

BCMB 406A Laboratory Schedule

Week	Dates	Lab(s)	Day 1	Day 2	Due Dates
1	Sep 10-14	Introduction and Safety talk Lab 1: Isolation & Identification of Peptides & Proteins	Bradford assay	1 st dimension of 2D-PAGE	
2	Sep 17-21	Lab 1: Isolation & Identification of Peptides & Proteins	2 nd dimension of 2D-PAGE & HPLC	Gel imaging & spot excision	
3	Sep 24-28	Lab 1: Isolation & Identification of Peptides & Proteins Lab 2: Immunological Characterization of Cancer Cell Lines	Lab 1: Tryptic digestion & HPLC Lab 2: Prelab talk	Lab 1: Zip-tip plate spotting	Lab 2 calc. problem set
4	Oct 1-5	Lab 1: Isolation & Identification of Peptides and Proteins Lab 2: Immunological Characterization of Cancer Cell Lines	Lab 1: Mass spectrometry Lab 2: Cell culture & cell staining	Lab 1: Protein identification Lab 2: Complete cell staining	
5	Oct 8-12	Lab 2: Immunological Characterization of Cancer Cell Lines	No labs	FlowJo tutorial	Lab 1 Report
6	Oct 15-19	Lab 2: Immunological Characterization of Cancer Cell Lines	Cell culture & T cell assay set-up	T cell assay development	
7	Oct 22-26	Lab 2: Immunological Characterization of Cancer Cell Lines	FlowJo tutorial & data analysis	Data analysis	FlowJo exercise Midterm (Lab 1)
8	Oct 29-Nov 2	Lab 3: Chromatin Immunoprecipitation Analysis of YEF3	Chromatin prep, MNase digestion & reverse cross-linking	DNA purification & agarose gel	
9	Nov 5-9	Lab 3: Chromatin Immunoprecipitation Analysis of YEF3	Immunoprecipitation (IP)	IP & reverse cross-linking	Lab 2 Report
10	Nov 12-16	Reading Break – No Labs			
11	Nov 19-23	Lab 3: Chromatin Immunoprecipitation Analysis of YEF3	IP DNA purification, conventional PCR & QPCR	Agarose gel & QPCR data analysis	
12	Nov 26-30				Lab 3 Report (due on Day 1)
TBA - Final exam during regular exam schedule (Labs 2 and 3)					

Instructor Contact Information

Lab	Instructor	Email	Phone	Office
1	Ellen Busby	erbusby@uvic.ca	250-721-6504	Petch 186
2	Erika Wall	ewall@uvic.ca	250-472-5119	Petch 179b
3	Val Kerr	valk@uvic.ca		

Each instructor is responsible for a different lab as indicated above. Please make sure that you address any concerns or questions to the appropriate instructor.

CourseSpaces

<http://coursespaces.uvic.ca/my/>

Enter: NetLink-ID and Password

Select: 201809 BCMB 406A B01/B02/B03/B04 X

Important information for the course and each lab is posted on CourseSpaces. Announcements are frequently sent to students, so please make sure that you check the email you have on record.

Departmental Web Page

<http://www.uvic.ca/science/biochem>

Occupational Health and Safety

250-721-8971

<http://ohs.uvic.ca>

Police, Fire, Ambulance 911

Campus Security

250-721-7599

<http://www.uvic.ca/security>

University Health Services

250-721-8492

<http://www.uvic.ca/services/health>

Evaluation and Assessment

Percentage Breakdown for the Course:

Exams	50 %	see pages iv for more details
Lab Reports	20 %	see page iv and v for more details
Practical Assessment	20 %	see page iv for more details
Laboratory Journal	10 %	see page iv for more details

Final Course Percentages:

A final percentage will be calculated for the course based on the above criteria. All percentages will be rounded to the nearest whole number. For example, a calculated percentage of 79.49% will be recorded as 79% whereas 79.50% will be recorded as 80%.

Letter Grades will be assigned as follows:

90 - 100	A+
85 - 89	A
80 - 84	A-
77 - 79	B+
73 - 76	B
70 - 72	B-
65 - 69	C+
60 - 64	C
50 - 59	D
0 - 49	F (or N*)

* N grades

Students who have completed the following course requirements will be considered to have completed the course and will be assigned a final percentage and letter grade.

- *In class lab work (all Day 1 and Day 2 practical components must be performed)*
- *Midterm exam*
- *Final exam*

Failure to complete one or more of these elements 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.

Lab Exams (50%):

There will be a midterm and a final exam in this course. The midterm will be two hours in length and will only cover material from Lab 1. The final exam will be three hours in length and will cover material from Labs 2 and 3.

