Biogeography BIOL 4590 (SELECTED TOPICS)
Department of Life Sciences
Spring 2020

A. COURSE INFORMATION

Course number/section: BIOL-4590.001
Class meeting time: Lecture: W 04:20-06:50pm
Class location: Lecture: CS-103
Course Website: 23226.202001 (Blackboard Identifier)

B. INSTRUCTOR INFORMATION

Instructor: Dr. Barnabas Daru
Office location: Tidal Hall TH-141
Office hours: TR 9:30-11:30am, W 2:00-3:00pm
Telephone: 361-825-3489
e-mail: barnabas.daru@tamucc.edu
Website: https://barnabasdaru.com/
Appointments: Additional hours by appointment, please call or email.

C. COURSE DESCRIPTION

Biogeography is the study of the origin, distribution and maintenance of biodiversity. Over the past several decades, biogeographers synthesize information from a broad range of fields, including ecology, evolution, paleontology, and climatology. This course will provide students with the ecological and historical foundations for understanding the processes by which species diversity has evolved, and is currently distributed and maintained. Concepts presented in this class are highly relevant to conservation issues related to human impacts on ecosystems and increasingly rapid climate change. The course material will range from introductory to intermediate level.

D. PREREQUISITES AND COREQUISITES

Prerequisites
Juniors/Seniors only or consent of the instructor.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required:


Other References (optional):

2. Trending and relevant articles from key journals such as *Journal of Biogeography*, *Global Ecology and Biogeography*, *Trends in Ecology Evolution*, *Nature*

**SUPPLIES:**
None

**F. STUDENT LEARNING OUTCOMES AND ASSESSMENT**

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

Upon completion, students should be able to:

1. Understand the history of how biogeographers and ecologists have conceptualized pattern and process
2. Describe the different approaches to classify geographic regions based on biotas
3. Reconstruct evolutionary history of biotas including their origin, spread & diversification
4. Understand the mechanistic processes underlying patterns of species diversity
5. Understand the influence of humans on biological communities.

**G. INSTRUCTIONAL METHODS AND ACTIVITIES**

The class will be primarily lecture with support of assigned paper readings and presentations. Attendance is required. There will be regular homework assignments, designed to enhance understanding of concepts touched on in lecture. There will also be an optional trip to biological collections in a herbarium or museum to understand how collections can shed light on patterns and processes of biogeography.

**H. MAJOR COURSE REQUIREMENTS AND GRADING**

**Grading Scale:** A = 90 - 100%  B = 80 - 89%  C = 70 - 79%  D = 60 - 69%  F =< 60%

**Points Assignment:**
- Lecture exams (2 * 100 points) = 200 points
- Biogeography Research Paper and Presentation = 300 points
- Final Exam = 200 points
- Weekly paper reading (13 @ 10 points) = 130 points

Lecture Exams: February 19, April 8
Biogeography Research Paper: Jan 29, Feb 26, Apr 1, Apr 10-17, Apr 17-24, Apr 29
Final Exam: May 6.

Failure to write the research paper will result in an “F” for the semester, regardless of total percentage/points in the class. A score of less than 60% is unsatisfactory.

