

ZOOGEOGRAPHY - BIOL 340 (CRN 22367)

Syllabus

Spring Semester 2016

Class location and schedule: HWWE 211, Tue/Thu, 8:30 – 9:45 AM

Instructor: Dr. Antony (Tony) S. Harold, Grice Marine Laboratory (GML), College of Charleston, 205 Fort Johnson, Charleston, SC 29412. Telephone (843) 953-9180; fax (843) 953-9199; email harolda@cofc.edu

Office and mailbox locations: GML Annex, Rm. 125. Mailbox located in GML 102.

Office hours: HWWE 211 TR 9:45 – 10:15 AM, or GML 125 by appointment.

Course Description

An introduction to the study of geographic distribution patterns of organisms, their origins and their significance for ecology and evolution.

Student Learning Outcomes

Students are expected to show mastery in the broad areas of environmental factors and their variation on various spatial and temporal scales, ecological and evolutionary biogeography, and application of such knowledge to conservation biology. The degree to which students have learned this material will be evaluated by (a) three written tests during the semester and a final examination, and (b) their ability to critically evaluate published works in biogeography and write about their findings in a Critique Project report that will be graded.

Course Objectives

The primary objectives are to gain a familiarity with patterns of geographic distribution of organisms, and to apply process theories, such as those involved in species and community ecology, dispersal, vicariance, and island biogeography to explain those patterns. The course will finish by applying this knowledge to an understanding of current issues in biodiversity.

Policies and Requirements

1. This course will be conducted in accord with the Honor Code (see Student Handbook).

2. **Attendance Policy:** You are expected to attend all meetings of the class. More than five unexcused absences will result in a grade of WA for the course. Students reporting an absence should go to the Office of the Dean of Students to fill out the appropriate form. A representative from that office will notify the appropriate faculty by e-mail.

3. **Electronic Devices:** The use of cell phones, laptops and other electronic devices during class is a distraction to both instructors and other students; to be fair to all those concerned they must

not be in use while class is in session. Consequently, all electronic communications devices (e.g., cell phones, laptop computers) must be turned off during class. The use of a cell phone for any purpose during a test will be treated as a violation of the Honor Code.

4. Required Textbook: Lomolino, Mark V., Brett R. Riddle, Robert J. Whittaker, and James H. Brown. 2010. *Biogeography*, Fourth Edition. Sinauer Associates, Inc., Sunderland, Massachusetts, [ISBN 978-0-87893-494-2].

5. Critique Project

This assignment is designed to introduce you to reviewing papers in the primary scientific literature. You will be assigned a paper from the published primary biogeographical literature to critically read. You will be provided with a sheet of questions that are to be considered when reviewing the article. This is not an exhaustive list, but you will only need to consider these questions in fulfilling the minimum requirements of the assignment. In addition, you are required to find one other article (similar in terms of both content and conceptual basis) upon which to base comparisons with the assigned review article. Those comparisons should be made within the framework of the provided questions. You will write up your results in the form of an approximately 4 page paper (maximum 4 pages of text, plus your cited references, and any figures or tables) appropriate for publication as a review article in the *Journal of Biogeography*. More details will be distributed by email as the course progresses.

5. Summary of Tests/Exams

Test 1: First quarter of the course.

Test 2 (Mid-term): **Cumulative** – All material covered in the first half.

Test 3: **Non-cumulative** - Material covered in the third quarter only (after the Mid-term test).

Final Examination: **Cumulative** – All material covered in the course.

6. Grading:

A. Test 1	15%
B. Test 2 (Midterm); cumulative	20%
C. Test 3; non-cumulative	15%
D. Critique Project	20%
E. Final Examination; cumulative	25%
F. Participation (participation in discussions, adherence to course policies)	05%

7. Grading scale:

A	94-100%	B-	80-83%	D+	67-69%
A-	90-93%	C+	77-79%	D	64-66%
B+	87-89%	C	74-76%	D-	60-63%
B	84-86%	C-	70-73%	F	<60%

8. COURSE SCHEDULE AND REQUIRED READINGS

Readings¹ prefixed by “LRWB” are chapter numbers in the course textbook *Biogeography* by Lomolino et al. (2010). Additional readings will be provided.

Date	Topic	Readings ¹
January		
Thu 07	Introduction	
Tue 12	Philosophical issues; History of biogeography	LRWB 1, 2
Thu 14	History of biogeography	LRWB 1, 2
Tue 19	History of biogeography	LRWB 1, 2
Thu 21	Environmental and geographical settings	LRWB 3
Tue 26	Environmental and geographical settings	LRWB 3
Thu 28	Distributions of single species	LRWB 4
February		
Tue 02	Distributions of single species	LRWB 4
Thu 04	TEST 1	
Tue 09	Distributions of communities	LRWB 5
Thu 11	Geological structure and history	LRWB 8
Tue 16	Geological structure and history	LRWB 8
Thu 18	Glaciation and its biotic effects	LRWB 9
Tue 23	Speciation and its geographical context	LRWB 7
Thu 25	Speciation and its geographical context	LRWB 7
March		
Tue 01	TEST 2	
Thu 03	Dispersal	LRWB 6
Tue 08	- Spring break -	
Thu 10	- Spring break -	
Tue 15	Dispersal	LRWB 6
Thu 17	Endemism, cosmopolitanism, and disjunction	LRWB 10
Tue 22	Endemism, cosmopolitanism, and disjunction	LRWB 10
Thu 24	Phylogenetic analysis and the history of lineages	LRWB 11
Tue 29	Phylogenetic analysis and the history of lineages	LRWB 11
Thu 31	Phylogenetic analysis and the history of lineages	LRWB 11
April		
Tue 05	TEST 3	
Thu 07	Historical biogeography: phylogenetics and distribution	LRWB 11, 12
Tue 12	Historical biogeography: phylogenetics and distribution; CRITIQUE PROJECT DUE	LRWB 11, 12
Thu 14	Historical biogeography: phylogenetics and distribution	LRWB 11, 12
Tue 19	Island biogeography; in-class time for course-instructor evaluations	LRWB 13, 14
Thu 21	Island biogeography; Review	LRWB 13, 14
Tue 26	FINAL EXAMINATION: HWWE 211, 12:00 – 3:00 PM	