



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 2017

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

Course Coordinator: **Dr. J. Vamosi**

Instructor(s): **Dr. J. Vamosi** **BI 482** **210-9594** **jvamosi@ucalgary.ca**
Dr. S. Yeaman **BI 394** **220-6126** **samuel.yeaman@ucalgary.ca**

D2L: BIOL 451 L01 - (Winter 2017) - Conservation 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:

Midterm Exam	30%
Tutorial Projects	34%
Final Exam	30%
In-class quizzes	6%

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.

A+	96	
A	90	
A-	85	
B+	80	
B	75	
B-	70	
C+	65	
C	60	
C-	55	
D+	53	
D	50	
F	<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, March 1, 2017 6:00-8:00pm TBD

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: Evolution, Bergstrom and Dugatkin
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:** N/A.

STUDIES IN THE BIOLOGICAL SCIENCES INVOLVE THE USE OF LIVING AND DEAD ORGANISMS. Students are expected to be familiar with <http://www.ucalgary.ca/pubs/calendar/current/sc-5-1.html> of the on-line calendar.

See also <http://www.ucalgary.ca/pubs/calendar/current/e-5.html>.

10. 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.
- 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 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: suypaca@ucalgary.ca
 SU Faculty Rep. Phone: 403 220-3913 Email: science1@su.ucalgary.ca, science2@su.ucalgary.ca and science3@su.ucalgary.ca;
 Student Ombuds Office: 403 220-6420 Email: 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). 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; 10/25/2016 8:39 AM

BIOLOGY 401 EVOLUTIONARY BIOLOGY
WINTER 2017 TENTATIVE LECTURE SCHEDULE

LECTURE	TOPIC	READING IN BERGSTROM AND DUGATKIN
1	Introduction to Course	N/A
2	History of evolutionary thought	Chapter 2
3	Evolutionary Genetics: Genetic diversity in the absence of evolution – 1 locus	Chapter 7.2
4 & 5	Evolutionary Genetics: Genetic diversity in the absence of evolution – 2 loci	Chapter 9.2
6	Mutation	Chapter 6.3, 6.4
7 & 8	Genetic drift	Chapter 8.1
8	Inbreeding and Population subdivision	Chapter 7.5, 8.1
9	Population subdivision	Chapter 8.1
10-11	Quantitative genetics	Chapter 9.4
12-13	Selection on the phenotype	Chapter 7.3
14-15	Single-locus models of selection	Chapter 7.3
16-17	Drift vs. selection	Chapter 8.4, 8.5
18	Cooperation and altruism	Chapter 17
19	Review of first half	N/A
20	Overview of second half	N/A
21-23	Depicting divergence: Species concepts, variation & tree thinking	Chapter 14, 14.1
24, 25	Speciation	Chapter 14
26-28	Sexual selection	Chapter 16
29, 30	Phylogenetics	Chapter 4, 5
31	Macroecology and macroevolution	Chapter 5.4, 5.7 5.8
32	Midsection Review/Catch-up	N/A
33	Rates of evolution	Chapter 15.5
34, 35	Coevolution	Chapter 18
36	Extinction and radiation	Chapters 15
37	Review of second half	N/A

LEARNING OUTCOMES

By the end of the course, students will be expected to:

1. Evaluate and explain the main points of peer-reviewed evolutionary biology articles
2. Communicate opinions on current topics in evolutionary biology orally in small group discussions and presentations
3. Analyze the differences and complementarities of micro- and macroevolution
4. Critique the soundness of arguments made about evolution in social media, the news, etc.
5. Communicate how the main evolutionary processes interact to shape patterns of biological diversity