UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

1. Course: BIOL 451 – Conservation Biology

Lectures:	L01	MWF	15:00-15:50	AD 140	WINTER 2020
Tutorials:	T01/02/03	T	11:00/13:00/15:00	SA 125	
	T04/05/06	R	11:00/13:00/15:00	SA 123/SA 123/SA 243	

Instructor:
Dr. Paul Galpern BI 334 220-7436 paul.galpern@ucalgary.ca

Course Site: D2L: BIOL 451 L01 – (Winter 2020) – Conservation Biology
Department of Biological Sciences BI 186 220-3140 biosci@ucalgary.ca
Note: Students must use their U of C account for all course correspondence.

2. **Prerequisite(s)**: Biology 313
See section 3.5.c in the Faculty of Science section of the online Calendar.

3. **Course content and grading:**
The University policy on grading and related matters is described in F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Term work 60%
Final exam 40%
This course has a registrar scheduled final exam.

Your score on the ***term work*** **(60%)** portion will be determined using specifications grading. Under this system you can work towards a particular performance level by meeting the specifications for that level. The *specs* are always given ahead of time. To calculate your term work score, we will reference the TERM WORK SPECIFICATIONS table (see next page) and apply the following algorithm:

STEP 1. We will identify the highest scoring column (i.e. rightmost) in which you have met or exceeded at least SIX of the specifications (or rows) in that column. This becomes *the base* column. If there is no base column or it is the lowest scoring column GO TO STEP 4, otherwise GO TO STEP 2.

STEP 2. If you have met or exceeded SEVEN specifications in the base column, you will receive the score at the top of the column. If this is true, STOP; otherwise GO TO STEP 3.

STEP 3. If there is ONE (and only one) assessment where you have met the specification in the column immediately to the left of the base column, you will a receive the score at the top of the base column minus 5 points. If this is not true (e.g. one assessment falls two or three columns to the left) you will receive the score at the top of the column to the left of the base column. STOP

STEP 4. You will receive the score at the top of the lowest-scoring column if you meet or exceed ALL the specifications in this column. Otherwise (i.e., you do not meet all specifications), you will receive 0 points for the course work, and will have an insufficient score to pass (i.e., your final grade will be an F). STOP.

The ***final exam*** **(40%)** portion is a summative activity assessing your capacity to demonstrate under time constraint: (1) knowledge and understanding of introductory conservation biology concepts; (2) effective application of this knowledge and understanding; and, (3) synthesis and communication skills in the context of topical issues in the discipline. It will be graded using a traditional point system.

Your **final grade** in the course will be determined by adding the ***term work score*** (out of 60) to your ***final exam score*** (converted to a score out of 40), and then referencing this table to convert it to a letter grade:

Letter Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Min. Percent Required	95%	85%	82%	79%	76%	72%	68%	64%	60%	55%	50%

Assessment:	TERM WORK SPECIFICATIONS (30 out of 60)	(40 out of 60)	(50 out of 60)	(60 out of 60)
Content modules *Performance type: Knowledge, Understanding, Application*	Complete 8/10 modules with a score of 70% or higher	Complete 9/10 modules with a score of 80% or higher	Complete 9/10 modules with a score of 90% or higher	Complete 10/10 modules with a score of 90% or higher
Top-hat questions *Performance type: Application, Analysis*	55% response rate	65% response rate	75% response rate	85% response rate
Tutorial engagement *Performance type: Disciplinary engagement*	Attend 5/9 required tutorials	Attend 6/9 required tutorials	Attend 7/9 required tutorials	Attend 8/9 required tutorials
Conservation Dialogues‡ *Performance type: Written communication, Synthesis, Evaluation*	Submit 1 written response	Submit 2 written responses	Submit 2 written responses	Submit 3 written responses
	Meet all the specifications for 1 written response*	Meet all the specifications for 2 written responses*	Meet all the specifications for 2 written responses*	Meet all the specifications for 3 written responses*
	Not lead a session	Meet all the specifications for session leadership*	Meet all the specifications for session leadership*	Meet all the specifications for session leadership*
Communicating Conservation† *Performance type: Oral communication*	Not give a presentation	Give presentation BUT not meet all the specifications for the presentation*	Meet all the specifications for the presentation*	Meet all the specifications for the presentation*
YOUR FINAL GRADE WILL REFLECT THE ABOVE TERM WORK (60%) PLUS A FINAL EXAM (40%)				
Anecdotal interpretation of student performance on the term work	"I am developing an understanding of essential concepts in conservation biology. I have not yet demonstrated my capacity to synthesize, evaluate or communicate in this discipline."	"I have a satisfactory understanding of essential concepts in conservation biology. I am developing a capacity to synthesize, evaluate and communicate in this discipline."	"I have a good basis upon which to continue my studies in conservation biology. I have demonstrated a good capacity to synthesize, evaluate and communicate in this discipline."	"I have an excellent basis upon which to continue my studies in conservation biology. I have demonstrated a strong capacity to synthesize, evaluate and communicate in this discipline."

