I. COURSE DESCRIPTION
CC106 is designed to round out your exploration of the natural sciences by focusing on the science of life. Life is remarkable in its improbability, diversity, and uniqueness (as far as we know, life is limited to this planet, though this may change shortly). Importantly, life counteracts the tendency toward disorder that characterizes physical and chemical systems and the evolution of living systems gives rise to organisms both beautiful and sublime. In this course we aim to instill in you an appreciation for the diversity and remarkable complexity of life, and also an understanding of the elegant mechanisms that govern the evolution of life.

II. INSTRUCTORS
If you can’t attend office hours, contact the instructor by e-mail to arrange an appointment.

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Office</th>
<th>E-mail</th>
<th>Phone</th>
<th>Office Hours</th>
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<tbody>
<tr>
<td>Mark Jonas (Core)</td>
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Undergraduate mentors
Nathan Fairchild
Gayle Miner

III. GRADING
A. Lecture Participation, 10%. Attendance and active participation are required.
B. Exam I: Feb. 14, 15%. This exam will cover material from lectures, discussions, lab, through February 12 and integrating forum I. Questions will be in multiple choice format. The material contained in the lecture, lab, and discussion will be heavily emphasized. You will be expected to understand the required readings, particularly as they pertain to the material covered in lecture, discussion, lab, or the forum. You will not be asked to remember details from the readings that were not covered in class.
C. Exam II: March 26, 15%. This exam will cover material from February 19 through March 21 and integrating forum II.
D. Exam III: May 2, 15%. This exam will cover material from March 28 through April 30, and integrating forum III.
E. Discussion, 10%. Discussion is required and is an integral part of the course. Discussion will focus on issues that are related to topics covered in lecture. Some questions on the exams will refer to the readings assigned for discussion.
F. Paper, 15%. You will compose a piece of scientific journalism based on a paper from the scientific literature in an area closely related to the course content. More information on the paper will be available on the course web site.
G. Lab, 20%. The labs will require you to perform exercises and answer questions. You will work in teams of two, and you will each receive the same grade for the material you submit to your lab instructor.

IV. READINGS (http://learn.bu.edu)
Required readings for the course are taken from the primary and popular literature. All readings will be posted to the course website in electronic form.
The course website at http://learn.bu.edu contains all the information for the course, including downloadable lectures, laboratory manuals, animations, announcements, and news. You should consult the course website often. When important updates are made to the course website, you will be notified by e-mail.

Lecture/Exam Schedule (http://learn.bu.edu)

Lecture Location: School of Theology B19. Time: Tuesdays and Thursdays from 2-3:30. Students are expected to attend and be active participants in all lectures. Attendance and participation constitute a significant portion of your grade and attendance will be taken. Material covered during lecture will be weighted heavily on the exams.

Organismal Diversity and Function: Sensory Biology

Week 1
1. January 17, Schneider: Welcome and Introduction to the course. Description of course structure, syllabus, requirements and expectations.

Week 2
2. January 22, Atema: You get what you see: from photon to (mis)perception
   January 23: Last day to register for a class.
3. January 24, Schneider: Color, vision and evolution.

Week 3
4. January 29, Atema: Coffee: how good is it?
   January 30: Last day to add a class

Week 4
6. February 5, Atema: The sound of music: frog calls and the design of music halls.
7. February 7, Atema: Multisensory navigation: sharks and robots

Week 5

   February 14, Exam I: Covers lectures 1-8, discussions A-D, lab 1, and Integrating forum 1.

Evolution: The Unifying Theme for All of Biology

Week 6
9. February 19, Jonas: How science works and why evolution is true.
10. February 21, Schneider: The history of evolutionary thought.

Week 7
Monday Holiday. Wednesday is a Monday Schedule – No lab this week, discussion sections
meet on Wednesday.

11. February 26, Schneider: Darwin’s great insights.

Week 8

13. March 5, Schneider: How do complex structures evolve?
14. March 7, Schneider: Why Sex? What is sex? How did it evolve? What are the costs and benefits of sex?

Week 9  March 9-17 Spring Break

Week 10

15. March 19, Jonas: Species and Speciation. What are species? How do we know? How do new species arise?

Week 11

March 26, Exam II: Covers all material presented from Lectures 9 – 16, Discussion E – I, and Integrating Forum II.

Ecology and Biodiversity: Life on a changing planet

Week 11 (cont)

   March 29: Last day to DROP classes with a ‘W’

Week 12


Week 13

20. April 9, Atema: The secret life of lobsters and marine resource management under global change.

Week 14

Monday Holiday, Thursday substitute Monday Schedule.


April 18: Substitute Monday schedule. Discussion will meet on Thursday.

Week 15
23. April 23, Ristau/Griffin: The question of Animal Awareness

**Week 16**
25. April 30, Integrating Forum III: Ecology of a changing planet

**May 2, Exam III: Covers all material from March 28 – April 30.**

**VII. DISCUSSION SCHEDULE** (http://learn.bu.edu)
Topics and readings will be posted weekly to the course web site. Attendance at discussion is mandatory. Unlike the practice in CC105, instructors will not directly review lecture material in discussion. Rather, the material covered in discussion is meant to expand your understanding of key principles and to provide current, topical examples related to the lecture material. Material from discussion may be used in exam questions. Note that we will reserve three discussion sessions to review for exams. We will not go over lectures again, but we will answer questions and work with you to make sure you understand the material. The discussion schedule is as follows.

A. Week 2, Jan. 21: No discussion - Holiday
B. Week 3 Jan. 28:
C. Week 4 Feb. 4:
D. Week 5 Feb. 11: REVIEW FOR EXAM I.
   *End of material covered on the first midterm exam, on February 14.*

E. Week 6 Feb. 18:
F. Week 7 Feb. 27 (Wednesday is a Monday Schedule):
G. Week 8 Mar. 4:
H. Week 10 Mar. 18:
I. Week 11 Mar. 25: REVIEW FOR EXAM II
   *End of material covered on the second midterm exam, on March 26.*

J. Week 12 Apr. 1:
K. Week 13 Apr. 8:
L. Week 14 Apr. 18 (Thursday is a Monday Schedule):
M. Week 15 Apr. 22:
N. Week 16 Apr. 29: REVIEW FOR EXAM III

**LAB SCHEDULE** (http://learn.bu.edu)
Lab I, Feb. 6: Sensory biology
Lab II, Mar. 6: Simulating natural selection and building phylogenies
Lab III, Mar. 20: Reconstructing human evolution from morphology and molecules
Lab IV, Apr. 10: Biosphere I: Building an ecosystem
Lab V, Apr. 24: Biosphere II: Analysis of an ecosystem

**VIII. ACADEMIC CONDUCT** (http://bu.edu/academics/resources/academic-conduct-code/)
“Academic misconduct is conduct by which a student misrepresents his or her academic accomplishments, or impedes other students' opportunities of being judged fairly for their academic work. Knowingly allowing others to represent your work as their own is as serious an offense as submitting another’s work as your own.” – Definition of Academic Misconduct from BU’s Academic Conduct Code.

It is each student's responsibility to know and understand the provisions of the Academic Conduct Code at BU (http://www.bu.edu/academics/resources/academic-conduct-code/). Cases of suspected misconduct will be referred to the CAS Dean’s office. Penalties can be severe, so please think twice before cheating.