Exam	Date	Lab covered	Percent
Midterm	Thurs. Oct. 25, 7-9 pm	Lab 1	15 %
Final	TBA (during exam schedule)	Lab 2 and 3	35 %

Lab Reports (20%): Marks for the lab reports will be assigned as indicated below.

Laboratory Report	Marks
Lab 1 – Isolation and Identification of Proteins and Peptides	30
Lab 2 – Immunological Characterization of Breast Cancer Cell Lines	40
Lab 3 – Chromatin Immunoprecipitation (ChIP) Analysis	30
Total Marks	100

Practical Evaluation (20%):

Practical assessments will be done for each student by laboratory instructors and teaching assistants and will consist of:

- Frequent pre-lab quizzes to assess preparedness
- Pre-lab and in-lab assignments, calculations and problem sets
- Frequent evaluation of experimental results to assess technique
- Thoroughness of clean-up at each bench after the lab

Weighting of these assignments will vary based on the discretion of the instructors.

Maintenance of a Laboratory Journal (10%):

You will need a hard cover or spiral bound notebook to be used as a laboratory journal. This book is dedicated to recording both raw data generated while performing the labs and processed data used to create figures and tables. Your lab journal must be brought to every lab session. Journals will be marked as indicated by the instructor throughout the term.

Please write in ink and include all relevant information, such as:

- Date and title of the experiment
- Unknown numbers
- Pre-lab or in-lab calculations
- Detailed procedural steps used when not working directly from the lab manual
- All raw data you (and/or your partner) generate with important information included
- Experimental conditions (temperature, time, wavelengths, etc...)
- Loading order and volumes of samples put onto gels, etc...
- Changes to the procedure or mistakes/errors made
- Handouts of data and/or copies of student data posted on CourseSpaces
- **Observations made during the lab experiment**
- **Processed data in the form of tables, graphs or other important figures**
- **Interpretations of results – this may be in the form of written statements that summarize what the data indicates or clearly labeled summary figures**

Note: Portions of marked lab reports will not be considered as lab journal entries.

Laboratory Report Guidelines and Format

- **All laboratory reports must be written up individually.**
- Text should be typed and double-spaced, with margins no smaller than 1.9 cm (0.75")
- Use 12 point font of a standard style such as Arial or Times New Roman.
- All written text should be concise, well written and proofread for grammar and spelling.

Below is a general outline of what should be included in the following portions of a lab report in this course. Each lab report will have a different set of requirements so be sure to read the instructions for each submission carefully. Refer to CourseSpaces for a more detailed description of lab report expectations.

- Abstract:** State the purpose of the experiment(s) and put it in context. Summarize the methods, results and conclusions of the research.
- Introduction:** In a few well written paragraphs, state the purpose and introduce the main concepts of the lab by defining important terms and explaining new ideas. As well, briefly describe and indicate the purpose of performing the individual techniques or experiments.
- Methods:** Refer to the source of the procedure in proper citation format (most of the time this will be the lab manual). For procedures that you have designed, briefly summarize techniques and materials used so that someone could repeat the experiment (minor details are not necessary). Include any *significant* modifications that were communicated to you either verbally or in written form. Also, include mistakes that were made by you, your partner or other individuals that may have affected your results.
- Results:** Organize data in the form of fully labeled tables, graphs or figures. State the results in written form in a *Results Summary* placed before the figures, drawing attention to the key results. Reserve *all* interpretation for the discussion. Tables, graphs and figures should be numbered in the order in which they are cited in the text.
- Discussion:** The discussion should provide an interpretation of your results. Be concise. Keep discussion relevant to the data generated from your own experiment (and that of your classmates when appropriate). Incorporate into your discussion the answers to any relevant questions that appear in the lab manual. In a couple of sentences, draw a conclusion based on the results of the experiment.
- Appendix:** Include raw data, calculations and other information that is relevant. Remember to number your appendices and include a basic title for each.
- References:** Online links to all relevant reference papers can be found on CourseSpaces. Laboratory reports must be referenced following the format of the *Journal of Molecular Biology*. This is the same format we use in the lab manual.

Please note: A lab report submission consists of both a hard copy and electronic copy. Hard copies of reports are to be submitted to the instructor, whereas electronic copies are to be uploaded to CourseSpaces. Both must be submitted by the designated date and time, otherwise late penalties will apply.

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.

