# BIOL4930.002: Evolutionary Ecology: 3 Hrs

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<thead>
<tr>
<th>Department of Life and Health Sciences</th>
<th>School of Liberal Arts and Sciences</th>
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</thead>
</table>

**Instructor Name:** Dr. Irene T. Rodriguez  
**Office Location:** Room 253, Founders Hall (DAL2)  
**Office Phone:** 972-338-1525  
**Email Address:** irene.rodriguez@untdallas.edu

**Office Hours:** Monday and Wednesday: 4:00 pm - 5:00 pm; or by appointment  
**Virtual Office Hours:** N/A

**Classroom Location:** DAL2 room 308  
**Class Meeting Days & Times:** Monday 5:30 pm – 8:20 pm

**Course Catalog Description:** Principles that determine the distribution and abundance of organisms from an evolutionary perspective, including evolutionary genetics and speciation, and the application of the theory of natural selection in population ecology, interactions between populations, and applied biogeography.

**Prerequisites:** Admission to M. Ed. program or consent of instructor  
**Co-requisites:** None


**Access to Learning Resources:**  
UNT Dallas Library:  
phone: 972.338.1616  
e-mail: UNTDLibrary@unt.edu  
web: http://www.untdallas.edu/library  
UNT Dallas Bookstore:  
phone: (972) 780-3652  
e-mail: untdallas@bkstr.com  
web: http://www.untdallas.edu/bookstore

**Course Goals or Overview:**  
The goal of this course is to provide the student with a broad knowledge of ecological principles framed in an evolutionary perspective.

**Learning Objectives/Outcomes:**  
1. Recognize the interaction of ecological and evolutionary principles in determining the distribution and abundance of organisms.  
2. Understand speciation in its ecological context.  
4. Explain interactions between populations (competition, predation and symbiosis) and their evolutionary implications (coevolution).  
5. Explain the application of biogeographic principles in conservation biology.  
6. Critically read, analyze, and communicate (oral and written forms) primary scientific data and literature, engaging with others in thoughtful and well-crafted discussions.
**Assessment Plan:**

Student learning outcomes will be assessed by written review of primary literature, oral presentation and discussion of topics in evolutionary ecology, homework assignments, and course content examinations.

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**Course Outline**

This schedule is subject to change by the instructor. Any changes will be communicated by the instructor in class.

<table>
<thead>
<tr>
<th>WEEK</th>
<th>DATE</th>
<th>TOPIC</th>
<th>CHAPTER</th>
<th>READING QUIZZES</th>
<th>HOMEWORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/16</td>
<td>Holiday - Martin Luther King Day (i.e., no class)</td>
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</tr>
<tr>
<td>2</td>
<td>1/23</td>
<td>Introduction to the Course Ecology and How We Do It</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>1/30</td>
<td>Ecology’s Evolutionary Backdrop</td>
<td>2</td>
<td>1 - Pianka Ch 1</td>
<td>Homework 1 due</td>
</tr>
<tr>
<td>4</td>
<td>2/6</td>
<td>Physical Conditions and the Availability of Resources</td>
<td>3</td>
<td>2 – Pianka Ch 6</td>
<td>Homework 2 due</td>
</tr>
<tr>
<td>5</td>
<td>2/13</td>
<td>Climate and the World’s Biomes</td>
<td>4</td>
<td>3 – Pianka Ch 7</td>
<td>Homework 3 due</td>
</tr>
<tr>
<td>6</td>
<td>2/20</td>
<td>EXAM 1</td>
<td></td>
<td></td>
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<tr>
<td>7</td>
<td>2/27</td>
<td>Birth, Death, and Movement</td>
<td>5</td>
<td>4 – Pianka Ch 8 &amp; 9</td>
<td>Homework 4 due</td>
</tr>
<tr>
<td>8</td>
<td>3/6</td>
<td>Interspecific Competition Predation, Grazing, and Disease</td>
<td>6</td>
<td>5 – Pianka Ch 11</td>
<td>Homework 5 due</td>
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<tr>
<td>9</td>
<td>3/13</td>
<td>SPRING BREAK</td>
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<tr>
<td>10</td>
<td>3/20</td>
<td>Molecular and Evolutionary Ecology</td>
<td>8</td>
<td>6 – Pianka Ch 12, 15, 16</td>
<td>Homework 6 due</td>
</tr>
<tr>
<td>11</td>
<td>3/27</td>
<td>EXAM 2</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>12</td>
<td>4/3</td>
<td>From Populations to Communities</td>
<td>9</td>
<td></td>
<td>Homework 7 due</td>
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<tr>
<td>13</td>
<td>4/10</td>
<td>Patterns in Species Richness</td>
<td>10</td>
<td>7 – Pianka Ch 18</td>
<td>Homework 8 due</td>
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<tr>
<td>14</td>
<td>4/17</td>
<td>The Flux of Energy and Matter Through Ecosystems</td>
<td>11</td>
<td></td>
<td>Homework 9 due</td>
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<tr>
<td></td>
<td>4/24</td>
<td>EXAM 3</td>
<td></td>
<td></td>
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<tr>
<td>15</td>
<td>5/1</td>
<td>Conservation Biology</td>
<td>13</td>
<td>8 – Pianka Ch 19</td>
<td>Homework 10 due</td>
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<tr>
<td>16</td>
<td>5/8</td>
<td>The Ecology of Human Population Growth, Disease, and Food Supply</td>
<td>14</td>
<td></td>
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<tr>
<td>18</td>
<td>5/15</td>
<td>EXAM 4 – 5:30 pm to 7:30 pm</td>
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**Course Evaluation Methods**