FOOTNOTES FOR TERM WORK SPECIFICATIONS:

*****Specifications for these assessments are provided in separate documents describing the activity, and are available on the D2L course site. <u>These documents provide essential instructions for completing the activities</u>.

‡We will assess UP TO FOUR written responses per student. This provides a limited opportunity to recover if you did not meet all the specifications on a written response. <u>You may NOT correct and resubmit a written response that did not meet the specifications</u>. Each submitted response must be on a different topic.

†If you give the presentation at your first scheduled opportunity, but do not meet all the specifications, you will be given ONE opportunity to present again. This will occur during your regularly scheduled tutorial session, if there are sufficient slots, or if not, at another mutually agreeable time.

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LEARNING OUTCOMES

1. Knowledge, understanding and application of essential concepts in conservation biology.

Topics will include dimensions of biodiversity, threats to biodiversity, solutions to address challenges in conservation biology and a review of several conservation issues in Canada. The interdisciplinary nature of conservation biology at the interface of science and society will be emphasized.

This learning outcome will be assessed as follows:

a. Content modules

Ten modules each with up to ten multiple-choice (or similar) questions will be used to assess your knowledge and understanding of essential concepts and your capacity to apply these in similar or new contexts. Each week, a new module will be posted on the course D2L site by 5:00 pm on Friday (see course schedule for weeks with modules). Answers must be submitted to D2L by the following Friday at 12:00 pm. Feel free to discuss course material with other students and to use lecture notes or other resources to answer these questions. However, because this is an assessment of your individual performance, questions should be answered and submitted by students independently. Successful independent performances on these modules will also increase your confidence in this discipline, and provide preparation for the final exam.

b. Final exam

This learning outcome will be assessed on the final exam using multiple choice, written answer or other question formats.

2. Knowledge, understanding and analysis of methods used in conservation biology.

Topics will include the analysis of hypotheses and predictions, and the interpretation of quantitative data used to support evidence-based decision-making in conservation. Methods for planning and assessing the effectiveness of parks and protected areas will also be introduced.

This learning outcome will be assessed as follows:

a. Top-Hat questions

During lectures, we will pose questions using the Top-Hat system. These will ask you to demonstrate knowledge, understanding or analytical skills related to methods in conservation biology. Top-Hat questions will sometimes occur following in-class or small-group discussion. You will be credited ONLY for your individual response rate to these questions, and not whether your answer was correct.

PLEASE NOTE: The Top-Hat system requires a cell phone or other device. We ask you to ensure that your participation is being properly recorded by Top-Hat. In the unlikely event of any problems, we ask you to please contact Top-Hat to have this resolved. It is your responsibility to ensure your record is correct before the end of regularly-scheduled classes (i.e. by April 15). If you are unable to use the Top-Hat system we will provide other opportunities to record your response rate to these questions. Please make arrangements with Dr. Galpern during the first week of class if you require another approach.

b. Content modules

Content modules will also be used to assess this learning outcome. Please see notes on content modules above.

c. Final exam

This learning outcome will be assessed on the final exam using multiple choice, written answer or other question formats.

3. Synthesis, evaluation, and written communication of topical issues in conservation biology at the interface of science and society.

Topics will include general approaches to conservation in light of the biodiversity crisis and the climate crisis, conservation issues in Alberta, environmental philosophy and ethics, and individual actions to support conservation, among others.

This learning outcome will be assessed as follows:

a. Conservation Dialogues
Please see the ***Conservation Dialogues*** activity sheets available on D2L for full details of this assessment. Working in teams, students will discuss six topics led, each week, by a different session leader. Five-paragraph point of view written responses are used to assess written communication as well as synthesis and evaluation skills related to the topic.

b. Tutorial engagement
Learning occurs best through social interaction, and especially so when the topics are chunky and controversial like these ones! We therefore record your presence at REQUIRED tutorials (noted with check marks in the course schedule) as evidence of engagement in learning within the discipline of conservation biology. Attendance at tutorials that are not required will not be credited.

c. Final exam
This learning outcome will be assessed on the final exam using written answer formats. <u>We will NOT ask you to remember specific details from any of the readings</u>, though you may be asked to reflect on any of the "BIG QUESTIONS" discussed as part of the Conservation Dialogues.

4. Synthesis and oral communication of a current challenge related to the conservation of biodiversity

Topics are specific challenges identified by students relating to one of the following: (a) populations at risk; (b) species at risk; (c) ecosystems at risk; (d) specific habitats at risk; (e) climate crisis impacts on biodiversity; (f) overexploitation.

