Instructor: Marianna D Wood
104 Hartline
office hours- Monday 10:00 – 11:30
Tuesday 10:00 11:30
Wednesday 2:00 – 4:00
office phone- 389-4666
e-mail- mwood@bloomu.edu
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Course Description
Evolution is one of the central, unifying theories of biological science. The diversity of living organisms we see today evolved through time from the basic organic building blocks. A shared evolutionary history can explain similarities among species in development, behavior, morphology, and physiology. Evolution continues today, explaining such phenomena as the development of new human diseases and the increases in pesticide and antibiotic resistance.

In this course, we will examine major events in the history of life on Earth. We will also examine the mechanisms of evolutionary change: mutation, recombination, natural selection, and stochastic events. Each class period will include lecture/seminar, group activities, and discussion of journal articles from the primary literature.

This course is a combined graduate and upper-level undergraduate course. Students enrolled in this course should have a solid background in basic biology, genetics, ecology, and mathematics.

Required Texts
coursepack of EvoBeaker workbooks, SimBiotic Software, Ithaca, New York, USA.

Schedule of Topics and Readings

29 August evolutionary thinking
text: chapters 1, 2.1-2.3

5 September natural selection and phylogenetic trees
text: chapters 3.1-3.6, 4

12 September population genetics
text: chapters 5, 6, 7
Dolgin, ES, B Charlesworth, SE Baird, and AD Cutter. 2007.
19 September  population genetics
    text: chapters 8.1-8.2, 9

26 September  origin of life and speciation
    text: chapters 16, 17

3 October  radiations and extinctions
    text: chapters 18, 19

10 October  human evolution
    text: chapter 20

17 October  mid-term exam

24 October  adaptations
    text: chapters 10, 15
31 October  sex and sexual selection

text: chapters 8.3, 11

7 November  social behavior

text: chapter 12

14 November  life history evolution

text: chapter 13

28 November  evolution and human health

text: chapter 14

5 December  creationism

text: 2.4, 3.7

12 December  final exam
Course Evaluation (Undergraduate)

Your course grade will be based on the following components—

- weekly preparation (13 x 10) 130
- weekly participation (13 x 10) 130
- EvoBeaker exercises (3 x 15) 45
- annotated bibliography
  - topic and three citations 10
  - final paper 90
- midterm exam 100
- final exam 150

Total 655

Your points earned will be converted to a letter grade using the following scale—

<table>
<thead>
<tr>
<th>Points</th>
<th>Grade</th>
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<tbody>
<tr>
<td>622-655</td>
<td>A</td>
</tr>
<tr>
<td>589-621</td>
<td>A-</td>
</tr>
<tr>
<td>570-588</td>
<td>B+</td>
</tr>
<tr>
<td>544-569</td>
<td>B</td>
</tr>
<tr>
<td>524-543</td>
<td>B-</td>
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<tr>
<td>&lt;393</td>
<td>E</td>
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Weekly Preparation and Participation

Evolution is a seminar-style course. Regular attendance and participation by all students are necessary for the class to be successful. To allow meaningful participation, you must come to class prepared to discuss the evening’s topic in depth. Your preparation and participation grade will include your pre-class study of the reading assignments, your contribution to your team’s discussion of the papers, and your participation in the discussion and activities of the whole class. Preparation and participation will be graded through a combination of self-assessment, teammate input, and instructor assessment.

EvoBeaker Exercises

The EvoBeaker software is installed on the Specialized Software PCs in the library and the KUB Games Room (232). The library is a better location to do the exercises because the computers are in carousels with room for the workbook, notes, etc. In the library, the specialized computers are on the third floor on the far end away from the stairs and elevator and overlooking the parking lot and Student Rec Center. In the Games Room, the specialized computers are located in the middle of the lab and have a “Specialized Software PC” sticker. You will need your university user id and password to log on to the computer. You can start EvoBeaker from the Start menu under Specialized Software. Domesticating Dogs is due 12 September, The HIV Clock is due 26 September, and How the Guppy Got Its Spots is due 7 November.

Annotated Bibliography

You will prepare an annotated bibliography on a selected topic in evolutionary biology. You should read at least 200 pages on the topic and write a one-paragraph summary of each paper you read. Your sources should be from the primary literature. The topic and three summaries are due on 3 October, and the complete bibliography is due on 14 November.

Mid-term and Final Exams

There will be two in-class exams, a mid-term and a final. The final exam will conform to University policy and be comprehensive. Both exams will consist of a selection of short to moderate-length essays.
Course Evaluation (Graduate)

Your course grade will be based on the following components—

weekly preparation (13 x 10) 130
weekly participation (13 x 10) 130
discussion leading (3 x 15) 45
EvoBeaker exercises (3 x 15) 45
annotated bibliography
  topic and three citations 10
  final paper 90
midterm exam 100
final exam 150

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total 700

Your points earned will be converted to a letter grade using the following scale—

<table>
<thead>
<tr>
<th>Points</th>
<th>Grade</th>
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<tr>
<td>651-700</td>
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<tr>
<td>630-651</td>
<td>A-</td>
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<tr>
<td>609-629</td>
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<td>581-608</td>
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<tr>
<td>560-580</td>
<td>B-</td>
</tr>
<tr>
<td>&lt;420</td>
<td>E</td>
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</tbody>
</table>

Weekly Preparation and Participation
Evolution is a seminar-style course. Regular attendance and participation by all students are necessary for the class to be successful. To allow meaningful participation, you must come to class prepared to discuss the evening’s topic in depth. Your preparation and participation grade will include your pre-class study of the reading assignments, your contribution to your team’s discussion of the papers, and your participation in the discussion and activities of the whole class. Preparation and participation will be graded through a combination of self-assessment, teammate input, and instructor assessment.

Discussion Leading
You will be responsible for planning and leading the discussion of three of the assigned papers during the semester. For each paper, you must create a study guide and make it available one week before the paper is discussed. You are also responsible for leading the discussion of those papers during class.

EvoBeaker Exercises
The EvoBeaker software is installed on the Specialized Software PCs in the library and the KUB Games Room (232). The library is a better location to do the exercises because the computers are in carousels with room for the workbook, notes, etc. In the library, the specialized computers are on the third floor on the far end away from the stairs and elevator and overlooking the parking lot and Student Rec Center. In the Games Room, the specialized computers are located in the middle of the lab and have a “Specialized Software PC” sticker. You will need your university user id and password to log on to the computer. You can start EvoBeaker from the Start menu under Specialized Software. Domesticating Dogs is due 12 September, The HIV Clock is due 26 September, and How the Guppy Got Its Spots is due 7 November.
Annotated Bibliography
You will prepare an annotated bibliography on a selected topic in evolutionary biology. You should read at least 260 pages on the topic and write a one-paragraph summary of each paper you read. Your sources should be from the primary literature. The topic and three summaries are due on 3 October, and the complete bibliography is due on 14 November.

Mid-term and Final Exams
There will be two in-class exams, a mid-term and a final. The final exam will conform to University policy and be comprehensive. Both exams will consist of a selection of short to moderate-length essays.

Communication
As stated in PRP 3408 Student Use of University Assigned Email Accounts, you are responsible for all messages and attachments sent to your bloomu.edu e-mail account and items posted on Blackboard. You should regularly check your e-mail and Blackboard, http://blackboard.bloomu.edu