

## Tropical Biology

### EBIO 2110, Spring 2018

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**Instructor:** Dr. Renata Durães Ribeiro

**E-mail:** rduraes@tulane.edu

**Office Hours:** 428 Boggs, Mondays 11:00-1:00, Wednesdays 9:00-11:00, or by appointment

**Day/Time:** Tu, Th 8:00-9:15 am

**Class Location:** 243 Boggs (Building #15)

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**Course Description:** This course will provide an introduction to ecological and evolutionary studies of living organisms in the tropics, with a special emphasis in the Neotropics. The course will focus on major themes in tropical biology, many of which are as important today as they were when early tropical naturalists first wrote about them. We will read a number of classic papers in the field and compare their insights with those of contemporary tropical biology literature. There are no prerequisites for this course.

**Specific Aims:** The specific aims of this course are for students to learn to: (1) appreciate the diversity of tropical ecosystems and understand the ecological and evolutionary processes that make them so, (2) find, read and comprehend primary scientific literature, (3) become familiarized with some of the most influential hypotheses that guided our understanding of the ecological and evolutionary processes governing the biology of tropical organisms and ecosystems, (4) critically analyze the assumptions and the empirical evidence supporting or rejecting these hypotheses, and (5) communicate their understanding of concepts in tropical biology orally and in writing.

**Learning Outcomes:** I expect students to demonstrate that they have attained the following capabilities, consistent with the learning outcomes for the Ecology and Evolutionary Biology major: (1) develop and critique logical arguments in ecology and evolutionary biology based upon principles and theories in the disciplines, (2) use the scientific literature to acquire, evaluate and communicate scientific evidence, and (3) demonstrate written communication skills for careers in science and related disciplines.

**Textbook and Other Required Readings:** Required readings are listed in the Schedule and should be **completed before class**. *This is paramount for your success in this course, as class exercises will be based on these readings and will form a large portion of your final grade.* Indicated pages to read are from: Chazdon, R. L. & Whitmore, T. C. (2002) Foundations of Tropical Forest Biology: Classic Papers with Commentaries. University of Chicago Press, Chicago. Other short reading materials may be assigned and will be posted on Canvas, under "Assignments".

**Course website:** The course website will be hosted on **Canvas** (tulane.instructure.com). There you will find class slides, as well as any relevant information (syllabus, important dates, grades) and supplementary materials. Slides will be posted shortly after each class, under "Assignments". However, it is paramount that you **attend every class**, as there will be content and concepts discussed in class that may not be reflected in the posted materials.

**Course Structure:** This course will consist of lectures, small group and whole-class discussions, exercises, presentations and guest lectures. Lectures will be used to introduce new material, group discussions will allow you to discuss lecture material and readings with classmates to improve understanding, exercises will give you a chance to apply your knowledge and further develop critical thinking, and presentations will allow you to communicate information that you researched independently in the literature and to develop your public speaking skills. Guest lectures will showcase research by a few tropical biologists and will give you the opportunity for personal interaction and discussion with them. The semester will end with a social mixer with a larger group of scientists developing research in the tropics.

**Exams:** There will be two mid-term exams, each worth 50 pts, and one final exam worth 70 pts, with ~50 pts covering the last unit and ~20 pts covering broad concepts visited throughout the semester. You may not bring any notes or books to the exams. Exams will typically consist of short answer questions.

**Absences:** Attendance and participation in class activities are required and will be worth 6% of your grade. You **must** obtain a written note from your doctor to qualify for any makeup exam. The note must address the specific matter of whether you were medically restricted from attending class on that day (e.g., scheduling a physical exam during a class is not acceptable). Further, you are expected to contact the instructor **before the beginning of class**. Failure to comply with these rules will result in a zero on the test. You must provide full documentation **within one week**. Format of makeup exams will be at discretion of the instructor.

**Individual assignments – Paper reviews:** A total of 4 paper reviews will be assigned throughout the course, each worth 20 pts, for a total of 80 pts. These assignments must be turned in no later than at the beginning of class on the day they are due. **Late papers will automatically lose 5 points per day they are late.** The articles, plus the associated assignment, will be posted on Canvas, under “Assignments”. **Guest lecture reflections:** After each guest lecture, you should prepare a 1-page reflection paper and submit through Canvas; each reflection is worth 5 points.

**Pair assignment – Poster presentation:** For this assignment, you and a partner will work together to research the scientific literature and present on a selected study on a specific topic on tropical conservation. In preparation for this assignment, you will receive a short workshop on how to find scientific literature of interest and complete a short assignment in class (5 pts). After that, each student will prepare a bibliography list of potential articles to focus on (10 pts). Based on the topic you chose to cover, you will be paired with another student for the final part of the assignment. The assignment will culminate with a mini-symposium where pairs of students will prepare and present posters highlighting one of the selected articles (40 pts). Assignment details are to follow.

