Biogeography BIOL 5308  
Department of Life Sciences  
Spring 2019

A. COURSE INFORMATION

Course number/section: BIOL 5308  
Class meeting time: Lecture: TR 8:00-9:15am  
Class location: Lecture: OCNR 255  
Course Website: 84034.201901 (Blackboard Identifier)

B. INSTRUCTOR INFORMATION

Instructor: Dr. Barnabas Daru  
Office location: EN 319F  
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. Related subjects, including plant habitats, phylogenetics, herbaria, nomenclature, museums.

D. PREREQUISITES AND COREQUISITES

Prerequisites  
BIOL 3428 Principles of Ecology or BIOL 3414 Vertebrate Biology or equivalent.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required:

Other References:

2. Trending and relevant articles from key journals such as
   a. Journal of Biogeography
   b. Global Ecology and Biogeography
   c. Trends in Ecology Evolution
   d. Nature
   e. Nature Ecology and Evolution

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 the historical development of biotas including their origin, spread and 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 readings and activities in the laboratory and field. 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 the biological collections in a herbarium or museum to understand how collections can shed light on the effects of global climate change.
H. MAJOR COURSE REQUIREMENTS AND GRADING

Assessments include lecture exams, questioning strategies, pop quizzes.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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<tbody>
<tr>
<td>Exams (2)</td>
<td>30</td>
</tr>
<tr>
<td>Quizzes</td>
<td>5</td>
</tr>
<tr>
<td>Homework</td>
<td>10</td>
</tr>
<tr>
<td>Presentations</td>
<td>10</td>
</tr>
<tr>
<td>Research Paper</td>
<td>40</td>
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<tr>
<td>Attendance</td>
<td>5</td>
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**Quizzes:** asking and answering questions in class, posting and commenting on relevant journal summary readings, participating in in-class activities.

**Homework:** at least 6 homework assignments designed to give you hands-on experience with the collection, analysis, and interpretation of biogeographic datasets.

**Presentation:** a short (3 minute) in-class lightning talk on the findings in your research paper. Presentations will take place during our scheduled final exam time.

**Research paper:** an original research project including new analysis of existing biogeographic datasets, plus a literature review. Papers should be 10-15 pages of double-spaced, times new roman 12 point text, plus additional pages for works cited and illustrations. Must include in-text citations for at least fifteen peer-reviewed scientific journal articles, plus at least one map and one photo.

**Exams:** The format for the final exam (scheduled during exam week) will be the same as the other tests. It is not cumulative. Each exam will consist of definitions, short answer questions, and essay questions. Exam questions and topics will be drawn from lectures, readings, assignments, and field trips. Homework assignments are due at the beginning of class, one week after they are assigned. Late assignments will generally NOT be accepted, and then ONLY by arrangement with the instructor PRIOR to the due date.

Please note that the Instructor may modify assignments, number of assignments and point values depending on number of students in class. Also note that “any mid-term grades posted on S.A.I.L. and Blackboard are not official University grades, not a guarantee of final grades and are never updated; once they are posted they cannot be changed even if your grade in the class does change.”
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 15&amp;17</td>
<td>Introduction, History of Biogeography</td>
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<tr>
<td>Week 2 Jan 22&amp;24</td>
<td>Species Ranges</td>
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<td><strong>Jan 22</strong></td>
<td>Last day to register or add a class</td>
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<tr>
<td>Week 3 Jan 29&amp;31</td>
<td>Visualization and Analysis of Biogeography Patterns</td>
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<td>Week 4 Feb 5&amp;7</td>
<td>Distributions of species: ecological foundations</td>
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<tr>
<td>Week 5 Feb 12&amp;14</td>
<td>Distributions of communities: biomes</td>
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<tr>
<td>Week 6 Feb 19&amp;21</td>
<td>Speciation and Extinction</td>
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<tr>
<td>Week 7 Feb 26&amp;28</td>
<td>Dispersal and Vicariance</td>
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<tr>
<td><strong>Feb 26</strong></td>
<td>Last day to apply for Spring graduation</td>
</tr>
<tr>
<td>Week 8 Mar 5&amp;7</td>
<td>Exam 1</td>
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<td><strong>Mar 11-15</strong></td>
<td>Spring Break – No Class</td>
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<tr>
<td>Week 9 Mar 19&amp;21</td>
<td>Biogeographic Regions, Islands</td>
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<td>Week 10 Mar 26&amp;28</td>
<td>Evolutionary the history of lineages</td>
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<td>Week 11 Apr 2&amp;4</td>
<td>Unified Neutral Theory</td>
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<td>Week 12 Apr 9&amp;11</td>
<td>Marine Biogeography</td>
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<td>Week 13 Apr 16&amp;18</td>
<td>Human Biogeography</td>
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<td>Week 14 Apr 23&amp;25</td>
<td>Conservation and future change</td>
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<tr>
<td>Week 15 Apr 30&amp;May 2</td>
<td>Conclusion</td>
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<td><strong>Apr 30</strong></td>
<td>Last day to withdraw from the University</td>
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<td>Week 16 TR 5/7</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/

- 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.

L. 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
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.