

# **BCMB 406A**

# **Laboratory Manual**

# **Fall 2017**

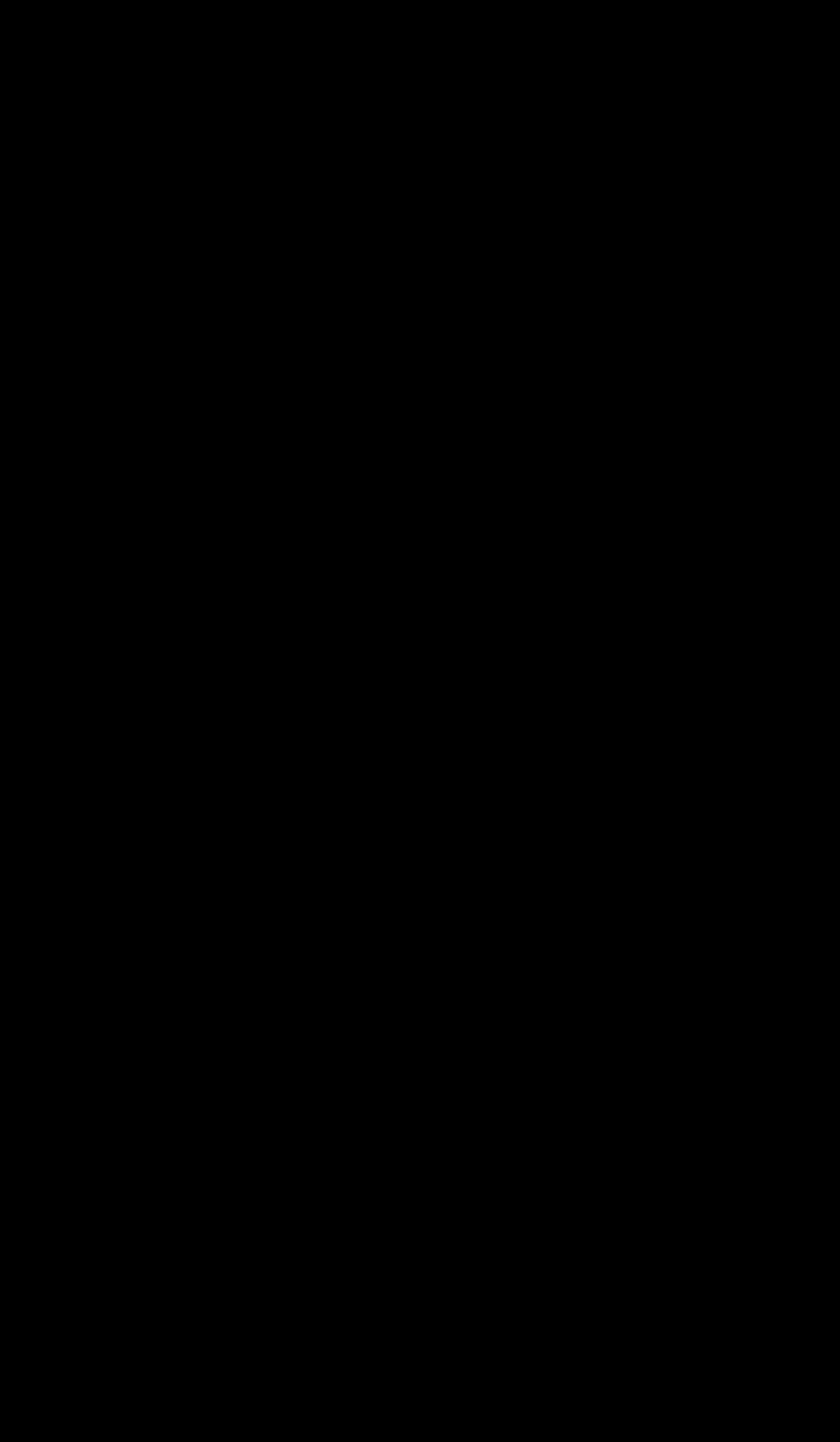
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## BCMB 406A Fall 2017 Laboratory Schedule