This learning outcome will be assessed as follows:

a. Communicating Conservation
Please see the ***Communicating Conservation*** activity sheets available on D2L for full details of this assessment. We will assess your synthesis and oral communication skills during a 3 minute oral presentation with up to 3 accompanying slides. This assignment also requires submission of a single page executive summary worksheet.

TENTATIVE COURSE SCHEDULE						(PLEASE REFER TO D2L FOR MOST CURRENT VERSION)
BIOL451		Ch*	LECTURE TOPIC†	LECTURE ACTIVITY†	Module	TUTORIAL ACTIVITY	DUE DATES
W2020		Room: AD 140			D2L	T or R; Room: as assigned	
Jan 13	M	1	Introduction			**(A) Communicating conservation + Conservation dialogues – Intro✓**	
Jan 15	W	2,3	Biodiversity				
Jan 17	F			Conservation in practice			
Jan 20	M	2,3	Biodiversity			**(B) Conservation Dialogues I (Conserving half the Earth)✓**	+Response due at tutorial C
Jan 22	W	2,3	Biodiversity				
Jan 24	F			Quantitative conservation	1		
Jan 27	M	2,3	Biodiversity			**(C) Conservation Dialogues II (Climate crisis and biodiversity)✓**	+Response due at tutorial D
Jan 29	W	2,3	Biodiversity				
Jan 31	F			Quantitative conservation	2		
Feb 3	M	2,3	Biodiversity			*TA feedback on Conservation Dialogues – written responses*	
Feb 5	W	4-6	Threats to biodiversity				
Feb 7	F			Quantitative conservation	3		
Feb 10	M	4-6	Threats to biodiversity			**(D) Conservation Dialogues III (De-extinction)✓**	+Response due at tutorial E
Feb 12	W	4-6	Threats to biodiversity				
Feb 14	F			Quantitative conservation	4		
TERM BREAK							
Feb 24	M	4-6	Threats to biodiversity			**(E) Conservation Dialogues IV (Ecosystem services in oil and gas country)✓**	+Response due at tutorial F
Feb 26	W	4-6	Threats to biodiversity				
Feb 28	F			Quantitative conservation	5		
Mar 2	M	4-6	Threats to biodiversity			**(F) Conservation Dialogues V (Less meat, more vegetables)✓**	+Response due at tutorial G
Mar 4	W	4-6	Threats to biodiversity				
Mar 6	F			Quantitative conservation	6		
Mar 9	M	7,9,10	Solutions for conservation			**(G) Conservation Dialogues VI (Eco-philosophy and protected areas)✓**	+Response due at tutorial H
Mar 11	W	7,9,10	Solutions for conservation				
Mar 13	F			Quantitative conservation	7		
Mar 16	M	7,9,10	Solutions for conservation			**(H) Communicating Conservation – Presentations (9)✓**	Submit to D2L before presenting
Mar 18	W	7,9,10	Solutions for conservation				
Mar 20	F			Conservation planning	8		
Mar 23	M	7,9,10	Solutions for conservation			**(I) Communicating Conservation – Presentations (9)✓**	Submit to D2L before presenting
Mar 25	W	7,9,10	Solutions for conservation				
Mar 27	F			Conservation planning	9		
Mar 30	M		Conservation in Canada			*Communicating Conservation – Second chance presentations*	+Submit to D2L before presenting
Apr 1	W		Conservation in Canada				
Apr 3	F			Conservation planning	10		
Apr 6	M		Conservation in Canada			*Communicating Conservation – Second chance presentations*	+Submit to D2L before presenting
Apr 8	W		Conservation in Canada				
Apr 10	F		GOOD FRIDAY – No Classes				
Apr 13	M		EASTER MONDAY – No Classes			NO TUTORIAL	
Apr 15	W		Review and course wrap-up				
Apr 17	F		NO CLASS				

* Chapter in Sher & Primack, 2nd edition; + Optional submission dates; † Lecture topics and lecture activities subject to change; ✓Required tutorial sessions not subject to change

4. **Course Materials:** **Recommended:** An Introduction to Conservation Biology. Sher & Primack, 2020. 2nd ed. Sinauer, Oxford.
*Please note: This textbook is recommended only as a reference to support student learning related to knowledge and understanding objectives in the course. Readings from this text are recommended ONLY for supplementary reference purposes, and **are never required**. The 1st edition (2016) has similar content to the 2nd. Chapter number, title and order are somewhat different.*

