SYLLABUS – EVOLUTION AND DIVERSITY

Judy Stone, jstone@colby.edu, X5736, Arey 104
Office hours MTWR 1-2 or by appointment.
The professor is amenable to being taken out to lunch by students.

Course content:
In BI 163, you focused on the “skin-in” part of biology, studying at the cellular level how organisms accomplish the basic tasks of metabolism and growth, and how the hereditary material of DNA directs these functions. In BI 164, in contrast, we will focus at the level of the population of organisms, addressing four related major questions:
1. How is variation created and transmitted across generations?
2. How is this variation acted upon by natural selection and other processes?
3. What are the products across the tree of life of these evolutionary processes, and what key features characterize this diversity?
4. How do the diversity of organisms interact in biological communities?

How to succeed in this course:

• Follow the class schedule (next page, and on the web).

• Skim through the relevant chapters before class, and study any figures that present difficult content.

• Attend class. Even though I will follow the textbook fairly closely, repetition of material aids in learning, and exam questions will be drawn from lecture notes.

• Review your notes after each class or two (at least once a week) and clarify areas of confusion by reading the book, talking with friends, meeting with a tutor, or contacting me.

• Strive to keep an eye on the conceptual framework, make connections with previous material, and think about how what you’ve learned could be applied to new situations.

• Form a study group, if possible. Discussing the material with friends often enhances learning.

• Ask me if you would like a student tutor.

Class participation:
Our class is too large for discussion, but I encourage you to ask clarifying questions and to answer the questions that I pose in lecture. In addition, I will randomly select three to four students each day and ask them to provide feedback on the lecture. This procedure will help me to assess student comprehension and will form the foundation of your participation grade. If you are absent the day I call your name, you will receive a zero for that day.

Course website: www.colby.edu/biology/bi164/bi164_index.html
(or follow the links for courses from the biology web page)
**Class Schedule**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Text &amp; supplemental readings</th>
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<tbody>
<tr>
<td>Feb 6 – 11</td>
<td>Evolution by natural selection</td>
<td>p 4-10, 15, Ch 23</td>
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<tr>
<td>Feb 13 - 18</td>
<td>Meiosis and sex</td>
<td>Ch 12, apples</td>
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<tr>
<td>Feb 20 - 29</td>
<td>Mendelian genetics and genomics</td>
<td>Ch 13 (&amp;19-20 as assigned)</td>
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<tr>
<td>Mar 3 - 10</td>
<td>Evolutionary processes</td>
<td>Ch 24</td>
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<td>Mar 12 - 14</td>
<td>Speciation</td>
<td>Ch 25</td>
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<tr>
<td>Mar 17 - 31</td>
<td>Phylogenies and the history of life</td>
<td>Ch 26</td>
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<td>Apr 2 - 4</td>
<td>Diversity: bacteria and protists</td>
<td>Ch 28</td>
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<tr>
<td>Apr 7 - 11</td>
<td>Diversity: plants</td>
<td>Ch 29</td>
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<tr>
<td>Apr 14 - 16</td>
<td>Diversity: fungi</td>
<td>Ch 30, potatoes</td>
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<td>Apr 18 - 25</td>
<td>Diversity: animals</td>
<td>Ch 31-33</td>
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<tr>
<td>Apr 28 - 30</td>
<td>Community ecology</td>
<td>Ch 53</td>
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<tr>
<td>May 2 - 9</td>
<td>Biodiversity and conservation</td>
<td>Ch 55</td>
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Dates are approximate.
The text is Biological Science, 2nd edition, by Scott Freeman, Prentice-Hall publishers.

**Exams and due dates:**
Feb 20      1st literature assignment—if late, 25% penalty per day
March 5    Exam on material through Feb 29, 6 - 7:30 pm, Diamond 142
March 19    2nd literature assignment—if late, 25% penalty per day
April 2     Exam on material discussed March 3 – 31, 6 - 7:30 pm, Diamond 142
April 16    3rd literature assignment—if late, 25% penalty per day
April 29    Exam on material discussed Apr 2 – 25, 6 - 7:30 pm, Diamond 142

**Grading:**
Three hourly exams 45%
Laboratory 25%
Final exam 20%
Literature assignments 8%
Participation 2%