

BIOC 421 – Recombinant DNA Techniques

Course Description

This lab course focuses on experiments and techniques relevant to modern day molecular biology/nucleic acid research. Students will work as a group of two to complete multi-week experiments that mimic real research. This course is intended for students who are looking to obtain more experience with molecular biology and gain practical skills in a research lab.

Lab Times

Labs sections are 4 hours per week on one of Tues or Thurs morning or afternoon. For certain experiments you will have to come into the lab briefly outside of class time, in such cases this will be less than 15 minutes per week.

Course Objectives

While this is a lab course, the objectives of the course go beyond simply learning the technical details of experiments performed. The course will also focus on an in-depth understanding of the techniques performed, experimental design, and communicating science.

This course aims to:

- Improve problem solving and deductive reasoning skills
- Gain experience designing experimental plans
- Improve writing skills
- Transition your skills and theory to practical application
- Enjoy doing experiments in Biochemistry/Molecular Biology

Research Project

The research project is the cloning, expression, purification and analysis of the thermal stability of a domain of a Ryanodine receptor. In this project students will gain direct experience with the following techniques

1. PCR based cloning
2. Expression of recombinant proteins
3. SDS-PAGE and Western blotting
4. Protein purification by affinity tag
5. Differential scanning fluorimetry

Course Evaluation

Draft Report	20 %
Final Report	70 %
Lab Performance	10 %

Contact Information

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