



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

1. **BIOLOGY 401 – EVOLUTIONARY BIOLOGY**

Lecture Section: L01 MWF 10:00-10:50 ST 139 WINTER 2018

Tutorial Sections: T01, 02, 03, 04 Tuesday 11:00, 1:00, 2:00, 3:00 SA 124

Course Coordinator: **Dr. S. Yeaman**

Instructor(s): **Dr. Mindi Summers BI 041 210-8761 mindi.summers@ucalgary.ca**  
**Dr. S. Yeaman BI 394 220-6126 samuel.yeaman@ucalgary.ca**

D2L: BIOL 401 L01 - (Winter 2018) – Evolutionary Biology  
 Biological Sciences Department BI 186; (403) 220-3140; biosci@ucalgary.ca

2. **PREREQUISITE(S):** Biology 313 and 315  
 See section 3.5.C in the Faculty of Science section of the online Calendar  
 (<http://www.ucalgary.ca/pubs/calendar/current/sc-3-5.html>)

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

<b>Part 1: in-class quizzes (3)</b>	<b>3%</b>	
<b>Midterm Exam (1)</b>	<b>30%</b>	<b>Feb. 28/18</b>
<b>Part 2: reading/problem sets (6)</b>	<b>6%</b>	
<b>Part 2: <i>Beak of the Finch</i> &amp; primary literature assignments (3)</b>	<b>6%</b>	
<b>Final Exam (1)</b>	<b>21%</b>	
<b>Parts 1&amp;2: Tutorial Projects (11)</b>	<b>33%</b>	
<b>Surveys (2)</b>	<b>1%</b>	

There will be a final exam scheduled by the Registrar’s Office.

Each piece of work (tutorial projects, midterm test or final examination) submitted by the student will be assigned a percentage score. The student’s average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

Letter Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Min. Percent Required	96	90	85	80	75	70	65	60	55	53	50

4. **Missed Components of Term Work:** 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 himself/herself with these regulations. See also Section E.6 of the University Calendar

5. **Scheduled out-of-class activities:** Dates and times of approved class activities held outside of class hours.

**Midterm Wednesday, February 28, 2018 6:00-8:00pm TBA**

**REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY.** If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. **Course Materials:** Required: 1) *Evolution*; Bergstrom and Dugatkin  
2) *The beak of the finch: a story of evolution in our time*; Jonathan Weiner; ISBN: 9780679733379

Recommended: 1) *Evolution: the story of life on earth*; Jay Hosler; ISBN: 9780809043118

**Online course components:** In the lecture component of the course, we will use the Top Hat Monocle classroom performance system, where you will be asked to use a cell phone to text answers to questions during class. The use of the Top Hat Monocle system is optional, but highly recommended to enhance learning in the classroom. If you answer 85% or more of the in-class questions, your lowest grade on one of your Part Two Assignments will be replaced by 100%. If you answer less than 85% of the in-class questions, a grade of 0 will be assigned for this course component, and the grade for the lowest Part Two grade will not be replaced. It is your responsibility to ensure that your participation is being properly recorded by the Top Hat Monocle system. In the event of any discrepancy, you must contact the administrators of the Top Hat Monocle system to have them corrected. Correction of any discrepancies must be done prior to 5pm on April 13, 2018. If a student is unable to use the Top Hat Monocle system, please contact Dr. Mindi Summers within the first week of class to make alternate arrangements.

7. **Examination Policy:** No electronic or written aids (e.g., cell phones, tablets, computers, PDAs, notes, textbooks) will be allowed during writing of any exams. Non-programmable calculators will be permitted to answer quantitative questions on exams, if applicable, and permission to do this will be clearly indicated on the examination paper. Students should also read the Calendar, Section G, on Examinations.
8. **Writing across the curriculum statement:** In this course, the quality of the student's writing in tutorial reports will be a factor in the evaluation of those reports. See also Section E.2 of the University Calendar.
9. **Human studies statement:** If you agree, your course work may be used for research purposes. Your responses will remain anonymous and confidential. Grouped data (no individual responses) may be used in academic presentations and publications. Participation in such research is voluntary and will not influence grades in this course. Students' signed consent forms will be withheld from instructors until after final grades are submitted. More information will be provided at the time student participation is requested. See also Section E.5 of the University Calendar.

## 10. ETHICS IN THE BIOLOGICAL SCIENCES

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 and 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 concern they might have with the Undergraduate Program Director of the Department.

