UNIVERSITY OF SASKATCHEWAN

Department of Biology

COURSE SYLLABUS

COURSE TITLE:	**BIOL 120.3.01 - The Nature of Life**		
COURSE CODE:	82040	TERM:	Fall 2017
COURSE CREDITS:	3.0	DELIVERY:	Lecture & Practicum (Lab)
CLASS SECTION:	01	START DATE:	Wednesday, Sept 6, 2017
CLASS LOCATION:	Health Sciences Building, Rm 1150	CLASS TIME:	12:30 to 1.20 pm (M/W/F)
LAB LOCATION:	Biology Building, Rm 202 or Rm 204		

LAB TIME: 8.30 to 11.20 am (T,Th) or 1.30 to 4.20 pm (M,T,W,Th,F) or 5.30 to 8.20 pm (M,W,Th).

WEBSITE: via Blackboard

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, BIOL 120.3 is one of two foundation courses for biology majors and for students going into Natural Sciences (Program C). BIOL 120.3 also counts towards the biology requirements of a number of programs in different colleges across campus. BIOL 121.3 - The Diversity of Life - is the sister course to BIOL 120.3, and focuses on biological diversity, evolution, adaptations of organisms to specific environments, and the factors influencing changes in biodiversity over time and space.

ANTICIPATED LEARNING OUTCOMES

By the end of BIOL 120.3, you should be able to describe, classify, and discuss aspects of cell theory, cell division, genetics, bioenergetics, and the molecular basis for variation and natural selection. The laboratory portion of the course will help link these topics together with hands-on exercises. After completing the lab section of the course, you should know how to use a microscope to visualize cells and tissues and how to solve basic genetics problems. Detailed learning objectives for each lecture topic will be posted in Blackboard Learn.

INSTRUCTOR CONTACT INFORMATION

Lecturers:

Dr. Jorge Chedrese
Biology RM 323 966-4446
jorge.chedrese@usask.ca

Dr. Doug Smith
Biology RM 150 Biology 966-4415
dh.smith@usask.ca

Online Quizzes (Mindtap)
Mr. Paul Dick, M.Sc. 966-4493
Biology Rm 150 Biology
paul.dick@usask.ca

Ms. Gillian Murza, M.Sc.
Lab Coordinator
Rm 216 966-4423
gillian.murza@usask.ca

INSTRUCTIONAL RESOURCES: TEXTBOOK AND LAB MANUAL

The required textbook for BIOL 120.3 is *Biology - Exploring the Diversity of Life (3rd Canadian Edition)* by Russell *et al.*, Nelson Education Ltd. This textbook, which is available from the U of S Bookstore in a hard-copy, mini-version (just the chapters utilized in BIOL 120.3) and in its full length (for students who plan on taking BIOL 120.3 and 224.3) as either an online only or a hard-copy textbook, will be referred to regularly during lectures both in terms of content and for the use of visual aids. It is also helpful for reviewing the material. You will not need to bring your textbook to class. The textbook material we will be covering is outlined on the last page of this outline and will be the core testable material for the course. Copies of the textbook will be available from the reserve desk in the Science Library, for short term, in library use. The lectures are intended to highlight and reinforce key concepts. Please see the *Learning Objectives Summary*, which will be posted on Blackboard with this outline, for a more detailed description of the topics you will be responsible for on the midterm and final exams. All regular, on-campus sections of the course will sit common midterm and final exams.

The Lab Manual for BIOL 120.3 (2017-18 Edition) is required for the course, and must be brought to each lab session. It is available for purchase from the U of S Bookstore.

ONLINE RESOURCES

There are a number of online resources to help support your learning in BIOL 120.3. We highly recommend the use of these resources as a means to help increase your performance and success in this course.

Blackboard Learn (https://bblearn.usask.ca) is where you will be able to access the course's detailed learning objectives, some of the instructor's lecture notes, and any other resources from your instructor.

When purchasing a copy of the textbook (including the electronic version) from the U of S Bookstore, the individual student will also receive access to Mindtap. Mindtap is an online platform that provides access to a digital copy of the textbook, and to other resources like animations and self-tests. Mindtap also will be utilized to administer the weekly, online quizzes (see details, below).

STRUCTURED STUDY SESSIONS (University Learning Centre)

BIOL 120 Structured Study Sessions are weekly *peer-led study sessions that run throughout the term. These regularly scheduled study sessions give you the opportunity to review and complete exercises on the course material, revisit more difficult concepts, and practice your exam-writing skills through mock exam sessions for the midterm and final exams.

All BIOL 120 students are welcome to attend structured study sessions. Pre-registration is not required and attendance is free. All that you need to do is show up to the session at the scheduled time and location and be open to learning! Watch your course Blackboard site for the schedule of sessions.

*Note: Structured Study Sessions are run by experienced students who have already completed BIOL 120.3, and achieved an excellent grade. Research has shown that students who attend Structured Study Sessions, on average, achieve higher grades than those who do not.

STUDENT ADVICE RECOMMENDER AGENT (SARA)

Each week through Blackboard, you will receive tailored, personalized advice from SARA. This advice will guide you to additional University and online resources to help you succeed in this course.

