



## COURSE SYLLABUS

COURSE TITLE:	BIOL 120.3 The Diversity of Life		
COURSE CREDITS:	3.0	DELIVERY:	Lecture & Practicum (Lab)
CLASS START DATE:	Jan. 3 <sup>rd</sup> , 2019	LAB START DATE:	Jan 23 <sup>rd</sup> , 2019 (La Ronge) Jan 25 <sup>th</sup> , 2019 (Buffalo)
CLASS LOCATION:	Northlands College		
CLASS TIME:	9:00 am to 10.30 am (Tues. & Thur.)	LAB LOCATION:	Northlands College
		LAB TIME:	Wednesday: 1pm to 4 pm in La Ronge only Friday: 1pm to 4pm in La Ronge and Buffalo Narrows

### Course Description

This course is designed to introduce you to the vast and exciting field of biology, with a focus on events that are not normally visible to the naked eye. Covering topics in cell biology, genetics and evolution, Biology 120.3 is one of two foundation courses for biology majors and for students going into Natural Sciences (Program C). Biology 120.3 also counts towards the biology requirements for several programs in different colleges at the University of Saskatchewan.

Prerequisites: Biology 30 or BIOL 107 or BIOL 108.

Note: Chemistry 30 is strongly recommended. Students with credit for BIOL 110 will not receive credit for BIOL 120.

### Course Overview

Every week Biology 120 will require 3 hours of lecture, 3 hours of lab and a minimum of 3 hours of study. The lecture will be televised (live stream) to Buffalo, La Loche and Ilex. Labs will be delivered face-to-face in La Ronge and Buffalo campuses. Please contact your lab instructors concerning problems with the lab. Asking questions during lecture and lab, and generally engaging in the material is extremely beneficial.

### Learning Outcomes

By the completion of this course, students will be expected to:

1. Improve your critical thinking skills and problem-solving abilities.
2. Understand the basics of a cell and the cell theory.
3. Understand cell division and genetics.
4. Understand the molecular basis for variation and natural selection.
5. Understand enzymes and bioenergetics.

6. Obtain laboratory experience to help link these topics together, with hands-on exercises leading to you understanding the use of microscopes to visualize cells and tissues, and how to solve basic genetics problems.

Information on literal descriptors for grading at the University of Saskatchewan can be found at:

<http://students.usask.ca/current/academics/grades/grading-system.php>

Please note: There are different literal descriptors for undergraduate and graduate students. More information on the Academic Courses Policy on course delivery, examinations and assessment of student learning can be found at:

[http://www.usask.ca/university\\_secretary/council/academiccourses.php](http://www.usask.ca/university_secretary/council/academiccourses.php)

The University of Saskatchewan Learning Charter is intended to define aspirations about the learning experience that the University aims to provide, and the roles to be played in realizing these aspirations by students, instructors and the institution. A copy of the Learning Charter can be found at: [http://www.usask.ca/university\\_secretary/LearningCharter.pdf](http://www.usask.ca/university_secretary/LearningCharter.pdf)

## Class Schedule

(Approximate number of hours indicated in brackets)

Dates	Major Lecture topics	LAB TOPIC (see lab manual for details)
1 Jan. 3 and 8	Course Introduction (0.5); Water, Life and Life History (2.5)	--
2 Jan. 10, 15, 17 and 22	Microscopy, Cell biology and central Dogma (6)	--
4. Jan. 24 and 29	Cell membranes and Transport (3)	Lab 1 Jan 23 (wed.) and Jan 25 (Fri.)
5. Jan. 31, Feb 5, 7,12 and 14	DNA Replication, Cell Cycle, Ploidy, Meiosis, Mitosis, Genetics and Cancer (7.5)	Lab 2 Jan 30 (Wed.) and Feb. 1 (Fri.) Lab 3 Feb 6 (Wed.) and Feb. 8 (Fri.) Lab Exam 1 Feb 13 (Wed.) and Feb. 15 (Fri.)
8. Feb. 18-22	<b>Mid Term Break</b>	<b>No Lab</b>
9. Feb. 26 and 28	Genetic Technologies (3)	Lab 4 Feb. 27 (Wed.) and Mar. 1 (Fri.)
10. Mar. 5, 7 and 12	Gene Expression, Central Dogma and Mutations (4.5)	Lab 5 Mar. 6 (Wed.) and Mar. 8 (Fri.)
11. Mar. 14 and 19	Energy and Enzymes (3)	Lab 6 Mar. 13 (Wed.) and Mar. 15 (Fri.)
12. Mar. 21 and 26	Cellular Respiration (3)	Lab 7 Mar. 20 (Wed.) and Mar. 22 (Fri.)
13 Mar. 28 and Apr 2	Photosynthesis (3)	Lab Review Mar. 27 (Wed.) and Mar. 29 (Fri.)
14. Apr. 4	Course wrap-up and Review (1.5)	Lab Exam 2 Apr. 3 (Wed.) and Apr. 5 (Fri.)