Course Policies

Attendance

Laboratory attendance is compulsory. Failure to attend a lab without a written medical excuse will result in a mark of 'N' (**incomplete**) for the course. A change of lab section must be arranged with the lab instructor **prior** to the lab period. Students who miss a lab for medical reasons are responsible for maintaining their lab journal and for obtaining the data needed to write up the lab report.

It is important to arrive on time. Students who arrive after a pre-lab quiz has begun will not be given extra time to complete the quiz. No makeup quizzes will be given for students who arrive after a quiz is over. The instructor reserves the right to refuse late arrivals or withhold practical marks associated with that lab if a student shows up late without a legitimate reason.

Late Assignments or Lab Reports

Late assignment or lab reports (either the hard copy or the electronic copy) will be penalized 10% per day and will not be accepted after one week (7 days) following the designated due date. Late lab reports or assignments can be emailed to the instructor on days when the university is closed but a hard copy must be submitted by noon on the first working day after the emailed submission.

Re-marking Policy

Request to have assignments (lab reports, quizzes, exams, journal entries, practical assessments, etc.) reviewed/remarked must be made within one week of the assignments being made available. Students are expected to promptly pick up assignments after marking is completed, either in lab or from the instructor. Any resubmissions will involve remarking of the entire assignment and students will be given the grade assigned after the second review.

Centre for Accessible Learning

Students with diverse learning styles and needs are welcome in this course. If you have a disability/health consideration that may require accommodations, please feel free to approach an instructor and/or the Centre for Accessible Learning (CAL) as soon as possible. The CAL staff is available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. The website is <http://www.uvic.ca/services/cal/index.php>. The sooner you let us know your needs, the quicker we can assist you in achieving your learning goals in this course.

Department Information and Policies

1. 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 unless being used for a purpose relevant to the class. Students having a cell phone, tablet, or computer on their person during an exam will be assumed to have it for the purpose of cheating.
3. Any recordings of lectures may only be performed with written permission of the instructor, and are for personal use only. The instructor retains copyright to such recordings and all lecture materials provided for the class (electronic and otherwise); these materials must not be shared or reposted on the Internet.
4. 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.
5. Students are expected to be present for the midterm and final exams. Instructors may grant deferrals for midterm examinations for illness, accident, or family affliction, and students must provide appropriate documentation 48 hours after the midterm exam. 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 a deferred examination are considered to be in violation of the University of Victoria policy on academic integrity (see current University Calendar). 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 for 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.
6. Multiple choice scan sheets for machine scoring (bubble sheets) are considered the authentic exam answer paper and will be retained by the department for 1 year.
7. Professors may refuse to review/remark exams not written in indelible ink. In addition, requests for review/remark of a midterm exam must be made within one week of the exam being returned. Students are expected to promptly pick up midterm exams after marking has been completed, either in class or from the instructor.
8. Examination papers that have pages removed, or are mutilated will not be marked.
9. The instructor reserves the right to use plagiarism detection software or other platforms to assess the integrity of student work.

University Policy on Academic Integrity

Suspected cases of plagiarism or cheating will be documented and submitted to the department chair for penalty assessment as described in the UVic calendar (2018-2019).

Plagiarism

A student commits plagiarism when he or she:

- submits the work of another person as original work
- gives inadequate attribution to an author or creator whose work is incorporated into the student's work, including failing to indicate clearly the inclusion of another individual's work
- paraphrases material from a source without sufficient acknowledgement as described above

Falsifying Materials Subject to Academic Evaluation

Falsifying materials subject to academic evaluation includes, but is not limited to:

- fraudulently manipulating laboratory processes, electronic data or research data in order to achieve desired results
- using work prepared by someone else and submitting it as one's own
- citing a source from which material was not obtained
- using a quoted reference from a non-original source while implying reference to the original source
- submitting false records, information or data, in writing or orally

Cheating on Assignments, Tests and Examinations

Cheating includes, but is not limited to:

- copying the answers or other work of another person
- sharing information or answers when doing take-home assignments, tests and examinations except where the instructor has authorized collaborative work
- having in an examination or test any materials or equipment other than those authorized by the examiners

Collaborative Work (Penalties) * See below for details specific to this course.

In cases in which an instructor has provided clear written instructions prohibiting certain kinds of collaboration on group projects, instances of prohibited collaboration on a substantial part of the assignment should result in a grade of zero for the assignment, while instances of prohibited collaboration on the bulk of the assignment should result in a grade of F for the course.

*** In BCMB 406A, all assignments and lab reports be written up independently. Collaborative work is only allowed in specific situations when students are directed to share data by the instructor. Students can discuss thoughts and ideas with other students but all written work must be original. Be sure to submit work that is entirely your own.**