## 11. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- (a) **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.
- (b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on assembly points.
- (c) **Student Accommodations:** 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 [http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities\\_0.pdf](http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf).
- Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Biological Sciences, Dr. H. Addy by email [addy@ucalgary.ca](mailto:addy@ucalgary.ca) or phone 403 220-3140.
- (d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- (e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, 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 also <http://www.ucalgary.ca/secretariat/privacy>.

(f) **Student Union Information:** VP Academic Phone: 403 220-3911 Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca)  
SU Faculty Rep. Phone: 403 220-3913 Email: [science1@su.ucalgary.ca](mailto:science1@su.ucalgary.ca), [science2@su.ucalgary.ca](mailto:science2@su.ucalgary.ca) and [science3@su.ucalgary.ca](mailto:science3@su.ucalgary.ca);  
Student Ombuds Office: 403 220-6420 Email: [ombuds@ucalgary.ca](mailto:ombuds@ucalgary.ca); <http://ucalgary.ca/provost/students/ombuds>

(g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

(h) **U.S.R.I.:** At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses ([www.ucalgary.ca/usri](http://www.ucalgary.ca/usri)). Your responses make a difference - please participate in USRI Surveys.

Department Approval \_\_\_\_\_ ORIGINAL SIGNED \_\_\_\_\_ Date \_\_\_\_\_

Associate Dean's Approval for  
out of regular class-time activity: \_\_\_\_\_ ORIGINAL SIGNED \_\_\_\_\_ Date: \_\_\_\_\_  
B401 co W17; 12/15/2017 11:02 AM

BIOLOGY 401 EVOLUTIONARY BIOLOGY - WINTER 2018 TENTATIVE SCHEDULE

WEEK	DAY	LECTURE	TOPIC	READING IN BERGSTROM AND DUGATKIN
<b>Part 1</b>				
1				
Jan 8-12	M	1	Introduction to Course	N/A
	W	2	History of evolutionary thought	Chapter 2
	F	3	Evolutionary Genetics: Genetic diversity in the absence of evolution – 1 locus	Chapter 7.2
2	M/			
	W	4 & 5	Evolutionary Genetics: Genetic diversity in the absence of evolution – 2 loci	Chapter 9.2
	F	6	Mutation	Chapter 6.3, 6.4
3	M/	7 & 8	Genetic drift	Chapter 8.1
	W			
	F	9	Inbreeding and Population subdivision	Chapter 7.5, 8.1
4	M	10	Population subdivision	Chapter 8.1
	W/F	11-12	Quantitative genetics	Chapter 9.4
5	M/	13-14	Selection on the phenotype	Chapter 7.3
	W			
	F	15	Single-locus models of selection	Chapter 7.3
6	M	16	Single-locus models of selection	Chapter 7.3
	W/F	17-18	Drift vs. selection	Chapter 8.4, 8.5
7	M	18	Adaptation	Chapter 17
	W	19	Review of first half	N/A
<b>Part 2</b>				
7	F	20	Part 2 overview	
Mar 2				
8	*M	21	Sex and sexual selection	Chapters 16 & 17
	W	22	Sexual conflict and group selection	
	*F	23	<i>Beak of the Finch Part I</i>	<i>Beak of the Finch I; primary lit.</i>
9	*M	24	Speciation and the species problem	Chapters 14, 4
	W	25	Naming nature and taxonomy	
	F	26	Evolutionary trees and tree-thinking	
10	*M	27	Tree-thinking	Chapter 5
	W	28	Phylogenetic inference	
	*F	29	<i>Beak of the Finch Part II</i>	<i>Beak of the Finch II; primary lit.</i>
11	*M	32-36	Macroevolution	Chapters 4, 5, 18
	W		Coevolution	
	F		No class – university holiday	
12	*M	37	History of life on Earth: fossils, geologic evidence, and extinction	Chapters 15, 11, 12
	W		History of life on Earth: major events and transitions	
	*F		<i>Beak of the Finch Part III</i>	<i>Beak of the Finch III; primary lit.</i>
13	*M		Human evolution	Chapters 19 & 20
	W		Human population genetics	
	F		Synthesis	

Reading/problem sets are due on D2L by 10am on Mondays during Part 2 of the course (indicated with an asterisk and bold text). *Beak of the Finch* and primary literature reading assignments are due on D2L by 10am on Fridays - March 9, March 29, and April 6 (indicated with an asterisk and bold text). Two surveys will be due on D2L by 10am on Wednesday, January 10 and Wednesday, April 11.