BIOLOGY 120.3 – THE NATURE OF LIFE
Section C40
Syllabus and Course Outline
2013-2014 T2 (Jan 2nd to Apr. 8th)

COURSE DESCRIPTION:

Biology 120.3 is designed to introduce you to the underlying fundamental aspects of living systems: covering cell biology, genetics and the evolutionary processes which lead to complex, multi-cellular life forms.

LEARNING OUTCOMES:

Students will be expected to learn biochemistry, different cell types, components of cells and functions of a cell components, roles of the cell membrane, the cell cycle including DNA replication, mitosis, meiosis, chromosomal components and mutation, Mendelian genetics, other patterns of genetics, transcription, translation, viral and bacterial genomes and how these relate to genetic technologies, enzyme structure and function, cellular respiration, photosynthesis and evolution. Each, and every, week Biology 120 will require 3 hours of lecture, 3 hours of lab and a minimum of 3 hrs of study.

INSTRUCTORS:

Kim Cross

CONTACT:

kim.cross@usask.ca (general response time: 24hrs except stat holidays)

OFFICE HOURS:

Available online after each lecture, or by email.

TEXTS:

1. **BIOLOGY: Exploring the Diversity of Life, 2nd Can. Ed.**, by Russell, Nelson Pub. (either printed copy or e-text)
2. **2013-2014 Lab Manual** for Biology 120.3

GRADES:

Your final grade for Biology 120.3 is calculated as follows:

Lecture Mid-Term Exam =	15%
Final Lecture Exam =	45%
Lab Assignments and Quizzes =	20%
Final Lab Exam =	20%
TOTAL GRADE =	100%

LECTURES:

Scheduled Lecture Times

Tuesday
4:30 p.m. to 7:30 p.m.

Your first lecture will be Tuesday Jan. 7th, 2014.

Please look on Blackboard (**bblearn.usask.ca)** for posted notes for the class and other information. At a minimum, you should make a habit of logging into Blackboard on a weekly basis because new notes and announcements for Biology 120.3 are typically posted on Sunday or Monday of each week.

Steps to obtain notes from Blackboard (bblearn.usask.ca):

1. Login to https://bblearn.usask.ca directly using your U. of S. NSID.
2. Click on the Biology 120.3 link under the "U. Of S. Course List" module (please make note of your course build number, ex. 86670.201309)
3. Click on "Course Materials" link under your course build number/course title.
4. Click on the "Biology 120.3 Lectures and Labs" link
5. Click on a lecture, save it to your computer.
6. Print off the lecture. To save paper go into print settings and adjust to 2x2 (i.e. 4 slides per sheet).

Lecture Evaluations

As a student, you must bring your current College or University of Saskatchewan student ID card to all exams and be prepared to present it for verification purposes.

It is forbidden for you to utilize, in any way during an exam, any electronic device (e.g. cell phone, smart phone, tablet, laptop, electronic dictionary or translator) other than a simple calculator (if required by the examiner) for solving mathematical problems.

There will be two Mid-Term Lecture Exams (Feb. 4th, 2014 and Mar. 18th, 2014) collectively worth 15% of your grade. In the event that you are absent from these exams due to a medical emergency, death in the family, or another exceptional circumstance, it is **necessary for you to present documentation (e.g. medical certificate, death notice or verification) explaining the absence**, to assist in the determination of whether permission will be granted for you to write a deferred mid-term exam. **Students absent for a Mid-Term Lecture Exam must advise their lecturer in person, by telephone or by e-mail and initiate arrangements for writing a Deferred Mid-Term Exam, within THREE WORKING DAYS of the missed exam**, in order to avoid being assigned a grade of **zero** for the exam.

A Final Lecture Exam (worth 45% of your grade) will be held in April 2014, as arranged by the University of Saskatchewan or your College. If you are absent for a legitimate reason **you may apply for a Deferred Final Exam within THREE WORKING DAYS of the missed exam to Student Services or to your biology lecturer.**

LABORATORIES:

Scheduled Lab Times

Local Lab schedules will vary.

Please note: the lab schedule listed at the end of this document is a suggested lab schedule, which would match the lectures and labs as closely as possible. However due to distance and other circumstances this schedule may not be possible. Please make sure you have contacted your local college to determine the final lab schedule for your region. Make sure you have registered for a lab section. You are expected to attend (and be on time for) all scheduled labs, review labs and final lab exams.

The current edition of the Lab Manual for Biology 120.3 is required for all labs (this item can be purchased at the University of Saskatchewan Book Store and other locations as announced). Please make sure that you read the lab instructions before going to your scheduled lab section. For your first lab you will also need a 2H, 3H or 4H drawing pencil, an eraser, a metric ruler, and a calculator.

Laboratory Evaluations

There are regular assignments, drawings and quizzes required for successful completion of the laboratory component of the course, and these will be outlined in the Lab Manual or during the first lab period. These will be worth 20% of your grade.

There will be a Final Laboratory Exam toward the end of term. This is also worth 20% of your grade. If you miss a lab assignment or the final lab exam it is **necessary for you to present documentation (e.g. medical certificate, death notice or verification) explaining the absence**, to assist in the determination of whether permission will be granted for you to complete the lab assignment or final lab exam. **Students absent for an assignment or final exam must advise their instructor in person, by telephone or by e-mail and initiate arrangements for completion**

of the required work, within THREE WORKING DAYS of the missed assignment or exam. If no arrangements are made, a grade of **zero** will be applied to the missed assignment or exam.

