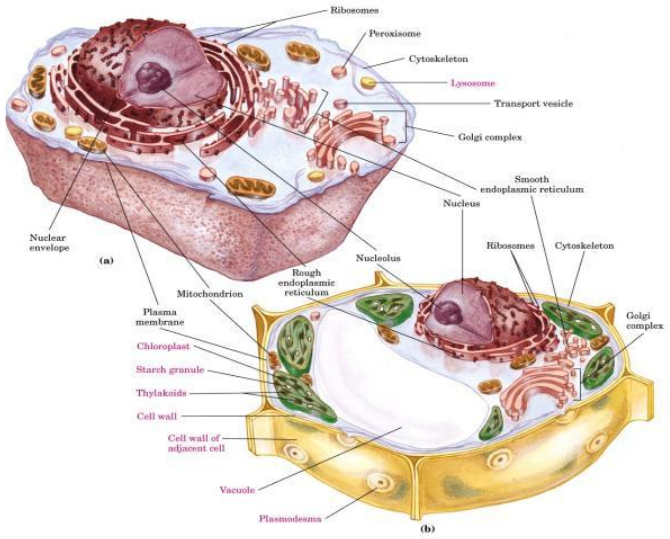
Grande Prairie Regional College
Department of Science

Cellular Biology, Biology 2010 (3* 3-0-0)
Winter 2009 Course Outline



Instructor: David Dansereau, PhD
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Office: J221
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Course Description: a structural and functional dissection of a eukaryotic cell with emphasis on the techniques of modern cell biology. 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.

Course 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)
see http://www.acat.gov.ab.ca/ for details.

Schedule: Tuesdays & Thursdays 13:00 – 14:20 Room J229

Office Hours: You are welcome to drop in to my office (J 221) at any time. Times that I will be out of the office for a lecture or lab will be posted on my office door. If you prefer to have an appointment, please email and we can choose a time that is convenient to both of us.

Textbook: "The World of the Cell" 7th Edition (2009)
Becker, Kleinsmith and Hardin; *Benjamin Cummings*

Several copies of this textbook are available on reserve in the library.

Readings: Readings from the textbook will be assigned throughout the term. The textbook is meant to supplement your lecture notes, not replace them.

Up to 8 scientific papers and review articles will be placed on reserve in the library. You are responsible for the information covered in these additional papers.

Online resources: BI2010 page on Blackboard *http://blackboard/webapps/login/*
Slides presented in class may be available online. Online material is meant to supplement your lecture notes, not replace them.

Course Assessment:

25%	3 Assignments
20%	Exam 1
25%	Exam 2
30%	Exam 3

The exams **are cumulative**. Exams will contain a mixture of question styles weighted heavily toward long written answers. The exams will be held during regular class hours in J229.

Exams will not be rescheduled; if you miss an exam, its weight will be transferred to the next exam. If you miss 2 exams, the second will be assigned a grade of zero.

Assignments must be completed and handed in at the beginning of class on the date specified. **Late assignments will not be accepted** because I need time to mark and return them before the next exam.

Final Grade: At the end of this course you will be assigned a letter grade that the Registrar's office will convert to four-point equivalence as follows:

Grade	4-point Equivalence	Descriptor
A+	4.0	Excellent
A		
A-	3.7	First class standing
B+	3.3	
B	3.0	Good
B-	2.7	
C+	2.3	Satisfactory
C	2.0	
C-	1.7	
D+	1.3	Minimal Pass
D	1.0	
F	0.0	Fail

Topic Outline:

1. Cell organelles and macromolecules
2. Techniques used to explore cells
3. Protein structural motifs and folding of protein chains
4. Enzymes
5. Detecting proteins
6. Detecting nucleic acids
7. Plasma membrane structure and function
8. Exocytosis and endocytosis
9. Endomembrane system and protein targeting
10. Cell-cell signaling: Chemical, electrical and messenger/receptor systems
11. The cytoskeleton: motility, transport, and division
12. Cell adhesion, cell junctions and the extracellular matrix
13. Transcription and translation
14. Organization of the eukaryotic genome
15. Regulating gene expression
16. Apoptosis and cell cycle control

Exam and assignment schedule:

Assignment 1	Jan 22
Exam 1	Feb 3
Reading week	Feb 16-20
Assignment 2	March 3
Exam 2	March 12
Assignment 3	April 2
Exam 3	April 14