CHEM C110L/MCB C110L – GENERAL BIOCHEMISTRY AND MOLECULAR BIOLOGY LABORATORY (4 UNITS)

COURSE OVERVIEW

SUMMARY

MCB 110L provides an overview of techniques and critical thinking required in a biological research laboratory. Students will work with the protein Cin8 from the yeast *Saccharomyces cerevisiae* and an analogue from the thermophilic *Chaetomium thermophilum* and conduct common research laboratory techniques to analyze its properties both in vitro and in vivo.

PREREQUISITES

MCB 110 (can be concurrently enrolled) (mcb110.html)

LABORATORY EXPERIMENT TOPICS COVERED

- Basic Techniques
- Mutation and Transformation
- Genomics and Proteomics
- Protein Localization
- Protein Chemistry
- Phenotypic Analysis
- Transcriptional and Expressional Analyses

SKILLS LEARNED

- Basic quantitative analysis
- Polymerase Chain Reaction (PCR)
- Reverse Transcriptase PCR
- Basic cloning techniques
- Basic sequencing techniques
- *In-vitro* analyses for protein quantification and activity
- Fluorescence microscopy

WORKLOAD

COURSEWORK

- Two papers
  - Research proposal
  - Final research paper
- Final
- Miscellaneous other assignments throughout semester relating to laboratory procedures

TIME COMMITMENT

2 hours of lecture per week, 6 hours of lab per week. Approximately 1-2 hours weekly for prelab and postlab questions. Approximate 10 hours for each paper.

CHOOSING THE COURSE

WHEN TO TAKE

Should be taken concurrently or any time after taking MCB 110. It is not recommended to take a second laboratory course concurrently.

WHAT NEXT?

- MCB 110 (if not already taken) (mcb110.html)

ADDITIONAL COMMENTS AND TIPS

The pacing and work of this course may vary depend on the professor teaching it. The formal papers are quite lengthy and require a lot of time to write – plan accordingly.

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