5. **Scheduled Out-of-Class Activities:**
There are no scheduled out of class activities for this course.
6. **Missed Components Of Term Work:**
In the event that a student misses any term work due to illness, supporting documentation, such as a medical note or a statutory declaration will be required (see Section M.1; for more information regarding the use of statuary declaration/medical notes, see FAQ). Absences must be reported within 48 hours.
The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in Section 3.6. It is the student's responsibility to familiarize themselves with these regulations. See also Section E.3 of the University Calendar.
7. **Examination Policy:**
No aids are allowed on tests or examinations.
Students should also read the Calendar, Section G, on Examinations.
8. **Approved Mandatory And Optional Course Supplemental Fees:**
There are no mandatory or optional course supplemental fees for this course.
9. **Writing Across the Curriculum Statement:**
For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section E.2 of the University Calendar.
10. **Human & Living Organism Studies Statements:**
Students will not participate as subjects or researchers in human studies. See also Section E.5 of the University Calendar.
STUDIES IN THE BIOLOGICAL SCIENCES INVOLVE THE USE OF LIVING AND DEAD ORGANISMS. Students taking laboratory and field based courses in these disciplines can expect involvement with the experimentation on such materials. Students perform dissections on dead or preserved organisms in some courses. In particular courses, students experiment on living organisms, their tissues, cells or molecules. Sometimes field work requires students to collect a variety of living materials by many methods, including humane trapping.
All work on humans and other animals conforms to the Helsinki Declaration and to the regulations of the Canadian Council on Animal Care. The Department strives for the highest ethical standards consistent with stewardship of the environment for organisms whose use is not governed by statutory authority. Individuals contemplating taking courses or majoring in one of the fields of study offered by the Department of Biological Sciences should ensure that they have fully considered these issues before enrolling. Students are advised to discuss any concerns they might have with the Undergraduate Program Director of the Department. Students are expected to be familiar with Section SC.4.1 of the University Calendar.
11. **Reappraisal Of Grades:**
A student wishing a reappraisal, should first attempt to review the graded work with the Course Coordinator/ Instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See Section I.3 of the University Calendar.
    a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within 15 days of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall immediately submit the Reappraisal of Graded Term work form to the department in which the course is offered. The department will arrange for a re-assessment of the work if, and only if, the student has sufficient academic grounds. See sections I.1 and I.2 of the University Calendar.
    b. **Final Exams:** The student shall submit the request to Enrolment Services. See Section I.3 of the University Calendar.

12. **Other Important Information For Students:**

a. **Mental Health:** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 30, MacEwan Student Centre, Mental Health Services Website) and the Campus Mental Health Strategy website (Mental Health).

b. **SU Wellness Center:** The Students Union Wellness Centre provides health and wellness support for students including information and counselling on physical health, mental health and nutrition. For more information, see www.ucalgary.ca/wellnesscentre or call 403-210-9355.

c. Sexual Violence: The University of Calgary is committed to fostering a safe, productive learning environment. The Sexual Violence Policy ttps://www.ucalgary.ca/policies/files/policies/sexual-violence- policy.pdf) is a fundamental element in creating and sustaining a safer campus environment for all community members. We understand that sexual violence can undermine students' academic success and we encourage students who have experienced some form of sexual misconduct to talk to someone about their experience, so they can get the support they need. The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (svsa@ucalgary.ca) or phone at 403-220-2208

d. Misconduct: Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under Section K. Student Misconduct to inform yourself of definitions, processes and penalties. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/ fabrication of experimental values in a report. These are only examples.

e. Assembly Points: In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on assembly points.

f. Academic Accommodation Policy: Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at procedure-for-accommodations-for-students-with- disabilities.pdf.
Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Associate Head, Undergraduate of the Department of Biological Sciences, Heather Addy by email addy@ucalgary.ca or phone 403 220-6979. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than 14 days prior to the date in question. See Section E.4 of the University Calendar.

g. Safewalk: Campus Security will escort individuals day or night (See the Campus Safewalk website). Call 403-220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

h. Freedom of Information and Privacy: This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see Legal Services website.VP Academic, Phone: 403-220-3911 Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: ombuds@ucalgary.ca.

i. **Student Union Information**: VP Academic, Phone: 403-220-3911 Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: ombuds@ucalgary.ca

j. Internet and Electronic Device Information: Unless instructed otherwise, cell phones should be turned off during class. All communication with other individuals via laptop, tablet, smart phone or other device is prohibited during class unless specifically permitted by the instructor. Students that violate this policy may be asked to leave the classroom. Repeated violations may result in a charge of misconduct.

k. Surveys: At the University of Calgary, feedback through the Universal Student Ratings of Instruction (USRI) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

l. Copyright of Course Materials: All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or non-academic misconduct, in addition to any other remedies available at law.

Department Approval_____ORIGINAL SIGNED_____DATE:_____