

**Dixie State University  
Evolution and Ecology  
Biology 1300-40  
(CRN #27045)  
SPRING 2015 Syllabus**

**Lecture:** Online

**Instructor:** Dr. Bonnie Bain

**Office:** Science 108

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**Online office hours: 12:00 - 2:00 pm, T and Th**

During online office hours, email and phone response times will be quicker, since I will be directly monitoring email/phone during those times. I check my email frequently at other times, but depending on the day, response times may be longer (up to 24 hour turnaround time).

**General Education Course:**

BIOL 1300 Evolution and Ecology is an introductory course stressing fundamental life science principles that satisfy the General Education requirements for the Physical and Life Sciences.

**Course Description:**

Focuses on the fundamental principles of evolution and ecology. Evolution is emphasized as a unifying theme for all of Biology, as an explanation for both the unity and diversity of life.

**Course Objectives:**

At the end of the course, students will display an understanding of the following:

1. The important theories and developments that shaped the ideas of Charles Darwin within the context of 19th century England.
2. Evolution as a unifying concept in Biology.
3. The fundamental concept of natural selection as the process of adaptive evolution.
4. Natural selection and the central role it plays in ecology and evolution, and the relationship between these sciences and the rest of biology.
5. How the methods and procedures for generating ideas substantiated by experimentation are the foundation of evolution and ecology.
6. Distinguish between phenotypic and genotypic variation and the important role played by genes and heritable variation in evolution.
7. An overview of microevolution using the Hardy-Weinberg Model.
8. Models of speciation and speciation as a macroevolutionary process.
9. The hierarchical organization of ecology.

10. The ecology of individuals, communities and ecosystems, and the concept of emergent properties.
11. The importance of the biosphere and threats to ecosystem functioning.
12. The importance and value of biodiversity.

**In order to meet Course Objectives, students will be required to:**

1. Do weekly reading assignments and view powerpoints.
2. Do any assigned written assignments based on lecture and reading materials.
3. Take quizzes, if applicable.
4. Take four written exams, testing retention of course content and ability to read and interpret scientific data and graphs.
5. Participate in online discussions in order to improve analytical skills.
6. For this course, students are expected to log on for a minimum of 3 hours each week.

**Textbooks (all 3 are required):**

Your Inner Fish, A Journey into the 3.5 Billion-Year History of the Human Body, 2008, by Neil Shubin. Published by Pantheon Books, New York. ISBN: 13: 978-0-375-42447-2.

\*Essential Biology, 5th edition, 2012, by Simon, Reece, Dickey. ISBN-10: 0321772598 and ISBN-13: 978-0321772596. This also includes the Mastering Biology access card.

**NOTE: the Mastering Biology website is NOT required for this class.** It is a supplement which comes with the textbook. The course ID number (to access the Mastering Biology website) is the CRN# listed at the top of page 1 of this syllabus.

\*Scientific American Current Issues in Biology, vol. 6. 2009. ISBN-13: 978-0321598493 or ISBN-10: 0321598490

**\*Note: If purchased from the Dixie State University Bookstore, the Essential Biology textbook and the Scientific American Current Issues in Biology, vol. 6 are bundled together under this ISBN: 9780134037080. If purchased separately elsewhere, they are much more expensive.**

Tentative Lecture Schedule  
Spring 2015

Week 1      Jan. 12:      MODULE 1  
Welcome! Introduction and Syllabus  
DISCUSSION 1: Introduce Yourself and Discussion Etiquette (pdf)

**January 19: Martin Luther King Jr. Holiday – No class**

Week 2      Jan. 19:      MODULE 2  
POWERPOINT: Darwin  
REQUIRED READINGS:  
Charles Darwin and Voyage of the Beagle (Simon, et al: chapter 13, pp. 244-247).  
Classifying the Diversity of Life (Simon, et al: chapter 14, pp. 285-289).  
Evolution of Animals/Origin of Animal Diversity (Simon, et al: chapter 17, pp. 337-367).  
DISCUSSION 2: Finding your inner fish (Shubin, chapter 1)

Week 3      Jan. 26:      MODULE 3  
POWERPOINT: Natural Selection  
REQUIRED READINGS:  
Natural Selection (Simon, et al: chapter 13, pp. 252-255)  
DISCUSSION 3: Getting a grip (Shubin, chapter 2)

