



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

1. BIOLOGY 401 – EVOLUTIONARY BIOLOGY

Lecture Section: L01 MWF 10:00-10:45 ICT 114 WINTER 2016

Course Coordinator: **Dr. S.M. Vamosi**

Instructor(s): **Dr. S.M. Vamosi** **BI 395** **210-8508** **smvamosi@ucalgary.ca**
 Dr. S. Yeaman **BI 394** **220-6126** **samuel.yeaman@ucalgary.ca**

D2L: BIOL 451 L01 - (Winter 2016) - 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	32%
Tutorial Projects	36%
Final Exam	32%

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	0	

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 2, 2016 6:00-8:00pm ST 135

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: Making Sense of Life, Zimmer, C. and Emlen, D.J.

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 (FOIPPA). 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
 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: _____
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UNIVERSITY OF CALGARY
DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE
BIOLOGY 401
EVOLUTIONARY BIOLOGY

TERM: Winter 2016 SECTION NO: 01

PREREQUISITE: Biology 313 and Biology 315

A student may not register in a course unless she/he has a grade of at least C- in each prerequisite course.

COURSE LECTURERS: **Dr. S.M. Vamosi** **BI 395** **210-8508** **smvamosi@ucalgary.ca**
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LECTURES: M W F 10:00-11:00 ICT 114

TUTORIALS:

01	T	11:00 – 11:50	SA 124
02	T	13:00 – 13:50	SA 124
03	T	14:00 – 14:50	SA 124
04	T	15:00 – 15:50	SA 124

TEXT: Required: Evolution: Making Sense of Life, Zimmer, C. and Emlen, D.J. (1st edition)

RESERVE READING: See attached list.

MARK DISTRIBUTION: A. Composition of Final Grade

Midterm Exam (March 2, 2016)	32%	ST 135
Tutorial Projects	36%	
Final Examination	32%	

B. Final Exam

There will be a final examination scheduled by the Registrar's Office.

The student is responsible for the material covered in both lecture and tutorial on a cumulative basis.

An introduction to the micro- and macroevolutionary processes responsible for the diversity of organisms. Topics include heredity, genetic variation, population structure, genetic drift, natural selection and adaptation, sexual selection, evolution of interactions between species, speciation, phylogeny and biogeography.

BIOLOGY 401 EVOLUTIONARY BIOLOGY
WINTER 2016 TENTATIVE LECTURE SCHEDULE

LECTURE	TOPIC	READING IN ZIMMER AND EMLEN, EVOLUTION
1	Introduction to Course	Chapter 1
2	History of evolutionary thought	Chapter 2 and 3
3 & 4	Evolutionary Genetics: Genetic diversity in the absence of evolution – 1 locus	Chapter 6
5	Evolutionary Genetics: Genetic diversity in the absence of evolution – 2 loci	Chapter 6
6	Mutation	Chapter 5
7	Genetic drift	Chapter 6
8	Inbreeding, and Genetic Load	Chapter 6
9	Population Subdivision	Chapter 6
10-11	Natural selection – modes and occurrence	Chapter 8
12-13	Fitness	Chapter 8
14-15	Viability Selection	Chapter 8
16-17	Genetics of quantitative traits, Heritability and genetic correlations	Chapter 7
18	Applying population-genetic theory to data	N/A
19	Review of first half	N/A
20	Overview of second half	N/A
21-23	Species concepts, intraspecific variation & Ecological character displacement	Chapter 13
24, 25	Speciation	Chapter 13
26-28	Sexual selection	Chapter 11
29, 30	Phylogeny reconstruction	Chapter 4, 9
31	Phylogeography	Chapter 14
32	Midsection Review/Catch-up	N/A
33	Rates of evolution	Chapter 14
34, 35	Coevolution	Chapter 15
36	Extinction and radiation	Chapters 14
37	Review of second half	N/A