

## BIOC 420 – Advanced Biochemical Techniques Course Outline

### Course Description

This lab course focuses on experiments and techniques relevant to modern day molecular biology-biochemistry research. The course is structured such that students are in the lab (free from all other courses) for one full day per week. Students will work in small groups to complete multi-week experiments that mimic real research. Students will take part in interactive discussions to start each day but are then given the opportunity to undertake their experiments in a self-directed format.

### Course Objectives

While this is a lab course, the objectives of the course go beyond learning the technical details of the experiments performed. The course will also focus in on experimental design, data analysis and communicating science.

#### This course aims to:

- Provide students with a “snapshot” of a career in research
- Improve problem solving and deductive reasoning skills
- Provide experience designing and troubleshooting experiments
- Improve writing skills
- Transition your knowledge to practical application

#### You will obtain direct experience with:

- Primer design
- Cre/lox genetic recombination
- Hydrolysis probe based qPCR
- RNA preparation and cDNA synthesis
- SYBR based RT-qPCR
- Immunoprecipitations
- Western blotting

### Lab Times

Labs start at 8:30 am each day and continue until the experimental work for the day is completed or 5:30 pm. As well, on certain occasions you may need to come into the lab briefly outside of your scheduled lab time to facilitate experimental progress.

### Missing Lab Policy

Whenever feasible provide 24hrs notice (to myself and your lab partner) of an absence. If a student misses the equivalent of 2 lab days there will be a meeting with the course Instructor to discuss if completion of the course is feasible. In some cases the student will be requested to withdraw from the course. Note that absences for medical reasons may be handled differently and the policy altered to accommodate certain situations. Absences due to medical reasons must be accompanied by a note from the doctor/technician on the office stationary and a phone number/email for the office. If the policy creates an issue for your particular case please come speak to me directly.

## Course Evaluation

Progress Report 1 (weeks 1-4)	30%
Progress Report 2 (weeks 5-11)	65%
Lab Performance	5%

\* Note a detailed progress report guideline and evaluation rubric can be found on the website

\* Reports will be penalized 10% per day late, unless there is a valid reason for an extension

## Course Communication

For all information pertaining to BIOC 420 please see the course website to obtain the most up to date information. On the website you will find the course schedule (with due dates), lab manuals, and product technical specification sheets.

## Academic Honesty

According to university policy, students are responsible for learning what the rules of academic honesty are and for applying those rules to their own work. While some forms of academic misconduct are relatively obvious, some may be less so and if you are ever in doubt it is best to check with your course instructor. An extensive list of what UBC considers Academic Misconduct can be found in the academic calendar.

What constitutes plagiarism is sometimes difficult to understand. The university has produced guidelines to help understand what plagiarism is and how to avoid it, you can find those guidelines here: <http://learningcommons.ubc.ca/resource-guides/avoiding-plagiarism/>

What consequences can arise from academic misconduct? The severity of the discipline can range from a letter of reprimand or a zero all the way to expulsion from the University. A list of possible outcomes can be found here: <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,54,111,960>

With some effort and forethought no student should ever have to find themselves facing discipline for academic misconduct; inform yourself as to the expectations placed on you and what your responsibilities are. If in doubt as to what constitutes misconduct, be sure to ask.

## Contact Information

If you have any questions, concerns or comments always feel free to come discuss with me. I do not keep set office hours, but I am typically available most lab days. You are welcome to drop by my office anytime, however it is often best to email me so that we can arrange a time to meet.

Dr. Scott Covey

Office: 1114 Copp Building

Email: [scott.covey@ubc.ca](mailto:scott.covey@ubc.ca)

Phone: (604) 822-1949