**February 2 - Last Day to Drop without a grade of W!**

Week 4      Feb. 2:      MODULE 4  
POWERPOINT: Evidence for Evolution  
REQUIRED READINGS:  
Evidence for Evolution (Simon, et al: chapter 13, pp. 248-251)  
DISCUSSION 4: Handy Genes (Shubin, chapter 3)

**EXAM 1: Feb. 3 – Feb. 10** (Proctored, in DSU Testing Center)

Exam 1 will be over the required readings in Simon, et al Chapters 13, 14, and 17

Week 5      Feb. 9:      MODULE 5  
POWERPOINTS: Cell Reproduction, parts 1-2  
REQUIRED READINGS:  
Simon, et al: chapter 8, Asexual Reproduction/Mitosis, pp. 121-129; Meiosis, pp. 130-140  
DISCUSSION 5: Teeth everywhere (Shubin, chapter 4)

**February 16: President's Day Holiday – No Class**

Week 6      Feb. 16:      MODULE 6  
POWERPOINT: Genetic Variation  
REQUIRED READINGS:  
Simon, et al: chapter 9, Gregor Mendel, pp. 145-157.  
Simon, et al: chapter 13, Population Variation, pp. 256-257.  
DISCUSSION 6: Traces of a Distant Past (Scientific American, Current Issues, Vol. 6, p. 2-9)

Week 7      Feb. 23:      MODULE 7  
POWERPOINT: Microevolution  
REQUIRED READINGS:  
Microevolution (Simon, et al: chapter 13, pp. 257-265)

DISCUSSION 7: Getting Ahead (Shubin, chapter 5)

**EXAM 2: Feb. 24 – March 3** (Proctored, in DSU Testing Center)

Exam 2 will be over the required readings in Simon, et al Chapters 8, 9, and 13

Week 8      March 2:      MODULE 8  
POWERPOINT: Homeotic/Hox Genes  
REQUIRED READINGS:  
Homeotic Genes (Simon, et al: chapter 11, p. 205-206)  
DISCUSSION 8: The best-laid (body) plans (Shubin, chapter 6)

**Spring Break – March 9-13 – no class**

Week 9      March 16:      MODULE 9  
POWERPOINT: Macroevolution, Speciation, and Classification  
REQUIRED READINGS:  
Macroevolution, Speciation, and Classification (Simon, et al:  
Chapter 14, pp. 269-285).  
Also, review Simon, et al: Chapter 14, pp. 285-289, previously  
covered in week 2.  
DISCUSSION 9: Adventures in Bodybuilding (Shubin, chapter 7)

Week 10     March 23:      MODULE 10  
POWERPOINT: Ecology, an Overview  
REQUIRED READINGS:  
Ecology, an Overview (Simon, et al, chapter 18, pp. 373-393)  
DISCUSSION 10: Making scents (Shubin, chapter 8)

Week 11     March 30:      MODULE 11  
POWERPOINT: Ecology of Populations  
REQUIRED READINGS:  
Ecology of Populations (Simon, et al, chapter 19, pp. 403-421)  
DISCUSSION 11: Vision (Shubin, chapter 9)

**EXAM 3: March 31 – April 7** (Proctored, in DSU Testing Center)

Exam 3 will be over the required readings in Simon, et al Chapters 11, 14, 18, and 19

Week 12     April 6:        MODULE 12  
POWERPOINT: Community Ecology  
REQUIRED READINGS:  
Community Ecology (Simon, et al, chapter 20, pp. 428-437)  
DISCUSSION 12: Ears (Shubin, chapter 10)

Week 13     April 13:      MODULE 13  
POWERPOINT: Ecosystems  
REQUIRED READINGS:  
Ecosystems (Simon, et al, chapter 20, Ecosystem Ecology, pp.  
437-443; chapter 18, Global Climate Change, pp. 394-399)  
DISCUSSION 13: The meaning of it all (Shubin, chapter 11)

EXTRA CREDIT ASSIGNMENT: Global Warming

Week 14     April 20:     MODULE 14  
POWERPOINT: Conservation Biology  
REQUIRED READINGS:  
Conservation Biology (Simon, et al, chapter 20, Biodiversity, pp. 425-428; Restoration Biology, pp. 444-449)

**Two required Discussions this week:**

DISCUSSION 14: Conservation for the People (Scientific American, Current Issues, Vol. 6, p. 12-19)  
DISCUSSION 15: Historical Photographs Expose Decline in Florida's Reef Fish

Week 15     April 27:     MODULE 15  
**EXAM 4** (Proctored, in DSU Testing Center)  
Exam 4 will be over the required readings in Simon, et al chapters 18 and 20.  
This is the last exam for this class!  
**Exam 4 will be available from Wed. April 22 – Wed. April 29**  
April 29 is the last day of class

**Lecture Evaluation:**

Four exams (100 points each)

Weekly Discussions (10 points each)

Additional assignments may be added, as needed.

