1: Lipids	MEF
	21	Amino Acids – Structures and Properties	MEF5
	23	Peptides and Proteins - Peptide Bond and Primary Structure	MEF6
	26	Peptides and Proteins - Secondary Structure	MEF7
	28	Peptides and Proteins - Tertiary and Quaternary Structure	MEF8
	30	Carbohydrates Attached to Proteins and Proteins that Bind Carbohydrates	MEF9
Feb.	2	Membranes, including Membrane Proteins	MEF10
	3	Tuesday - Lab 2: Food Chemistry (Proteins and Carbs in Beer)	MEF
	4	Basic Concepts about Enzymes	MEF11
	6	Enzyme Kinetics	MEF12
	9	Enzyme Kinetics – Allosteric Enzymes	MEF13
	11	Enzyme Mechanisms and Inhibitors	MEF14
	13	In Class: First Midterm –12 lectures, 2 labs (Jan. 12 – Feb. 6) MEF1–MEF12	
		Reading Week *** No Lectures***	
	23	Classes of Enzymes. Example of a Hydrolase: Chymotrypsin	MEF15
	24	Tuesday - Lab 3: Enzymatic Activity of β-Galactosidase	MEF
	25	Example of an Allosteric Protein: Hemoglobin	MEF16
	27	Digestion: Turning a Meal into Cellular Biochemicals	MEF17
Mar.	2	Basic Concepts of Metabolism	RAE1
	4	Fermentation	RAE2
	6	Glycolysis and Regulation	RAE3
	9	Gluconeogenesis	RAE4
	10	Tuesday - Lab 4: A Metabolically Reversible Reaction	RAE
	11	Bridge Reaction & Overview of the Citric Acid Cycle	RAE5
	13	The Citric Acid Cycle	RAE6
	16	Ox Phos: The Electron Transport Chain	RAE7
	18	Ox Phos: ATP Synthesis	RAE8
	20	In Class: Second Midterm – lectures and labs, Feb. 9 – Mar. 13, MEF 13-17, RAE 1-8	
	23	Nucleic Acids: Base Pairing, the Double Helix and DNA packaging	RAE9
	24	Tuesday - Lab 5: Aerobic and Anaerobic Metabolism	RAE
	25	DNA Replication	RAE10
	27	DNA Repair and Recombination	RAE11
	30	Transcription of DNA = Synthesis of RNA	RAE12
Apr. 1	1	Gene Expression in Eukaryotes	RAE13
	3	Good Friday *** No Lectures***	
	6	RNA Processing in Eukaryotes	RAE14
	7	Tuesday - Lab 6: DNA Cleavage & Electrophoresis	RAE
	8	The Genetic Code and tRNA	RAE15
	10	Translation of RNA	RAE16
	13	Recombinant DNA Techniques	RAE17
	15	Synopsis and Review	

Final Exam Scheduled by the Registrar.