I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>DATE (BY WEEK)</th>
<th>TOPIC</th>
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<tbody>
<tr>
<td>Week 1 Jan 22</td>
<td>Introduction, History of Biogeography</td>
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<tr>
<td>Jan 28</td>
<td>Last day to register or add a class</td>
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<tr>
<td>Week 2 Jan 29</td>
<td>Species Ranges&lt;br&gt;&lt;i&gt;Select Topic for Research Paper&lt;/i&gt;</td>
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<tr>
<td>Week 3 Feb 5</td>
<td>Visualization and Analysis of Biogeography Patterns</td>
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<td>Week 4 Feb 12</td>
<td>Distributions of species and communities: biomes</td>
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<td>Week 5 Feb 19</td>
<td>Lecture Exam I</td>
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<tr>
<td>Week 6 Feb 26</td>
<td>R workshop: phyloregion: new R package for biogeographic regionalization and spatial conservation&lt;br&gt;&lt;i&gt;Submit Research Paper Outline&lt;/i&gt;</td>
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<tr>
<td>Week 7 Mar 4</td>
<td>Speciation, Extinction, Dispersal and Vicariance</td>
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<td>Mar 9-13</td>
<td>Spring Break – No Class</td>
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<td>Week 8 Mar 18</td>
<td>Biogeographic Regions, Islands</td>
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<td>Week 9 Mar 25</td>
<td>Evolutionary history of lineages</td>
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<td>Week 10 Apr 1</td>
<td>Marine Biogeography&lt;br&gt;&lt;i&gt;Submit Rough Draft of Research Paper&lt;/i&gt;</td>
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<td>Week 11 Apr 8</td>
<td>Lecture Exam II</td>
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<td>Apr 10-17</td>
<td>Research Paper: Peer Review I</td>
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<td>Week 12 Apr 15</td>
<td>Human Biogeography</td>
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<td>Apr 16</td>
<td>Last day to apply for Spring graduation</td>
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<tr>
<td>Apr 17-24</td>
<td>Research Paper: Peer Review II (corrections)</td>
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<td>Week 13 Apr 22</td>
<td>Conservation and future change</td>
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<td>Week 14 Apr 29</td>
<td>Research Paper Presentation and Report</td>
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<td>Apr 30</td>
<td>Last day to withdraw from the University</td>
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<tr>
<td>Week 15 W 5/6</td>
<td>Final Exam</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.
J. COURSE POLICIES

Attendance/Tardiness
Students are expected to attend every scheduled class. The US Department of Education requires that faculty take roll.

Late Work and Make-up or Missed Exams
Late work is not accepted for either lecture work or field/lab reports. Missed exams are excused only per TAMU-CC guidelines; such exams are given only under extreme circumstances, and will be total essay.

Extra Credit
None

Cell Phone Use
All devices should be silenced. Cell phones should be put away, except in the rare instance that I ask you to use them for an activity. I recommend that you power them down. If there is a serious need to leave your cell phone on, such as a family emergency, please put it on vibrate and let me know. If you leave the classroom to take a call, I’ll understand why. I routinely reduce professionalism grades for cell phone use unrelated to class.

Laptop Use
If you need a laptop, tablet, or any other device for taking notes or otherwise participating in class, that’s fine. However, please do not use a personal device for any purpose unrelated to our class.

Food in Class
I will prefer that you not eat or drink in class, but I will not throw you out or ask you to leave.

Participation
I expect that all members in the class will participate in the questioning, discussions, and interactions within the lecture.

Others
Please see Section L–Other Information on page 7 of this document.

K. COLLEGE AND UNIVERSITY POLICIES

• Academic Integrity (University)
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic
misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. *Please consult with your academic advisor, the Financial Aid Office, and me, before you decide to drop this course.* Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Please consult the Academic Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science
and Engineering Grade Appeals webpage at [http://sci.tamucc.edu/students/GradeAppeal.html](http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

  If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

  [http://disabilityservices.tamucc.edu/](http://disabilityservices.tamucc.edu/)

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

- **Interrupted Exams**
  If an exam is disrupted by situations such as weather, power outages, fire drills, or any event requiring evacuation in the middle of an exam, those persons who have finished their exam before the disruption will not be allowed to do a make-up exam. Those persons who did not finish their exam will have to take an exam the first day of class that faculty, staff and students are allowed to return to the building. The format of this exam may use Type K, short answer, essay, fill-in-the-blank, multiple matching, or all of the above. Students taking their exam with Disability Services do not have this option unless their exam is interrupted in the building where they took their exam.

### 1. OTHER INFORMATION

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set
up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

• Citation format
Assignments should use the APA reference style as outlined in the text:

GENERAL DISCLAIMER
I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.