## Lab Schedule

The lab schedule consists of 10 lab periods, each period is three hours in length (except for exam periods). The exact lab dates and times are yet to be determined, however, you can expect the labs to start in January and follow this layout:

Lab 1	Microscopes and Cells
Lab 2	Eukaryotic Cell Structure and Function
Lab 3	Osmosis and Cell Division
Lab Exam 1(15% of final grade)	
Lab 4	Sexual Life Cycles and Meiosis
Lab 5	Introduction to Genetics
Lab 6	Human genetics and Gene Linkage
Lab 7	Biotechnology: Techniques and Applications
Review	
Lab Exam 2 (15% of final grade)	

### Laboratory class information:

1. Labs begin in January. Students are expected to attend and be on time for all scheduled labs, review labs and final lab exams.

**Please Note: La Ronge class will be divided into 2 lab groups with one group having labs on Wednesdays and other on Fridays. Students in the west Corridor consisting of Ilex, Buffalo Narrows and La Loche would have labs on Fridays only (1 pm to 4pm) starting Jan. 25th**

2. **The current edition of the Biology 120.3 lab manual is required for all labs** (this item can be purchased from the Bookstore in Marquis Hall). For your labs you may also need a 2H, 3H or 4H drawing pencil, loose-leaf or white (unlined) drawing paper, a calculator, an eraser and a metric ruler.

3. Lab component of this course is worth 50% of final grade and is divided into:

- (i) Lab Assignments, quizzes etc.      20%
- (ii) Lab Exam I                              15%
- (iii) Lab Exam II                            15%

## Course & Lab Instructors

### **Course Instructor Contact Information:**

Dr. Indermohan S Rawal                              E-mail: [Rawal.inder@northlandscollege.sk.ca](mailto:Rawal.inder@northlandscollege.sk.ca)

### **Lab Instructors Contact Information:**

Kristy Todd (La Ronge)                              E-mail: [todd.kristy@northlandscollege.sk.ca](mailto:todd.kristy@northlandscollege.sk.ca)

Valerie Lipton (Buffalo Narrows)                              E-mail: [lipton.valerie@northlandscollege.sk.ca](mailto:lipton.valerie@northlandscollege.sk.ca)

**Office Hours:** 9 am – 4 pm; students can contact me every Thursday between 1 pm - 4 pm and can also contact me by email.

## Required Resources

### **Textbooks/Readings**

*BIOLOGY: Exploring the Diversity of Life: Volume 1, 4th Can. Ed., by Russell*, Nelson Pub. (either printed copy or e-text). Highly recommended. **Please note:** If you intend to enroll in Biol 121 or Biol 224 it is cheaper to buy the full text, rather than the individual volumes. Textbook readings are available on the next page.

*2018-2019 Lab Manual for Biology 120.3. University of Saskatchewan, Biology Department.* Required. The lab manual should be read prior to each lab, to ensure all work is completed within the lab time.

Lecture Topics	Textbook Readings
Additional Readings	Purple Pages
Water Life and Life History	Purple Pages Chapter 21
Microscopy Cell Biology and Central Dogma	Chapter 2 Chapter 11 Sec. 11.1 and 11.2 Chapter 12 Sec. 12.1
Cell membranes and Transport	Chapter 4
DNA replication, Cell Cycle, Ploidy, Mitosis, Meiosis, Recombination, Genetics and Cancer	Chapter 7-11
Genetic Technologies	Chapter 14
Gene Expression and Mutations	Chapter 12-13
Energy and Enzymes	Chapter 1 and 3
Cellular Respiration	Chapter 5
Photosynthesis	Chapter 6

## Downloads

Please note that Powerpoint slides or lecture notes will be provided to you as a courtesy.

## Grading Scheme

Lecture Quiz/Assignments	10%
Midterm Exam	15%
Final Exam	25%
Lab Assignments and Quizzes	20%
Lab Exam 1	15%
Lab Exam 2	15%
Total	100%

## **Evaluation Components**

### **Lecture Quizzes/Assignments:**

**Value:** 10% of final grade

**Date:** on-going basis

**Type:** Multiple Choice/Short answers/Assignments

**Description:** As mentioned above these quizzes or assignments will be based on the lecture topics, for short answers/assignments students are expected to thoroughly understand the topics and write answers in their own words.

### **Midterm Exam:**

**Value:** 15% of final course grade

**Date:** Exact date TBD

**Length:** 50 minutes

**Format:** Multiple-choice questions, may include true/false statements and short answer questions as well.

**Description:** Included material will be announced in class. Calculators and all other electronic devices are not allowed.