Week	Dates	Lab(s)	Day 1	Day 2	Due Dates
1	Sep 11-15	<b>Introduction and Safety talk</b> <b>Lab 1:</b> Isolation & Identification of Peptides & Proteins	Bradford assay	1 <sup>st</sup> dimension of 2D-PAGE	
2	Sep 18-22	<b>Lab 1:</b> Isolation & Identification of Peptides & Proteins	2 <sup>nd</sup> dimension of 2D-PAGE & HPLC	Gel imaging & spot excision	
3	Sep 25-29	<b>Lab 1:</b> Isolation & Identification of Peptides & Proteins <b>Lab 2:</b> 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 2-6	<b>Lab 1:</b> Isolation & Identification of Peptides and Proteins <b>Lab 2:</b> 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	
<b>Thanksgiving (No Labs all week)</b>					Lab 1 Report
			ion Cell culture & T cell assay set-up	T cell assay development	
			ion FlowJo tutorial & data analysis	Data analysis	FlowJo exercise Midterm (Lab 1)
			on Chromatin prep, MNase digestion & reverse cross-linking	DNA purification & agarose gel	



## Evaluation and Assessment

### Percentage Breakdown for the Course:

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

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

Laboratory Report	Marks
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## Course Policies

### ***Attendance***

Laboratory attendance is compulsory. Failure to attend a lab without a written medical excuse will result in a mark of \_\_\_\_\_ 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 7 days past 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***

Requests 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





## Safety Regulations

Work in a microbiology laboratory involves exposure to living microorganisms, many of which must be considered as potential pathogens. Personal recognition of safety and the acceptance of certain precautions are therefore necessary prerequisites to working in the laboratory.

1. **Access to the laboratory is limited to instructors and students.**
2. **No eating or drinking in the laboratory.** Keep paper, pencils, fingers, and other objects out of your mouth.
3. **Safety glasses must be worn at all times.**
4. **Laboratory coats must be worn and properly fastened by all personnel working in the laboratory and must not be worn in public places.** Laboratory coats will be provided for you and will be shared between sections. If you would prefer a lab coat of your own, you will need to bring one to your first lab section. It will be kept in the lab until the end of the course, at which time it will be autoclaved and available for pick-up.
5. **Open-toed shoes or sandals should not be worn and bare legs are not allowed.** Capri pants, skirts and shorts are only allowed if they cover the knees when you are sitting down.
6. **Lab doors and windows must be closed when working with Level 2 organisms.**
7. **Personal items (coat)**
8. **Wash hands before and after completing all lab work.**
9. **Long hair must be tied back** to protect against burning and falling into stains, chemicals or bacterial cultures.
10. **Gloves must be worn in the following situations:**
  - Working with Level 2 organisms
  - Working with potentially harmful reagents
  - If you have open cuts or abrasions on your hands
11. **Gloves and lab coats are not to be worn outside of the lab.**
12. **Remove gloves when working with communal equipment and computers.**
13. **Bunsen burners are to remain off when not in use.**
14. **Dispose of all liquids into the designated waste containers.** No liquids are to be poured down the sink (except water).
15. **Contaminated liquid waste must be autoclaved prior to disposal.**

16. **Dispose of infectious solid waste in the yellow biohazard buckets for autoclaving.**

17. **Report any accidents or safety concerns to an instructor immediately.**

leadtoinfectious skin comes into contact with chemicals, wash immediately with cold running water for at least 10 min.

In the event of a bacterial spill, pour an equal volume of bench disinfectant on top of the spill and allow it to sit for five minutes. Clean up the spill wearing gloves and using a no-touch technique. Discard all waste in a yellow biohazard bucket for autoclaving. **WASH YOUR HANDS with hand disinfectant and soap.**

Do not pick up broken glass. The instructor will do this.

If something has splashed in your eyes, rinse them at the eye wash station for at least 20 min.

18. **Sitting on laboratory work surfaces is prohibited.**

19. **Use of cellular devices is not allowed in the lab.**

20. **Note the location of the following safety equipment:**

Eye wash station

Safety shower

Fire extinguisher

Telephone

Fire alarm

21. **Before leaving the laboratory:**

Place all cultures and other contaminated materials to be discarded in the appropriate containers for sterilization in the autoclave

Put your experimental materials (**labeled!**) in the appropriate bins or racks for incubation or storage

## Fire Evacuation Procedure

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