STUDENTS WITH A DISABILITY:

Disability Services for Students provides accommodations and services to part-time and full-time students with temporary and permanent disabilities. Services include exam accommodations, note-taking services, referrals for assessments, counselling and other advocacy support.

Students are required to register with appropriate medical documentation. Students with a disability or students interested in more information about these services please contact your local college's Student Services, and then contact Disability Services for Students at 966-7273, or visit **www.students.usask.ca/disability**

The College Student Services or University of Saskatchewan Disability Services will then contact your biology instructor(s). It is not necessary, but the student may also wish to inform the instructor(s) of any accommodations previously arranged or required.

OTHER ASSISTANCE:

If you are having difficulty with the course material, please seek assistance from your instructor, student services and/or other services. Please remember your instructor is there to help you both in class and out of class. Do not be afraid to ask questions after class or by email.

ACADEMIC HONESTY:

The College follows the rules and guide-lines set out by the University of Saskatchewan as it pertains to academic honesty. It is the responsibility of all students to uphold the highest standards of integrity and honesty with respect to all of their academic work. It is in your best interest and is your responsibility to make yourself aware of the implications and consequences of engaging in academically dishonest activities. Please visit:
http://www.usask.ca/university_secretary/honesty/index.php

Penalties vary but a common punishment for a minor first offence is a grade of 0% on the exam or assignment and an additional -10% on the final course grade.

REQUIRED COURSE WORK:

It is to the student's benefit to be on time and attend all lectures and labs. Completion of all assignments and exams is required to pass this course.

LECTURE AND LAB SCHEDULE FOR BIOLOGY 120.3 (2013-2014 T2)

(Approximate number of 50 minute lectures indicated in brackets)

TERM I	LECTURE TOPIC	LAB TOPIC (see local lab instructor for exact schedule)
WEEK 1 (Jan. 2,3)	NO LECTURE	NO LAB
WEEK 2 (Jan. 6-10)	Introduction (1); Water & Light (1); Life & Life History (1)	NO LAB
WEEK 3 (Jan. 13-17)	Life & Life History (1) Microscopes & Cells (2)	NO LAB
WEEK 4 (Jan. 20-24)	Cell Biology (3)	LAB 1 - Introduction, Microscopy, and Cells
WEEK 5 (Jan. 27 - Jan. 31) *From La Ronge*	Cell Biology (2) Cell Membranes & Transport (1)	LAB 2 - Eukaryotic Cell Structure and Function
WEEK 6 (Feb. 3-7) *From La Ronge*	**Midterm I** Cell Membranes & Transport (2)	NO LAB
WEEK 7 (Feb. 10-14)	Cell Cycle & Meiosis (3)	LAB 3 - Osmosis and Cell Division
WEEK 8 (Feb. 17-21)	MIDTERM BREAK	
WEEK 9 (Feb. 24 – 28)	DNA, Genes & Genomes (3)	LAB 4 -Sexual Life Cycles and Meiosis
WEEK 10 (Mar. 3-7)	Genetics (3)	LAB 5 - Intro to Genetics
WEEK 11 (Mar. 10-14)	Genetics (3)	LAB 6 - Human Genetics and Gene Linkage
WEEK 12 (Mar. 17-21) *From La Ronge*	Gene Expression & Proteins (3) ***Will request 4:30 to 8pm lecture Or Midterm to be written on another evening this week***	**Midterm II** LAB 7 - Biotechnology: Techniques and Applications
WEEK 13 (Mar. 24-28)	Mutation & Evolution (3)	Review Lab
WEEK 14 (Mar. 31- April 4)	Energy & Enzymes (3);	**Final Lab Exam**
WEEK 15 (Apr. 7,8)	Cellular Respiration (1); Photosynthesis (2)	
Lecture Exam	**TBA**	

BIOLOGY 120.3 LECTURE OUTLINE AND TEXT READINGS (2013-2014 T2)

LECTURE TOPIC	TEXTBOOK READING
Additional readings	All of Purple Pages (Section F) Chapter 15
Introduction, Water & Light (2)	F2-F5 F13, F-15 to F-19, F21 F20 to F43 Chapter 1, Sec. 1.1 to 1.4
Life & Life History (2)	F-20-F43 F50-F51 Chapter 2, intro Chapter 3, Intro to Sec. 3.4
Microscopes & Cells (2) Cell Biology (5)	F6-F7 Chapter 2 Chapter 13, Sec. 13.4h Chapter 8, pp 163, 172-173 Chapter 3, Sec. 3.5
Cell membranes & Transport (3)	Chapter 5
Cell Cycle & Meiosis (3)	Chapter 8 Chapter 12, pp 264-265, Sec. 12.4 Chapter 9, Sec. 9.1, 9.3
DNA, Genes & Genomes (3)	F37 to F39 Chapter 12 Chapter 13, pp 283-287 Chapter 9, pp 181-190
Genetics (3)	Chapter 10, Sec. 10.1 Chapter 11, pp 249-250
Genetics (3)	Chapter 10, Sec. 10.2 Chapter 11
Gene Expression & Proteins (3)	F-28 to F36 Chapter 13 Chapter 14, Sec. 14.2-14.3
Mutation & Evolution (3)	Chapter 11, Sec. 11.3 Chapter 13, Sec. 13.4i Chapter 16
Energy & Enzymes (3);	Chapter 4
Cellular Respiration (1); Photosynthesis (2)	Chapter 6 Chapter 7