

#### UNIVERSITY OF CALGARY FACULTY OF SCIENCE DEPARTMENT OF BIOLOGICAL SCIENCES COURSE OUTLINE

# 1. Course: BIOCHEMISTRY 575 - LIPIDS

Lecture Sections: L01	TR	11:00-12:15	SA 015		WINTER 2015
Instructor(s):	Dr. E.J. Prenner Dr. V. Zaremberg		BI 145A BI 390	220-7632 220-4298	eprenner@ucalgary.ca vzarembe@ucalgary.ca

Course website or Desire 2 Learn (D2L) course name: Bcem 575

Biological Sciences Department BI 186; (403) 220-3140; biosci@ucalgary.ca

2. PREREQUISITE(S): Biochemistry 393 or 443

See section 3.5.C in the Faculty of Science section of the online Calendar (http://www.ucalgary.ca/pubs/calendar/current/sc-3-5.html)

3. Grading: The University policy on grading and related matters is described sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Midterm Exam	34%
Tutorial/Participation	32%
Final Exam	34%

"Each piece of work (assignment, laboratory report, midterm test or final examination) submitted by the student will be assigned a percentage score. The student's average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade."

- 4. Missed Components of Term Work: The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in Section 3.6. It is the student's responsibility to familiarize himself/herself with these regulations. See also Section E.6 of the University Calendar
- 5. Scheduled out-of-class activities: Dates and times of approved class activities held outside of class hours.

### **Midterm March 05**

## IN CLASS

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY. If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. Course Materials: N/A

**Online Course Components:** List online tools being used in the class outside of those provided by the University course Management system and Top Hat classroom response system. Note: Top Hat is allowed for all classes and may be used for grades. Instructors using Top Hat should plan to accommodate students who do not have access to a cell phone or portable computing device. Course components that are free to all students and that are not dependent on prior accesses are allowed. Those with APPROVED associated optional or mandatory course fees must be listed in section 8.

- 7. Examination Policy: Midterm exam does not require any aids, the final exam is open book. Students should also read the Calendar, Section G, on Examinations.
- 8. Writing across the curriculum statement: e.g. "In this course, the quality of the student's writing in laboratory reports will be a factor in the evaluation of those reports." See also Section E.2 of the University Calendar.

9. Human studies statement: indicating whether students in the course may be expected to participate as subjects or researchers. See also Section E.5 of the University Calendar.

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

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

## **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: <u>http://www.ucalgary.ca/pubs/calendar/current/b-1.html B.1</u> and Student Accessibility Services: <u>http://www.ucalgary.ca/access/</u>.
- (d) Safewalk: Campus Security will escort individuals day or night (http://www.ucalgary.ca/security/safewalk/). Call 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 <u>http://www.ucalgary.ca/secretariat/privacy</u>.
- (f) Student Union Information: VP Academic Phone: 220-3911 Email: suvpaca@ucagary.ca. SU Faculty Rep. Phone: 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\_\_\_\_\_

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# **Tentative Lecture Plan**

Week#1	1		
Jan.	13	Course introduction and organization	EP/VZ
	13	no tutorial	
	15	Introduction to lipid and lipid structure	lecture EP
	15	no tutorial	
Week#2	2		
Jan.	20	Properties of membrane lipids and bilayers	lecture EP
	20	no tutorial	
	22	Model Systems	lecture EP
	22	no tutorial	
<b>W</b> 1 #/	<b>,</b>		
Week#: Ian	י 77	Models systems cont	lecture FP
Juli	27	Tutorial-1-group-1	
	29	Biophysical methods	lecture EP
	29	Tutorial-1group-2	
Week#4	4		1 ( 50
Feb	3	Permeability and electrical properties	lecture EP
Feb	5	Iutorial 2 paper 1-1 Membrane potentials	lecture FP
100.	5	Tutorial 2: paper 1-2	
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Week#5	5		
Feb.	10	Membrane Fusion	lecture EP
	10	Tutorial 3 paper 2-1	
	12	Lipid signaling (ceramide)	lecture EP
	12	rutoriar 5. paper 2-2	
Week#6	5		
Feb.	24	Biomembrane and mem genesis	lecture EP
	24	Tutorial 4: paper 3-1	
	26	Antimic	lecture EP
	26	Tutorial 4: paper 3-2	
Wook#	7		
Mar.	03	Antimic and Pathogensis	lecture EP
1.1411	03	Tutorial	1000010 21
	05	Midterm exam Material EP	
	05	no tutorial	
	-		
Week#	5 10	Linid motabolism. Fotty opids	locturo VZ
Iviai	10	no tutorial	lecture vZ
	10	Fatty acid elongation and desaturation- Beta oxidation	lecture VZ
	12	no tutorial	
Week#9	)		
Mar.	17	Lipid metabolism- Phospholipid	lecture VZ
	17 19	no tutorial TAG-sphingolinids-cholesterol	lecture V7
	19	no tutorial	
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Week#1	10		
Mar.	24	Glycerolipids-bacteria	lecture VZ
	24	Tutorial 5 Paper 4-1	1
	26	1 oois and techniques for analysis of lipids- Phospholipid turnover	lecture VZ
	20	Tutorial 5 Paper 4-2	

Week	#11		
Mar.	31	TBA	lecture VZ
	31	Tutorial 6 Paper 5-1	
Apr	02	Bioactive lipids	lecture VZ
	02	Tutorial 6 Paper 5-2	
Weeka	#12		
Apr.	07	Cellular cholesterol: compartmentalization and trafficking I	lecture VZ
	07	Tutorial 7 paper 6-1	
	09	Cellular cholesterol: compartmentalization and trafficking II	lecture VZ
	09	Tutorial 7 paper 6-2	
Week	#13		
Apr.	14	Lipid rafts	lecture VZ
_	14	Tutorial: lecture Lipid signaling in disease- lipid drugs	lecture VZ

# FINAL EXAM SCHEDULED BY THE REGISTRAR

# Grade Scale

A+	92
А	86
A-	82
B+	78
В	74
B-	70
C+	66
С	62
C-	58
D+	54
D	50
F	<50