Grande Praire Regional College

Dept. of Science & Technology

BI 2010
Cellular Biology

Course Outline
1999-2000

Instructor
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Course Description: This course deals with the ultrastructure and metabolism of cells. It covers material on energy in biological systems; methods in cell biology, contractility, cell growth and replication, nuclear structure and cancer cell biology.

Pre-requisites: BI 1070

Pre-requisite/Co-requisite: CH 1610 or CH 1630

Transferability

University of Alberta - BIOL 201
University of Calgary - BIOL 331
University of Lethbridge - BIOL 2xxx

Textbook:

Essential Cell Biology (1998)
Alberts, Bray, Johnson, Lewis, Raff, Roberts and Watson
Garland Publishing, Inc.

This text is intended to supplement the lecture notes, not substitute for them.

Copies of "Molecular Biology of the Cell" by Alberts *et al* will be placed on reserve in the library as a source for some reading material.

Evaluation:

Mid-term Exam I	20%
Mid-term Exam II	30%
Final Exam	50%

Other Resources:

Lecture summaries of BIOL 201 at the University of Alberta are available on the Internet at the address:

http://www.biology.ualberta.ca/courses.hp/bio201/bio201.htm

This site also contains examples of past exams and suggested readings from "Molecular Biology of the Cell"

Lecture Outline - BI 2010

	TOPIC	READINGS
1	Introduction Cell culture and cell fractionation	assigned
2	Microscopy light and electron microscopy	pages 1-8, assigned
3	Methodology light and electron microscopy	assigned
4	Labelling and detection methods	assigned
5	ATP and energy interconversions	Chapter 3
6	Membrane structure and membrane transport	Chapters 11 and 12
7	Specific examples of membrane transport	Chapters 11 and 12
8	Cell junctions desmosomes, tight junctions, gap junctions	pages 605-613
9	Intracellular compartments endoplasmic reticulum	pages 13-15, assigned
10	Intracellular compartments golgi, lysosomes, peroxisomes, vesicular transport	assigned
11	Protein sorting and targeting	pages 452-462
12	Endocytosis and exocytosis	pages 462-477
13	Genetic consequences of altered protein targeting	assigned
14	Cytoskeleton	pages 513-542
15	Cilia and flagella	pages 513-542
16	Cellular contractility	pages 513-542
17	The nuclear envelope	pages 455-456, 517-518
18	Chromatin structure	pages 250-255
19	Centrioles, RNA synthesis, ribosome biosynthesis	pages 521-522, 263, 212-224, 227-230
20	Eucaryotic cell cycle and control of the cell cycle	pages 549-550, 571-581
21	Mitosis and cytokinesis	pages 552-563
22	Cancer cell biology	pages 582-589