

BIOCHEMISTRY 409: Proteomics COURSE OUTLINE – FALL 2022

Proteomics & Metabolomics

The objective of this course is to examine in detail the use of proteomics and metabolomics in advanced biological applications.

Instructor: Dave Goodlett

Coordinator: Dr. David R. Goodlett

Petch 179b down by the loading dock
goodlett@uvic.ca

Office Hours: Monday 12:30-1:30 PM and Thursday 12:00-1:00 PM or by appointment.

Schedule: Monday and Thursday 10:00 am – 11:20 pm, ELL 062.

Readings: Any readings will be posted on the course web site.

Textbook: none required.

Topics (with dates)

CLASS	DAY	DATE	LECTURE	TOPIC	LECTURER	EXAM	points/exam
1	Thursday	8-Sep-22	1	INTRODUCTION TO MASS SPECTROMETRY	GOODLETT	exam 1	
2	Monday	12-Sep-22	2	MASS ANALYZERS MALDI & TOF	SMITH	exam 1	
3	Thursday	15-Sep-22	3	MASS ANALYZERS ESI & QUADS - TRAPS	SMITH	exam 1	
4	Monday	19-Sep-22	4	PROTEOMICS - BASICS & HISTORY	GOODLETT	exam 1	
5	Thursday	22-Sep-22	5	PROTEOMICS - QUANTITATION & Top down	GOODLETT	exam 1	
6	Monday	26-Sep-22	6	PROTEOMICS - TOP DOWN NATIVE CXMS	GOODLETT	exam 1	
7	Thursday	29-Sep-22	7	TARGETED PROTEOMICS	MICHAUD	exam 1	
8	Monday	3-Oct-22		REVIEW SESSION - PEPTIDE SEQUENCING ETC.	GOODLETT		
9	Thursday	6-Oct-22		EXAM 1	GOODLETT		40
	Monday	10-Oct-22		NO CLASS: THANKSGIVING			
10	Thursday	13-Oct-22	8	METABOLOMICS - OVERVIEW	GOODLETT	exam 2	
11	Monday	17-Oct-22	9	TARGETED METABOLOMICS	MICHAUD	exam 2	
12	Thursday	20-Oct-22	10	LIPIDOMICS	GOODLETT	exam 2	
13	Monday	24-Oct-22	11	MS IMAGING	PETROSOVA	exam 2	
14	Thursday	27-Oct-22	12	MS IMAGING	PETROSOVA	exam 2	
No class	Monday	31-Oct-22	13	RECORDED: DESI MS Imaging and nanoDESI MS Imaging	DUNCAN	exam 2	
15	Thursday	3-Nov-22		REVIEW SESSION - METABO LIPIDS	GOODLETT		
16	Monday	7-Nov-22		EXAM 2	GOODLETT		35
	Thursday	10-Nov-22		NO CLASS: READING BREAK			
17	Monday	14-Nov-22	14	PTMS	ROSS	exam 3	
18	Thursday	17-Nov-22	15	PTMS	ROSS	exam 3	
19	Monday	21-Nov-22	16	PTMS	ROSS	exam 3	
20	Thursday	24-Nov-22		EXAM 3	ROSS		15
21	Thursday	28-Nov-22	17	INFORMATICS	ALFARO	Take Home	
22	Monday	1-Dec-22	18	INFORMATICS	ALFARO	Take Home	
22	Monday	1-Dec-22	18	TAKE HOME ASSIGNMENT - handed out on 1 DEC	ALFARO		10
No Class	Thursday	5-Dec-22		Last Day of Classes			
				NO FINAL			
				TOTAL POINTS			100

Student Evaluation:

Exam 1 (6 OCT 2022)	40 points
Exam 2 (7 NOV 2022):	35 points
Exam 3 (24 NOV 2022):	15 points
Take home assignment (1 DEC 2022):	10 points
TOTAL	100 points

There is no assigned text for the course; topics will be drawn from primary and review literature, assigned in class, and posted on the course website. Students are expected to complete the reading assignments and the material will be included in the midterm and final exams. There will be one recorded lecture from which questions will be derived for Exam 2 and one Take Home assignment. We expect students to attend all the lectures, take notes, and participate in classroom discussions. Students are expected to attend all exams on the specified dates. Late assignments will not be marked and given a grade of 0. The slides used for lectures will be provided on the website before class, however these should not be considered complete and students are responsible for all material presented in class.

