

Evolutionary Biogeography BSC4821 – Fall 2022

Credits: 3

Schedule: Tuesdays 1:55-3:50 (periods 7-8); Thursday 1:55-2:45 (period 7)

Location: Little Hall 125

Instructors

Dr. Nico Cellinese
354 Dickinson Hall
Florida Museum of Natural History
Museum Road & Newell Drive
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Office hours

By appointment

Prerequisites

Biogeography is a broad field and a multi-disciplinary approach is essential. Any of the following BSC 2010, BSC 2010L, BSC 2011 and BSC 2011L, each with a grade of C or better, is required, in addition to a keen interest in evolution and biological diversity and willingness to participate actively in classes.

Course description

Biogeography is the study of patterns in distribution, diversity and abundance, and is an exciting and rapidly evolving field, integrating systematics, ecology and evolution with geography, geology and climatology. This course examines the distribution of organisms around Earth and addresses the processes that determine their patterns and spread. We will consider similarities of communities of biota in different parts of the world as well as common distribution patterns among individual taxa. We will 'travel' the planet and examine different biomes, from high elevation and high latitudes, to the tropics and island systems. We will learn how through observations, data collection, and a suite of analytical methods the biogeographic history of organisms can be inferred and their future distribution patterns predicted. During this course, we will discuss a number of hot, current topics, such as global climate change, gene editing, impact of invasive species, among many others.

Course textbooks:

Lomolino, M.V., Riddle, B.R., Whittaker, R.J. 2017. *Biogeography*, 5th Edition. Sinauer (not required, but recommended).

Archibold, O.W. Ecology of World Vegetation. 1995. Springer (not required, but recommended).

Other readings will be provided.

Objectives and basis for grading

Lectures

Lectures will provide an overview of major topics in biogeography. Students will be introduced to a broad variety of research areas. Popular articles and/or scientific papers will be assigned as reading in preparation for class discussions.

Exams

Class discussions/quizzes and one final exam will test the student's understanding of course topics, as covered by lectures and in assigned readings.

Grading

% by activity

| Activity | % of final grade |
|---------------------------|-------------------------|
| Class discussions/quizzes | 50 |
| Final exam | 50 |

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|-------------|----|
| 94.0-100% | A |
| 90.0-93.9% | A- |
| 87.0-89.9% | B+ |
| 84.0-86.9% | B |
| 80.0-83.9 % | B- |
| 77.0-79.9% | C+ |
| 74.0-76.9% | C |
| 70.0-73.9% | C- |
| 67.0-69.9% | D+ |
| 64.0-66.9% | D |
| 60.0-63.9% | D- |
| <60% | E |

Assignments and attendance policy

Attendance at class is **mandatory**, and students should be prepared to justify absences. Frequent absences will certainly result in poor performance. No make-up exams will be given unless exceptional circumstances arise.

If you are experiencing COVID-19 symptoms (click here for guidance from the CDC on symptoms of coronavirus), please use the UF Health screening system and follow the instructions on whether you are able to attend class. Click here for UF Health guidance on what

to do if you have been exposed to or are experiencing Covid-19 symptoms. Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up missed work. Refer to this link for more information on the university's attendance policy: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Class Demeanor Expected by Instructor

Students should be considerate, polite, open-minded, objective and show interest in the work of others. UF rules prohibit having food or drinks in classrooms. Use of tobacco products (in any form) in the classroom is prohibited.

Course Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at gatorevals.ua.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at gatorevals.ua.ufl.edu/public-results/

Academic Honesty

We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standard of honesty and integrity.

As a result of completing the registration form at the University of Florida, every student has signed the following statement: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."

Copyrighted Materials and Software Use: All students are required and expected to obey the laws and legal agreements governing copyrighted material and software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

Accommodations for Students with Disabilities: Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: <http://www.dso.ufl.edu/drc/>. Note that the student should provide documentation of a requirement for accommodation by the second week of classes. No accommodations are available to students who lack this documentation. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

Resources Available to Students

College can be a very stressful time in a person's life. Resources are available on campus to help students meet academic goals and solve personal problems, which may interfere with their academic performance. If you find that you are having difficulty emotionally or academically, there is substantial support available. See "A Self Help Guide for Students" or contact one of the following services:

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<http://www.dso.ufl.edu/drc/>. Note that the student should provide documentation of a requirement for accommodation by the second week of classes. No accommodations are available to students who lack this documentation. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

Health and Wellness

-U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.

