

Molecular Biology and Biochemistry

Molec Biol and Biochem 222

Section: D100

Term: 2004 Fall

Instructor: Dr. W. Davidson,

Office: SSB 7105

Discussion Topics: General Course Description: (from calendar)

An introduction to DNA replication and recombination, RNA transcription and protein synthesis in the context of their locations within the cell and their timing in the cell cycle. The relationship between structure and function of proteins and nucleic acids will be addressed (lecture).

3 lecture hours/week; 1 tutorial hour/week; 0 lab hours

Topics:

Introduction

Chemical equilibria, free energy, catalysis

Proteins I: amino acids, polypeptides, folding

Proteins II: enzyme classes; serine proteases

Proteins III: hemoglobin

DNA structure

DNA replication; repair and mutagenesis

Plasmids and Viruses

Recombinant DNA and techniques

The Nucleus; chromosome structure & chromatin

The cell cycle, mitosis

Molecular Biology and Biochemistry

Chromosome replication

Meiosis and Recombination

Flow of genetic information

Prokaryotic transcription, the lac operon

Eukaryotic transcription; poly A and capping

Splicing

Protein Synthesis

(Special Topics)

Grading: Grades will be based on 1 quiz, 1 midterm, problem sets and a final exam.

Required Texts: 1. Alberts, et al., Molecular Biology of the Cell, 4th edition, 2002.

Garland Publishing Co. Inc. ISBN 0-8153-3218-1.

2. Mathews & van Holde, Biochemistry, 3rd edition, 2000. Benjamin Cummings Publishing Co. Inc. ISBN

Recommended Texts: None

Materials/Supplies: None

Prerequisite/Corequisite: Prerequisite: MBB 221 (or BICH 221).

Corequisite: CHEM 282 (or 250).

Recommended: CHEM 282 precede MBB 222.

Notes: - Students may not receive credit for both MBB 222 and BICH 222.

- Students requiring accommodations as a result of a disability, must contact the Centre for Students with Disabilities (604-291-3112 or e-mail: csdo@sfu.ca).

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