    Please check the course modules each week for any additions/changes.

    You are responsible for keeping up with any additions/changes

EXAMS (required):

**This is an online course which requires verification of your identity through the use of proctored assignments and/or tests. In this course, there are four tests that meet this criterion. The student will receive an F in the course if these proctored assignments are not completed or are not compatible with coursework submitted throughout the semester.**

**Go to DSU Testing Center for information on test proctoring:**

DSU Testing Center: <http://www.dixie.edu/testing/>

**and**

**DSU Testing Center Proctoring Information:**

[http://www.dixie.edu/testing/need\\_a\\_test\\_proctor.php](http://www.dixie.edu/testing/need_a_test_proctor.php)

If you live close enough to go to the DSU Testing Center for each exam, then you DO NOT need to obtain a Proctor and fill out the proctoring form. If you live too far away to do this, then you NEED TO set up a Proctor and fill out the required form WITHIN THE FIRST WEEK OF CLASS. Go to the DSU Testing Center website (above) for more information.

WEEKLY DISCUSSIONS (required):

10 points total (per discussion) each week for an original post (OP) and two replies (2R).

Every week, there will be one or two Discussion questions. You are required to participate in these by responding to the question with an original posting (OP) and then adding 2 replies (2R) to other students' original posts. See Discussion Etiquette pdf for details. Each OP + 2R is worth 10 points. Other assignments may be added throughout the semester. It is your responsibility to make sure that you are aware of, and complete on time, any additional assignments.

There may be more than one Discussion question each week. Please check to make sure you don't miss any! **Since this is a 1-credit course, you are required to be online for this course a minimum of 3 hours per week.**

**GRADING RUBRIC FOR DISCUSSIONS:**

Each Discussion is worth 10 points. I will take points off for the following:

1-2 points taken off for not meeting minimum word requirements in the OP (original post)

1-2 points taken off for not meeting minimum word requirements in the 2R (2 required replies)

5 points taken off for only doing part of the assignment

1 point taken off for a missing reply

1-2 (or more) points taken off for missing parts of the assignment. Please be sure to answer all of the questions being asked each time

1-2 (or more) points taken off for excessive typos, misspellings, etc. If I can't understand what you are writing, you will lose points also. Please write your answers as clearly as possible and proofread thoroughly before submitting.

Late assignments:

2 - 4 points off for being late with all 3 parts (OP, 2R)

1 point off for each late reply

<u>Grading Criteria</u>	<u>Points</u>	<u>Total</u>	<u>Percent</u>
Exams (4)	100 each	400	73%
Discussions (15 minimum)	10 each	150	27%
<b>Total</b>		<b>550</b>	<b>100%</b>

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**Grading Scale**

93-100%	A	80-82.9%	B-	70-72.9%	C-	60-62.9%	D-
90-92.9%	A-	77-79.9%	C+	67-69.9%	D+	<60%	F
87-89.9%	B+	73-76.9%	C				
83-86.9%	B			63-66.9%	D		

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## **DSU POLICIES, PROCEDURES, AND SEMESTER DATES**

Click on this link - <http://www.dixie.edu/reg/syllabus/> - for comprehensive information on the Semester Dates, the Final Exam Schedule, University resources such as the library, Disability Resource Center, IT Student Help Desk, Online Writing Lab, Testing Center, Tutoring Center, and Writing Center. In addition, please review DSU policies and statements with regards to Academic Integrity, Disruptive Behavior and Absences related to university functions.

*If you are a student with a medical, psychological, or learning disability or think you might have a disability and would like accommodations, contact the Disability Resource Center (652-7516) in the North Plaza. The Disability Resource Center (<http://dixie.edu/drcenter/>) will determine eligibility of the student requesting special services and determine the appropriate accommodations related to their disability.*

INFORMATION CONTAINED IN THIS SYLLABUS, OTHER THAN THE GRADING, LATE ASSIGNMENTS, MAKE-UP WORK, AND ATTENDANCE POLICIES, MAY BE SUBJECT TO CHANGE WITH ADVANCE NOTICE, AS DEEMED APPROPRIATE BY THE INSTRUCTOR.