**Course Grades:** Final grades will be calculated as follows:

Midterm exams .....	2 x 50 pts =	100 pts (30%)
Final exam .....	70 pts =	21%
Paper reviews .....	4 x 20 pts =	80 pts (24%)
Bibliographic list (preliminary) .....	5 pts =	1%
Bibliography list (final) .....	10 pts =	3%
Case study poster assignment .....	40 pts =	12%
Reflections on guest lectures .....	2 x 5 pts =	10 pts (3%)
Attendance and participation .....	20 classes x 1 pt =	20 pts (6%)
<b>TOTAL POSSIBLE POINTS .....</b>		<b>335 pts</b>

Your grade will be based on the following grade scale (decimal places 0.5 or higher will be round up):

A	93 – 100%	311 – 335 pts	B-	80 – 82%	267 – 276 pts	D+	67 – 69%	223 – 232 pts
A-	90 – 92%	300 – 310 pts	C+	77 – 79%	257 – 266 pts	D	63 – 66%	209 – 222 pts
B+	87 – 89%	290 – 299 pts	C	73 – 76%	244 – 256 pts	D-	60 – 62%	199 – 208 pts
B	83 – 86%	277 – 289 pts	C-	70 – 72%	233 – 243 pts	F	<60	<199 pts

**Deadline for any re-grade request is 1 week after the initial grading was returned to the class** (not when you picked it up) or the last day of classes, whichever is earlier.

**Academic honesty:** Cheating of any sort is completely unacceptable and will be prosecuted to the fullest extent possible under University policy. Rules governing academic dishonesty can be found at: <http://www.tulane.edu/~jruscher/dept/Honor.Code.html>.

**Student Support:** If you have a learning disability or health concern, please notify me as soon as possible and register with the ERC (Educational Resources & Counseling Center) at <http://tulane.edu/studentaffairs/disability/students.cfm> so that your needs can be accommodated.

Tulane University recognizes the inherent dignity of all individuals and promotes respect for all people. Tulane is committed to providing an environment free of all forms of discrimination based on race, ethnicity, creed, religion, gender, gender identity and sexual orientation, as well as all forms of sexual harassment, including sexual assault, domestic and dating violence, and stalking. If you (or someone you know) has experienced or experiences discrimination, domestic violence, sexual assault or sexual harassment, know that you are not alone. Resources and support are available. Learn more at [onewave.tulane.edu](http://onewave.tulane.edu). Any and all of your communications on these matters will be treated as either “Strictly Confidential” or “Mostly Confidential”. Some important contact information is listed below:

Counseling & Psychological Services: (504) 314-2277  
Coordinator of Violence Prevention: (504) 314-2161  
Student Health Center: (504) 865-5255

Tulane University Police (TUPD): (504) 865-5911  
Sexual Aggression Peer Hotline & Education: (504) 654-9543  
Office of Institutional Equity: (504) 862-8083

**TENTATIVE SCHEDULE – SUBJECT TO CHANGE!!!**

Week	Class#	Day	Topic	Assigned Readings	Assignments & Reminders	
1	1	Jan 16	Introduction	Pp.37-50, 60-62		
	2	Jan 18	Early tropical naturalists	Recommended: Pp.5-14, Knapp (2015)		
2	3	Jan 23	Biogeography of the tropics I	Pp.99-104, Paper 1		
	4	Jan 25	Biogeography of the tropics II	Recommended: Pp.69-73		
3	5	Jan 30	Biogeography of the tropics III			
	6	Feb 1	Origins of tropical diversity I	Pp.216-229		
4	7	Feb 6	Origins of tropical diversity II	Recommended: Pp.163-173, Wade (2015)	Paper review 1 due	
		Feb 8	No class		<i>No class</i>	
5		Feb 13	<b>MARDI GRAS BREAK</b>		<i>No class</i>	
	8	Feb 15	<b>Class Discussion</b>	Zuk 2016	<b>Feb/16: Last day drop w/o record</b>	
6	9	Feb 20	<b>MID-TERM EXAM 1</b>			
	10	Feb 22	<b>Mini-workshop:</b> Searching the scientific literature		Prelim. bibliographic list due	
7	11	Feb 27	Tropical arthropod diversity	Pp.438-439 Recommended: Pp.407-413		
	12	Mar 1	Tropical vertebrate diversity	Pp.486-497 Recommended: Pp.441-447		
8	13	Mar 6	Tropical plant diversity	Pp.545-555, Paper 2 Recommended: Pp.513-522	Final bibliographic list due	
	14	Mar 8	Plant-animal interactions/Coevolution I	Pp.322-338 Recommended: Pp.269-278		
9	15	Mar 13	Plant-animal interactions/Coevolution II	Pp.366-379 Recommended: Pp.339-347	Paper review 2 due <b>Mar/14: Last day to drop</b>	
	16	Mar 15	Plant-animal interactions/Coevolution III	Paper 3		
10	17	Mar 20	<b>Guest lecture #1 (TBD)</b>			
	18	Mar 22	<b>MID-TERM EXAM 2</b>			
11		Mar 27	<b>SPRING BREAK</b>		<i>No class. Reflection #1 due</i>	
		Mar 29	<b>SPRING BREAK</b>		<i>No class</i>	
12	19	Apr 3	Tropical ecosystem ecology	Pp.660-670 Recommended: Pp.639-645		
	20	Apr 5	Forest dynamics and regeneration	Pp.595-615 Recommended: Pp.577-583	Topic and article for case study assignment due	
13	21	Apr 10	Other tropical ecosystems	Class exercise	Paper review 3 due	
	22	Apr 12	<b>Guest lecture #2</b>			
14	23	Apr 17	Conservation of tropical ecosystems I	Pp.755-768 Recommended: Pp.703-711	Reflection #2 due	
	24	Apr 19	Poster preparation			
15	25	Apr 24	Conservation of tropical ecosystems II	Pp.771-778, Jason Clay TED talk		
	26	Apr 26	<b>Mini-symposium:</b> Case studies in tropical conservation		Poster presentation	
16	27	May 1	<b>Tropical Mixer</b>		Paper review 4 due	
		May 6	<b>FINAL EXAM</b>			<b>SATURDAY, 9-11 AM</b>