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course:

**Participation (100 points)** – The student will read ahead of the class to participate in class discussions. Additional participation opportunities will include attendance to on-campus activities and/or events.

**Homework assignments (100 points)** – A homework assignment will be given to the students each week and it will be due at the beginning of the first class of the following week. The students can work in groups on the assignments, but each student should turn-in her/his own work (i.e., these are individual assignments).

**Exams (400 points)** – The student will be given four in-class examinations. Each exam is worth 100 points, and will consist of a combination of multiple choice, short answer, and essay items. Attendance is required for all exams.

**Extra point reading quizzes** – In order to encourage student to read the topic before coming to class, several opportunities for extra points will be provided in the form of quizzes at the beginning of selected classes (first 10 minutes). Only those students that are on time for such classes will be provided with these opportunities (i.e., if you are late for class, then you will miss the opportunity to take the corresponding quiz and earn extra points).
Grading Matrix

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Total points</th>
<th>Percentage value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>100</td>
<td>16.6%</td>
</tr>
<tr>
<td>Homework assignments</td>
<td>100</td>
<td>16.6%</td>
</tr>
<tr>
<td>Exam 1</td>
<td>100</td>
<td>16.6%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>100</td>
<td>16.6%</td>
</tr>
<tr>
<td>Exam 3</td>
<td>100</td>
<td>16.6%</td>
</tr>
<tr>
<td>Exam 4</td>
<td>100</td>
<td>16.6%</td>
</tr>
<tr>
<td>Total</td>
<td>600</td>
<td>100.0%</td>
</tr>
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Course Policies and Procedures

Late work and make-up exams
No late assignments will be accepted without obtaining prior authorization or proving validity of absence. In such a case, the assignment should be turned in at the beginning of the following class and **20% of the points will be deducted**. Exams will only be administered on the dates and times provided in the syllabus. **Attendance and punctuality are required** for all exams. Once the first person finishes the exam, no one will be permitted to take it thereafter. You will NOT be allowed to leave the classroom and return during the exam (i.e. go to the restroom before the exam!). If you will be observing a religious holy day that is coincidental with an exam, make your instructor aware before its observance. Make-up exams will be administered during the class period **preceding** the regular exam date.

Cell phone policy
Do NOT use your cell phone in class; this includes calling, texting, and internet surfing and gaming. If your cell phone must be on during class, apply its “silent” settings. If you keep your phone on during class time, do not keep it on top of the table you are sitting at, please keep it in your pocket, purse, or bag. If your phone rings during an exam, even if the silent setting has been applied, you must turn in your exam immediately.

Laptop policy
You may use your laptop in class to take notes, but **only to take notes**. If it becomes apparent that laptops are being used by the student for activities other than lecture note taking, **all laptop use will be prohibited during class time**. Laptops are not to be used during exams. If you bring a laptop to an exam, it must remain in a bag and under the table.

Cheating and plagiarism
Cheating will NOT be tolerated in this course. If you are found cheating on an assignment or exam, you will not receive credit for the assignment/exam, and student services will be notified. Cheating includes using unauthorized material or devices on an exam, the work of another individual without proper citations, using larger portions of another’s work, even with proper citations, and copying the work of a classmate. There are no exceptions to this policy.