### **Final Exam:**

**Value:** 25% of final course grade

**Date:** Consult Final Exam Schedule

**Length:** 3 hours

**Format:** Multiple-choice questions, may include true/False statements along with short answer questions as well.

**Description:** The exam is comprehensive in that it will cover all lecture material. However, material delivered after the midterm exam will be emphasized. Calculators and all other electronic devices are not allowed.

### **Lab Assignments & Quizzes:**

**Value:** 20% of final course grade

**Date:** see Laboratory Schedule

**Format:** Quizzes (written); spot tests; short answer, fill in blanks, T/F, diagrams, Microscope set up

**Description:** The quizzes will be 15-20 minutes in duration and test material from the previous two or three lab exercises. The questions will generally require a short written answer. Spot tests involve images shown in PowerPoint and short questions about the specimen shown. No phones, laptops, tablets or other material allowed.

### **Lab Exam I**

**Value:** 15% of final course grade

**Date:** see lab Schedule

**Format:** This will be a mixture of spot test, short written answers and project.

**Description:** Focus on Labs 1-3

## Lab Exam II

**Value:** 15% of final grade  
**Due Date:** see lab Schedule  
**Format:** Spot test, short answers  
**Description:** Focus on Labs 4-7

## University of Saskatchewan Grading System

Students in BIOL 120 are reminded that the University has established a grading system to be used in all of its courses. Information on literal descriptors for grading at the University of Saskatchewan (reproduced below) can be found at:

<http://students.usask.ca/current/academics/grades/grading-system.php>

## Submitting assignments and Late Assignments

All exams, quizzes and assignments are to be completed during the assigned class time. Any assignments handed in late or remaining uncompleted will be assigned a mark of zero. Please see above for other rules and regulations around missed exams. Please refer to the current lab manual for other policies around missed lab assignments.

## Criteria that must be met to Pass

A recorded grade for all assignments, quizzes and exams, with a total grade of 50%, is required to pass this course. INF (incomplete failure) can be applied to those students not attending the final lab exam and to those students not attending the lecture final exam.

## Scheduling of Exams

Midterm, final and lab examinations must be written on the date scheduled, and at the location scheduled. See above schedule for the midterm exam date.

Final examinations may be scheduled at any time during the examination period (First week of Dec); students should therefore avoid scheduling travel plans, employment, or other commitments for this period. If a student is unable to write an exam through no fault of his or her own for medical or other valid reasons, documentation must be provided and an opportunity to write the missed exam may be given. Students absent for a midterm exam must advise their lecturer in person, by telephone or by e-mail and initiate arrangements for writing a Deferred Midterm Exam. Contact must be made within **three working days** of the missed exam and **supported by appropriate documentation**, in order to avoid being assigned a grade of zero for the exam. The same rules apply for a Deferred Final Exam, but applications are made to the Dean's Office of your college.

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 students 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.

Students are encouraged to review all examination policies and procedures:

<http://www.usask.ca/calendar/exams&grades/examregs/>

Consult Lab Manual for the procedure to follow for a missed Lab Exam.

## **Student Feedback**

Marks from machine-graded exams are usually available within one week. The multiple-choice questions will not be posted after the exam. Students will be encouraged to meet with the instructor to review their performance.

## **Attendance Expectations for Laboratory Classes**

Students are expected to attend all scheduled lab periods. Students are advised to consult the lab manual for further information about BIOL 121 procedures to follow when they are too ill to attend the lab period (and/or lab exam) or are facing extenuating personal circumstances.

## **Integrity Defined (from the Office of the University Secretary)**

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct ([http://www.usask.ca/university\\_secretary/honesty/StudentAcademicMisconduct.pdf](http://www.usask.ca/university_secretary/honesty/StudentAcademicMisconduct.pdf)) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals ([http://www.usask.ca/university\\_secretary/honesty/StudentNon-AcademicMisconduct2012.pdf](http://www.usask.ca/university_secretary/honesty/StudentNon-AcademicMisconduct2012.pdf))

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at:  
[http://www.usask.ca/university\\_secretary/pdf/dishonesty\\_info\\_sheet.pdf](http://www.usask.ca/university_secretary/pdf/dishonesty_info_sheet.pdf)

***Important Note:*** Additional information about student misconduct specific to BIOL 120 can be found in the laboratory manual. BIOL 120 students are required to read and understand the information about misconduct that is presented in the laboratory manual.

## **Examinations with Access and Equity Services for Students (AES)**

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Access and Equity Services for Students(AES) if they have not already done so. Students who suspect they may have disabilities should contact AES for advice and referrals. In order to access AES programs and supports, students must follow AES



policy and procedures. For more information, check <http://www.students.usask.ca/disability/>, or contact AES at 306-966-7273 or [aes@usask.ca](mailto:aes@usask.ca).

Students registered with AES may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through AES by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by AES.

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