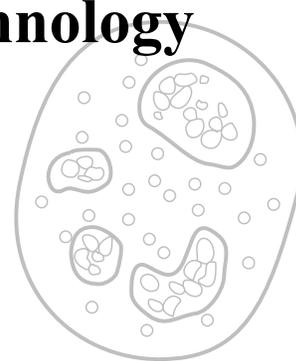
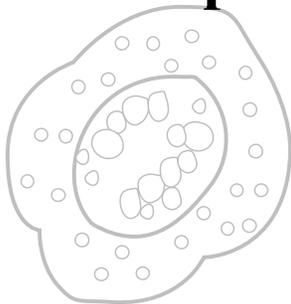


**Grande Prairie Regional College**

**Dept. of Science & Technology**



**BI 2010**

**Cellular Biology**

**Course Outline**

**Winter 2004 - 2005**

**Philip Johnson B.Sc., M.Sc., Ph.D., M.S.P.H.**

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**Course Description:** A structural and functional dissection of a eucaryotic cell. Detection of specific molecules at the ultrastructural level; plasma membrane structure and function; cytoskeletal involvement in intracellular transport, mitosis and cytokinesis; the endomembrane system, protein targeting, exocytosis and endocytosis; nuclear structure and function; cell cycle control and cancer

**Schedule:** Monday & Wednesday 1430-1550 hrs J202

**Pre-requisites:** BI 1070

**Pre-requisite/Co-requisite:** CH 1610 or CH 2610

**Transferability:** Athabasca University - BIOL 3xx (3)  
Augustana University - BIO 2xx (3)  
Canadian University College - BIOL 374 (4)  
Concordia University College - BES 201 (3)  
King's University College - BIOL 3xx (3)  
University of Alberta - BIOL 201 (3)  
University of Calgary - BIOL 331 (3)  
University of Lethbridge - BIOL 2xxx (3)

**Textbook:** "The World of the Cell" (2003)  
Becker, Kleinsmith and Hardin  
*Benjamin Cummings*

This text is intended to supplement the lecture notes, not substitute for them. **It is expected that students read both the pages listed in the Lecture Outline along with other relevant sections of the text.**

**Evaluation:**

Exam I	33.3%
Exam II	33.3%
Exam III	33.3%

All exams are non-cumulative consisting of multiple-choice questions. Exams will be held during regular class hours in J226.

**Web-site:** [http://www.gprc.ab.ca/courses\\_and\\_programs/biology/bi2010nf.html](http://www.gprc.ab.ca/courses_and_programs/biology/bi2010nf.html)

**Other Resources:** A copy of the following text will be placed on reserve in the library  
  
'Molecular Biology of the Cell' (Alberts *et al*)

## Lecture Outline - BI 2010

Hours	Topic	Readings
1.5	Course introduction Techniques used in modern cell biology	5-8; 92; 326-330 Guide to microscopy 1-26
2	Organization of the genome	486-490; 504-509
2	DNA replication	525-541; 543-544
2	The Cell Cycle	544-571
2	Gene Expression - Transcription	640-655
2	Gene Expression - Translation	660-674
2	Gene Expression - Regulation	704-706; 717-725
<b>Mid-term Exam I</b>		
2	The Nucleus	510-518; 729-730
3	Membrane organelles	323-325; 330-362; 469-471; 676-683; 770-773
1.5	Flow of energy in the cell	112-125
3	The cytoskeleton and intracellular movement	95-97; 742-765; 777-786; 792-795
3	The Cell Membrane	166-180; 184-189; 203-215; 310-313
<b>Mid-term Exam II</b>		
1.5	Cell Signaling - Neurons	225-243
3	Cell Signaling - Non-neuronal, responses	256-282
1.5	Cell Death - Apoptosis	282-285
1.5	Basics of Development	
1.5	Special Cell Types, Cellular Pathologies	

The pages listed above refer only to those sections of the text which will be covered directly in class. Other sections of the text are relevant and therefore should also be read by students.