STUDENT REVIEW AND COURSE PREPARATION (PURPLE PAGES)

There is prerequisite material that will not be covered directly in lectures. This material is expected knowledge from high school courses. Students should review this information ahead of time because it is important for the understanding of many basic biological topics we will cover.

In Russell *et al.*, you will find this section in the middle of the book denoted by the purple colouring (pgs. F2-F56). This section contains basic information about the chemical and physical foundations of Biology, as well as a review of the macromolecules that make up living things (proteins, nucleic acids, carbohydrates and lipids). Knowledge of some of this information will be needed to understand course content and answer questions on the lab quizzes, midterm and final exams.

EVALUATION

Lecture Examinations: Students must bring their current University of Saskatchewan student card to all exams and be prepared to present it for verification purposes. It is forbidden for students to utilize any type of electronic device during an exam (e.g., cell phone, dictionary, translator, etc.) (see Academic Honesty section below). Also bring an HB pencil plus an eraser.

There will be one **Lecture Midterm Exam** to be held outside of class time on the evening of **Thursday, October 12th 2017 from 5:30-6:30 pm**, at a location to be announced. In the event that you have a legitimate U of S timetabling conflict, you must contact your instructor right away in order to make arrangements for an alternate date for you to write a Deferred Lecture Midterm Exam. If you are absent from the October 12th midterm exam due to a medical emergency or another exceptional circumstance, you must advise your instructor within THREE WORKING DAYS of the missed exam providing explanatory documentation to initiate discussion about whether you qualify for a Deferred Lecture Midterm Exam. If you do not advise your instructor within three working days, or do not have an acceptable excuse, a grade of zero will be assigned for the Lecture Midterm Exam.

The **Lecture Final Exam** will be arranged by the Registrar's Office to take place within the exam period of **December 8-22, 2017**. Accommodations will **not be made** for students making travel arrangements during this time frame. If a student is absent from the Final Lecture Exam for a legitimate reason, within THREE WORKING DAYS of the missed exam, the student may apply for consideration of a Deferred Lecture Final Exam to the Dean's Office of the College in which the student is registered.

Weekly Online Quizzes: Starting the week of September 11, there will be approx. 10 weekly online quizzes that are accessed on Mindtap through the Blackboard Course Tools link in PAWS. Each quiz will be available to you for a total of 168 hrs, to complete between Monday at midnight until Monday at midnight of the following week. You will be allowed to attempt each quiz up to 3 (three) times, and your highest score achieved will be recorded. Late quiz attempts will not be accepted. These quizzes will account for 10% of your final course grade.

Laboratory Examinations: There will be two Laboratory Exams. Lab Final 1 will be written during the **week of Oct. 2 - 6, 2017**. Lab Final 2 will be written during the week of **Nov. 27 – Dec. 1, 2017**. Consult the 2017-18 Lab Manual for the procedure to follow for a missed Lab or Lab Exam.

There are other regular assignments and quizzes required for successful completion of the laboratory component of this course, and these are outlined for you in the 2017-18 version of the Lab Manual.

GRADES

The final course grade is calculated as follows:

Lecture Midterm Exam	12.5%
Lecture Final Exam	37.5%*
Weekly online quizzes (Mindtap)	10%*
Lab Assignments and Quizzes	15%
Lab Final 1	10%
Lab Final 2	15%
TOTAL	**100%**

* This is the first year that Mindtap will be utilized for the weekly online quizzes in this course. However, some students may have purchased a used copy of the textbook, which does not provide access to Mindtap. Therefore, if a student chooses not to participate in the weekly online quizzes, the Lecture Final Exam for such students will have a weighting of 47.5% (rather than 37.5%).

IMPORTANT ACADEMIC DATES

Tues. Sept 26th - Last day to withdraw from Fall Term 1 classes with 75% tuition credit.
Tues. Oct 3rd - Last day to withdraw from Fall Term 1 classes with 50% tuition credit.
Wed. Nov 15th – Last day to withdraw from Fall Term 1 classes.

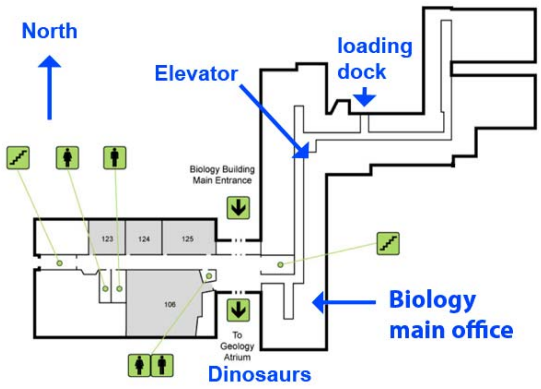
LABORATORIES

Labs begin in the week of September 11th, 2017. PAWS registration will give you a time and day of the week for your lab section, but room assignments are made by the Lab Coordinator, Ms. Gillian Murza. Lab room assignments will be posted on Blackboard Learn immediately before your first scheduled lab (check this list when you arrive for the lab, to determine in which room you have been placed). Hard copies of the lists also will be posted on the bulletin board outside Biology Rm. 202, on the second floor of the Biology Building. Students are expected to attend, and be prepared for, all scheduled labs, lab reviews and final lab exams. The general lab schedule is provided on the final page of this syllabus.