Diversity/Tolerance Policy
Students are encouraged to contribute their perspectives and insights to class discussions. However, offensive & inappropriate language (swearing) and remarks offensive to others of particular nationalities, ethnic groups, sexual preferences, religious groups, genders, or other ascribed statuses will not be tolerated. Disruptions which violate the Code of Student Conduct will be referred to the Dean of Students as the instructor deems appropriate.

Food/Drink Policy
**No food is allowed in the classroom.** Drinks (like water and coffee) are allowed only if they are well contained (in a bottle or a cup with a lid).

University Policies and Procedures

Students with Disabilities (ADA Compliance)

Chapter 7(7.004) Disability Accommodations for Students
The University of North Texas at Dallas makes reasonable academic accommodation for students with disabilities. Students seeking accommodations must first register with the Disability Services Office (DSO) to verify their eligibility. If a disability is verified, the DSO will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, DSO notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet/communicate with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Disability Services Office website at http://www.untdallas.edu/disability. You may also contact them by phone at 972-338-1777; by email at UNTDdisability@untdallas.edu or at Building 2, room 204.

Student Evaluation of Teaching Effectiveness Policy
Student's evaluations of teaching effectiveness is a requirement for all organized classes at UNT Dallas. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider students' evaluations to be an important part of your participation in this class.

Academic Integrity
Academic integrity is a hallmark of higher education. You are expected to abide by the University's code of Academic Integrity policy. Any person suspected of academic dishonesty (i.e., cheating or plagiarism) will be handled in accordance with the University’s policies and procedures. Refer to the Student Code of Academic Integrity at http://www.untdallas.edu/sites/default/files/page_level2/pdf/policy/7.002%20Code%20o%20Academic_Integrity.pdf for complete provisions of this code.

Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabrication of information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students.

Bad Weather
This policy applies only if the campus is closed. On those days that present severe weather and driving conditions, a decision may be made to close the campus. In case of inclement weather, call UNT Dallas Campus main voicemail number (972) 780-3600 or search postings on the campus website www.unt.edu/dallas. Students are encouraged to update their Eagle Alert contact information, so they will receive this information automatically.

UNT Dallas Learning Commons

Writing Center
The UNT Dallas Writing Center offers free, one-on-one or group tutoring services to all registered undergraduate and graduate students. Our goal is to help students write a good paper, and most importantly, become better writers. We work with students on any type of written or oral project and can help students at any stage of the writing process (from brainstorming and outlining to citing and looking over a final draft). The Writing Center is located on the 3rd floor of DAL 1 (big glass structure in front of the stairs). During the fall and spring semesters, we are available for appointments during the following hours:

Mon-Thurs: 9:00a-7:00p  
Fri: 3:00p-6:00p  
Sat: 10:00a-3:00p

To make an appointment, browse the Writing Center's online resources, or see a list of our student FAQ’s, please visit www.untdallas.edu/wc. If students cannot come in for a face-to-face appointment, students can take advantage of our free online tutoring service through the UNT Dallas Writing by scheduling an appointment via WCONline or by using SMARTTHINKING. To submit drafts and get more information about this service, visit www.untdallas.edu/wc or www.untdallas.edu/smart.

To make the best use of your time, please bring as much information as possible with you to your appointment (assignment, grading rubric, previous graded papers from the class, etc.). The Writing Center will not proofread papers or talk with you about grades, but we will help you become better writers over time.
Math Lab
The UNT Dallas Math Lab offers free, one-on-one or group tutoring services to all registered undergraduate students. Our goal is to help students improve their math skills, succeed in all of courses requiring math, and learn math-related skills they will need post-graduation. We work with students enrolled in all MATH courses at UNT Dallas and provide limited assistance with STATS, FINA, and ACCT, and Math Education courses.

The Math Lab is located on the 3rd floor of DAL 1 in room 336. Students can walk-in at any time, and our hours of operation are as follows:

- Mon-Thurs: 10:00a-7:00p
- Fri: 5:00p-7:00p

If students cannot come in for face-to-face tutoring, students can take advantage of our free online tutoring service through SMARTTHINKING. To get more information about this service, visit [www.untdallas.edu/smart](http://www.untdallas.edu/smart).