

GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF SCIENCE

BI 2010 CELLULAR BIOLOGY

COURSE OUTLINE
FALL 1992

COURSE OBJECTIVES: The principal objective of the course is to gain an understanding of the metabolism and ultrastructural characteristics of cells with an emphasis on structure - function relationships. An understanding of the preparative and analytical techniques used in cell biology and biochemistry should be gained throughout the course.

INSTRUCTOR: Dr. David C. Creasey
office: J223 phone: 539-2860

PREREQUISITES: GN 1970 Heredity, and either
CH 1600 Organic Chemistry or
CH 2600 Organic Chemistry
(CH 1600 or CH 2600 may be taken as
corequisites)

TRANSFERABILITY:

BIOL 201	University of Alberta
BIOL 301	University of Calgary
BIOL 2300	University of Lethbridge
BIOL 3xx	Athabasca University
BIO 330	Augustana University College
BIO 201	Concordia College
BIOL 303	The King's College

TEXTBOOK: Loewy A.G., Siekevitz P., Menninger J.R., and
J.A.N. Gallant, Cell Structure and Function:
An Integrated Approach (3rd ed.), Saunders
College Publishing, Toronto, 1991.
ISBN 0-03-047439-6

LECTURES:

PLACE:	J101
TIME:	Mondays, Wednesdays, and Fridays 11:00 - 11:50

EVALUATION:

Pre-Midterm Test (week of Sept. 28)	10%
Midterm Test (week of Oct. 19)	20%
Post-Midterm Test (week of Nov. 16)	20%
Final Course Examination	50%

Students are responsible for all course material in all tests and examinations.

COURSE DESCRIPTION:

BI 2010 is a comprehensive, though introductory, course in cellular biology whose principal aim is to examine the molecular components and ultrastructural characteristics of cells as they relate to molecular and cellular function. The course is comprised of approximately 3 hours of lectures per week over the course of a single term. There is no laboratory component to accompany the lectures. The topics discussed include: cell and organellar structure; preparative and analytical techniques used in cell biology and biochemistry; basic thermodynamics and bioenergetics; the structure and function of organelles; the biochemistry of enzymes; an introduction to anabolic and catabolic pathways and their regulation, with an emphasis on energy storage and utilization; contractility; membrane systems; the extracellular matrix; the cytoskeleton; the structure of the nucleus; the structure of chromatin; gene expression and RNA processing; the growth and replication of cells; eucaryotic cell cycles and their analysis; *in vitro* cell culturing techniques. Additional topics may be discussed.

Owing to the nature and scope of the course, STUDENTS ARE ADVISED TO READ TEXT AND ASSIGNED MATERIALS IN ADVANCE OF LECTURES.

RESOURCE MATERIAL:

The LRC has many excellent texts and books covering a wide range of subjects in cell biology (look in sections QP and QH on the second floor). These holdings include the Annual Review of Cell Biology series as well as Molecular Cell Biology by Darnell et al and Molecular Biology of the Cell by Alberts et al.

In addition to these holdings, the LRC offers many audio/visual resources for biology students, with the necessary machinery to view/hear these resources. Students are strongly encouraged to use all LRC resources.

OTHER CONSIDERATIONS:

In accordance with the rights and responsibilities of the student as outlined in the current academic calendar of this college, students are expected to arrive on time for classes. Students arriving late may not be allowed into that class.