The 2017-2018 edition of the Lab Manual for Biology 120.3 is **required for all labs**. Please make sure that you have read the lab instructions and are prepared for the assigned exercises before going to each of your scheduled lab sessions. Any other questions regarding the lab should be directed to the laboratory instructional staff in Rm. 216 of the Biology Building.

STUDENTS WITH A DISABILITY

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Disability Services for Students (DSS) if they have not already done so. Students who suspect they may have disabilities should contact DSS for advice and referrals. In order to access DSS programs and supports, students must follow DSS policy and procedures. For more information, check http://students.usask.ca/disability/, or contact DSS at 966-7273 or dss@usask.ca. Students registered with DSS may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through DSS by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated, by the deadlines established by DSS.



Students requiring an elevator for access to the second floor in the Biology Building (teaching labs and some faculty offices) may use the elevator in the Museum of Natural Sciences. Alternatively, or if offices on the 3rd floor of the Biology Building need to be accessed, there is an elevator located at the north end of the research wing, opposite Room 130.

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 be familiar with the Regulations on Academic Student Misconduct https://www.usask.ca/secretariat/student-conduct-appeals/academic-misconduct.php as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (https://www.usask.ca/secretariat/student-conduct-appeals/StudentNon-AcademicMisconduct.pdf).

Chapters and sections in Russell et al: *Biology, Exploring the Diversity of Life* (3rd Cdn. Edn.)

Please note: Materials in the following sections from Russell *et al.* constitute all of the testable material for the lecture exams. The lecture presentations are to highlight and synthesize essential concepts, and to provide opportunities for class discussion and interaction.

Chapter 2 – The Cell: an Overview – §2–2.5c
Chapter 8 – Cell Cycles – §8–8.4
Chapter 9 – Genetic Recombination (Meiosis) and Life Cycles – §9.3a-d

Chapter 3 – Defining Life and its Origins – §3–3.5f
Chapter 4 – Energy and Enzymes – §4–4.5d, 4.6a, 4.6d
Chapter 5 – Cell Membranes and Signaling – §5–5.6b
Midterm Lecture Exam – Thursday, October 12, 2017 from 5:30 – 6:30pm (Room to be announced)
Chapter 10 – Mendel, Genes, and Inheritance – §10–10.2
Chapter 11 – Genes, Chromosomes, and Human Genetics – §11–11.2
Chapter 12 – DNA Structure, Replication, and Organization – §12–12.3
Chapter 13 – Gene Structure and Expression – §13–13.4
Chapter 6 – Cellular Respiration – §6–6.7d
Chapter 7 – Photosynthesis – §7–7.4c
Final Lecture Exam (Comprehensive – Covers all of the course's testable material related to lectures)

Number of Lectures (approx.**) for Section 01 (M/W/F 12:30–1:20pm at Rm 1150, Health Sciences Building) and Lab Schedule during September-December, 2017.**

	Lecture Topic	**Lab Number and Topic**
Week 1 Sept 6 & 8	Introduction Chedrese	**NO LAB**
Week 2 Sept 11, 13 & 15	Cell Biology Chedrese	1. Introduction, Microscopy and Cells
Week 3 Sept 18, 20 & 22	Cell Biology, Cell Cycle Chedrese	2. Eukaryotic Cell Structure and Function
Week 4 Sept 25, 27 & 29	Meiosis, Origin of Life Chedrese	3. Osmosis and Cell Division
Week 5 Oct 2, 4 & 6	Energy and Enzymes Chedrese	**Lab Final 1 (written Oct 2–6)**
Week 6 Oct 9	**No Lecture – Thanksgiving**	
Oct 11 & 13	Membrane Structure Chedrese	**NO LAB**
Thursday, Oct 12	**Lecture Midterm Exam – *Note*: Held from 5:30-6:30pm, outside of class time**. Location will be announced.	
Week 7 Oct 16, 18 & 20	Membrane Transport Mendelian Genetics Chedrese - Smith	4. Sexual Life Cycles and Meiosis
Week 8 Oct 23, 25 & 27	Genetics Smith	5. Introduction to Genetics
Week 9 Oct 30, Nov 1 & 3	Human Genetics DNA Structure and Replication Smith	6. Human Genetics and Gene Linkage
Week 10 Nov 6, 8 & 10	Gene Expression Smith	7. Biotechnology: Techniques and Applications
Week 11	**Midterm Break (No Lectures or Labs during November 13-17)**	

Week 12 Nov 20, 22 & 24	Cellular Respiration Smith	Review Lab
Week 13 Nov 27, 29 & Dec 1	Photosynthesis Smith	**Lab Final 2 (written Nov 27 – Dec 1)**
Week 14 Dec 4 & 6	Completion of Metabolism Review Smith - Chedrese	**NO LAB**

FINAL LECTURE EXAM SCHEDULE: December 8-22, 2017.
Date and location of the 3-hour BIOL 120.3 Final Lecture Exam will be announced by the Registrar's Office.