-Counseling and Wellness Center: Visit the [Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.

-Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the [Student Health Care Center website](#).

-University Police Department: Visit [UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).

-UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website](#).

-GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, [visit the GatorWell website](#) or call 352-273-4450.

Academic Resources

-E-learning technical support: Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

-**Career Connections Center**: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services. -**Library Support**: Various ways to receive assistance with respect to using the libraries or finding resources.

-**Teaching Center**: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

-**Writing Studio**: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

-Student Complaints On-Campus: [Visit the Student Honor Code and Student Conduct Code webpage for more information.](#)

-On-Line Students Complaints: [View the Distance Learning Student Complaint Process.](#)

Procedure for Conflict Resolution

Any classroom issues, disagreements or grade disputes should be discussed first between the instructor and the student. If the problem cannot be resolved, please contact the Undergraduate Coordinator or the Department Chair. Be prepared to provide documentation of the problem, as well as all graded materials for the semester. Issues that cannot be resolved departmentally will be referred to the University Ombuds Office (<http://www.ombuds.ufl.edu>; 392-1308) or the Dean of Students Office (<http://www.dso.ufl.edu>; 392-1261). For further information refer to https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf (for residential classes) or <http://www.distance.ufl.edu/student-complaintprocess> (for online classes).

COURSE OUTLINE

The schedule below may be subject to slight changes.

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| WEEK 1 | |
| R August 25 | Introduction to course and Biogeography |
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| WEEK 2 | |
| T August 30 | World Climate Pt 1 – Class Discussion |
| R September 1 | World Climate Pt 2 |
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| WEEK 3 | |
| T September 6 | Major Biomes: Mediterranean Pt 1– Class Discussion |
| R September 8 | Major Biomes: Mediterranean Pt 2 |
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| WEEK 4 | |
| T September 13 | Major Biomes: Savannas - Class Discussion |
| R September 15 | Major Biomes: Deserts |
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| Week 5 | |
| T September 20 | Major Biomes: Tropical rainforests/montane forests Pt 1- Quiz |
| R September 22 | Major Biomes: Tropical rainforests/montane forests Pt 2 |

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| WEEK 6 | |
| T September 27 | Major Biomes: Temperate rainforests, evergreen and deciduous forests - Class Discussion |
| R September 29 | Major Biomes: Alpine, boreal, tundra |
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| WEEK 7 | |
| T October 4 | Major Biomes: Temperate grasslands - Class discussion |
| R October 6 | General distribution patterns (floristic/faunistic) |
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| WEEK 8 | |
| T October 11 | Evolution Pt 1 - Class discussion |
| R October 13 | Evolution Pt 2 |
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| WEEK 9 | |
| T October 18 | Historical Biogeography I - Principles - Quiz |
| R October 20 | Historical Biogeography II – Approaches Pt 1 |
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| WEEK 10 | |
| T October 25 | Historical Biogeography III – Approaches Pt 2 - Class discussion |
| R October 27 | Historical Biogeography IV: Earth history |
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| WEEK 11 | |
| T November 1 | Historical Biogeography: Empirical studies I - Class discussion |
| R November 3 | Historical Biogeography: Empirical studies II |
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| WEEK 12 | |
| T November 8 | Relationships of Flora and Fauna: Southern Hemisphere and Wallace line - Class discussion |
| R November 10 | Relationships of Flora and Fauna: Eastern Asia/Eastern North America |
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| WEEK 13 | |
| T November 15 | Island biogeography: Equilibrium Theory and dispersal biology – Quiz |
| R November 17 | Island biogeography: Adaptive radiation |
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| WEEK 14 | |
| T November 22 | Island biogeography: Hawaiian Islands - Class discussion |
| R November 24 | Thanksgiving holiday |
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| WEEK 15 | |
| T November 29 | Island biogeography: Islands in the sky - Class discussion |
| R December 1 | Biodiversity crisis and conservation biogeography I |

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| WEEK 16 | |
| T December 6 | Biodiversity crisis and conservation biogeography II - Quiz |
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| T December 13 | Final exam |
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