

ZOOGEOGRAPHY - BIOL 340.01 (CRN 13467)

Syllabus Fall Semester 2018

Class location and schedule: RITA 103, Tue/Thu, 1:40 – 2:55 PM

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

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Office hours: RITA 226/228 TR 3:00 – 3:45 PM or Grice Marine Lab room 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 a range of spatial and temporal scales as they relate to the distribution of organisms, and the principles of and their application to ecological and evolutionary biogeography. 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/phylogenetic, 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 instructor by e-mail.

3. Electronic Devices: The use of cell phones during class is a distraction to both instructors and other students; to be fair to all those concerned they must be silenced and put away while class is in session. A laptop computer may be used for taking notes 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, and Robert J. Whittaker. 2016. *Biogeography*, Fifth Edition. Sinauer Associates, Inc., Sunderland, Massachusetts, [ISBN 9781605354729].

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. A detailed set of instructions will be distributed by email near the mid-term. The assignment includes a requirement to find one other article (similar in terms of both content and its conceptual basis) upon which to base comparisons with the assigned review article. Those comparisons should be made within the framework of the questions provided in the instructions. 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*.

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 class, attendance, 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 “LRW” are chapter numbers in the course textbook *Biogeography* by Lomolino et al. (2016). Additional readings will be assigned as needed.

Date	Topic	Readings¹
August		
Tue 21	Introduction	
Thu 23	The nature of biogeography; History of biogeography	LRW 1, 2
Tue 28	History of biogeography	LRW 2
Thu 30	Environmental and geographical settings	LRW 3
September		
Tue 04	Environmental and geographical settings	LRW 3
Thu 06	Distributions of single species	LRW 4
Tue 11	Distributions of single species	LRW 4
Thu 13	TEST 1	
Tue 18	Distributions of communities	LRW 5
Thu 20	Distributions of communities	LRW 5
Tue 25	Geological structure and history	LRW 8
Thu 27	Geological structure and history	LRW 8
October		
Tue 02	Dispersal	LRW 6
Thu 04	TEST 2	
Tue 09	Dispersal	LRW 6
Thu 11	The biogeography of speciation	LRW 7
Tue 16	The biogeography of speciation	LRW 7
Thu 18	Glaciation and its biogeographic effects	LRW 9
Tue 23	Endemism, cosmopolitanism, and disjunction	LRW 10
Thu 25	Endemism, cosmopolitanism, and disjunction	LRW 10
Tue 30	TEST 3	
November		
Thu 01	Phylogenetic analysis and the history of lineages	LRW 11
Tue 06	Fall Break - no class	
Thu 08	Phylogenetic analysis and the history of lineages	LRW 11
Tue 13	Historical biogeography: phylogenetics and distribution	LRW 12
Thu 15	Historical biogeography: phylogenetics and distribution	LRW 12
Tue 20	Historical biogeography: phylogenetics and distribution;	LRW 12
Thu 22	Thanksgiving Break - no class	
Tue 27	Island biogeography; CRITIQUE PROJECT DUE	LRW 13
Thu 29	Island biogeography; in-class time for course-instructor evaluations;	LRW 13
Thu Dec 06	FINAL EXAMINATION: RITA 103, 4:00 – 7:00 PM	