UVic Grading Scheme

A⁺ 90 - 100	B⁺ 77 - 79	C⁺ 65 - 69	F < 50
A 85 - 89	B 73 - 76	C 60 - 64	N ** < 50
A⁻ 80 - 84	B⁻ 70 - 72	D 50 - 59	

**** N grades**

Students who have completed the following elements will be considered to have completed the course and will be assigned a final grade:

- *All three exams.*

Failure to complete all both exams will result in a grade of "N" regardless of the cumulative percentage on other elements of the course. An N is a failing grade, and it factors into a student's GPA as 0. The maximum percentage that can accompany an N on a student's transcript is 49.

DEPARTMENT INFORMATION AND POLICIES

The Department of Biochemistry and Microbiology upholds and enforces the University's policies on academic integrity. These policies are described in the current University Calendar. All students are advised to read this section.

2. Cell phones, computers, and other electronic devices must be turned off at all times during live class sessions unless being used for the purpose of connecting and engaging with the class.
3. No recordings of live lectures are permitted without permission of the instructor. However, many courses will be recorded by the instructor for accessibility for students unable to attend. If you do not wish to be recorded, contact your instructor to determine if alternative arrangements can be made. Attendance and engagement in the classroom are integral parts of the learning process and cannot be substituted with recordings. It is at the instructor's sole discretion whether they provide a recording or give permission to students to record a lecture. There is no obligation to do so nor is there any expectations about the quality of the recordings. Nor should students assume a lecture will be recorded as instructors may withdraw access to recordings or permission to record. It is the responsibility of students who miss lectures to catch up on the material through extra readings, and

obtaining notes from fellow students. Students who miss several lectures due to illness should contact their instructors to discuss options.

4. Students and instructors are expected to assess their health daily and avoid campus if they are ill.
5. Course materials, such as notes, problem sheets, quizzes, examinations, example sheets, or review sheets, may not be redistributed without the explicit written permission of the instructor.
6. Students are expected to be available for all exams. Instructors may grant deferrals for midterm examinations for illness, accident, or family affliction. Although students do not require documentation, students must contact their instructor and BCMB office (biocmicr@uvic.ca) with the reason for their absence within 48 hours after the midterm exam. The Department will keep a record of the absences. It is the responsibility of the student to ensure all required components are complete, and to arrange deferred exams/assignments with the instructor, which normally should occur within one week of the original exam date.
7. The Department of Biochemistry and Microbiology considers it a breach of academic integrity for a student taking a deferred examination to discuss the exam with classmates. Similarly, students who reveal the contents of an examination to students taking an examination are considered to be in violation of the University of Victoria policy on academic integrity (see current University Calendar). Students must abide by UVic academic regulations and observe standards of scholarly integrity (no plagiarism or cheating). Online exams must be taken individually and not with a friend, classmate, or group, nor can you access notes, course materials, the internet, or other resources without the permission of the instructor. You are prohibited from sharing any information about the exam with others. Use of unauthorized electronic devices and accessing the internet and class material during exams is prohibited unless permission is granted by the instructor. Instructors may use Browser Lockdown Software to block access during classes and exams.
8. **Deferral of a final exam** must be requested with an Academic Concession form and submitted directly to Undergraduate Records. Deferred final exams for fall term courses will be arranged by the instructor. Deferred final exams or spring term courses will be arranged through Undergraduate Records and must be written before the end of the summer term as stipulated in the University Calendar.
9. Requests for review/remark of a midterm exam must be made within one week of the exam being returned.
10. The instructor reserves the right to use plagiarism detection software or other platforms to assess the integrity of student work.
11. Supplemental exams or assignments will not be offered to students wishing to upgrade their final mark.
12. Anonymous participation in online classes is not permitted without permission of the instructor.

Important note about COVID-related stress

The current pandemic is placing added stressors- financial, mental, and physical- on everyone. Your wellbeing is of foremost importance. If you are experiencing difficulties coping, the University has resources to help. Please reach out to Counselling Services, the Centre for Academic Communication, or Learning Assistance Program for assistance.

Centre for Accessible Learning

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, approach the Centre for Accessible

Learning (CAL) as soon as possible in order to assess your specific needs.

<https://www.uvic.ca/services/cal/index.php>

Course Experience Survey (CES)

We value your feedback on this course. Towards the end of term you will have the opportunity to complete a confidential course experience survey (CES) regarding your learning experience. The survey is vital to providing feedback to us regarding the course and our teaching, as well as to help the department improve the overall program for students in the future. When it is time for you to complete the survey, you will receive an email inviting you to do so. If you do not receive an email invitation, you can go directly to your [CES dashboard](#). You will need to use your UVic NetLink ID to access the survey, which can be done on your laptop, tablet or mobile device. We will remind you nearer the time but please be thinking about this important activity.