

Diversity of Life

EBIO 1010-1, Spring 2019

Class Time and Location: Tu, Th, 3:30-4:45 pm, B07 Howard Tilton Memorial Library (Building #60)

Instructor: Dr. Renata Durães Ribeiro

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Office Hours: Make appointment by email

Outside of class, the best ways to contact me are either by email or during office hours. During office hours, I'm available for you in my office; just drop by! If you can't make those times, email me to arrange an alternative time.

Course description and structure: The planet Earth, *your planet*, hosts a unique and amazing diversity of life. How did we arrive at so many different life forms? How do we observe, understand, and organize them? Where do they fit in, and why should we care? In this course you will become familiar with evolutionary theory and processes and the diversity and ecology of organisms. We will begin with discussions on what constitutes life, how the scientific process works, and the development of evolutionary theory. You will then become familiar with the major groups of organisms, focusing on major evolutionary innovations found in each group and how different groups are phylogenetically related to each other. We will conclude with general principles in ecology, behavior and conservation.

Learning objectives: By the end of this course, you should be able to (1) have a better understanding of how science is conducted and the ability to adequately interpret scientific data; (2) appreciate the vast diversity of life on Earth; (3) solve problems by applying basic biological principles, including processes and evidence of evolution, classification and phylogeny, and the connections between the form of a given trait and the function this trait performs to help the organism survive in a particular environment.

Service Learning: This course has an optional component that satisfies the lower tier Service Learning graduation requirement and is limited to the first 20 students to enroll in EBIO1890-11. Check the separate syllabus for more information.

Required readings: Readings listed in the class schedule are from Campbell et al., *Essential Biology*, 6th ed. The custom textbook contains only selected chapters and is available in paperback from Tulane's bookstore (check for price) or in digital form from the publisher's website (\$51.87). If you prefer to purchase the e-book, visit: <https://register.pearsoncmg.com/reg/include/consent.jsp;jsessionid=yhfyZR9Q2Tv1VJBjqPHFs71fkQpPyc0VDDfFX4IP9JpNsj0LLGS!-80199577?originalDest=/reg/buy/buy1.jsp?productID=604707>

For your convenience, the link above, along with detailed instructions on how to purchase and access your e-book, are also available on the course website in Canvas, under 'Syllabus'. *I have selected short readings that you must complete before class to successfully accomplish our activities in class. Really.* Often, short videos will also be assigned and should be watched before class; find assigned videos under the appropriate class folder in Canvas.

Classroom response systems: You are required to have a TurningPoint classroom response system for use in class assessments and for attendance – do not get any other brands! Choose among these 2 options: **(1)** Purchase a Turning Technologies clicker - Tulane Bookstore carries the QT model, but other models (e.g., the more basic LCD) will work as well; my only suggestion is that you get a model with a screen. It is okay to buy a used clicker from another student, but be aware that it may no longer be covered under warranty, and you will likely still need to purchase a new license. **(2)** Install the Turning Technologies app on your smart phone. **VERY IMPORTANT:** Regardless of whether you have a clicker or the app, everybody needs a valid license for the Turning Point software AND everybody needs to register their device to get credit for their responses. When you buy a new clicker at the

bookstore, it comes with a license. Licenses are usually for 1 year, so if you purchased a used clicker, if your license has expired, *or* if you are using the app instead, you need to **purchase a valid license at <http://store.turningtechnologies.com>**. Once that you have your clicker/app and your valid license, **register your device** and it will be integrated through Canvas and ready to use. Instructions on how to register your clicker can be found at: <http://guide.tulane.edu/2016/06/03/how-do-i-register-for-a-turning-point-account-through-canvas/>. Purchase and register your device within the first week of class: we will start using clickers immediately but points will not be accrued until Week 2; after that, students without a functional device will start losing points.

Please refrain from using cell phones during class, except for answering clicker questions. Use of any digital devices (including laptops and tablets) for uses other than answering clicker questions is not allowed during class time, unless you have a permission from Educational Resources to use them for note taking.

Course website: The course website will be hosted on Canvas (login at tulane.instructure.com). Slides and handouts will be made available after each class, under ‘Assignments’. Do not assume that the slides will substitute for attending lectures, as there will be essential information that will be relayed in class but not present in slides. Also visit the class page to see grades, supplemental materials, assignments, and any other relevant material. Access to the Canvas course website and reading any emails I send to you is paramount for your success in this course. Please familiarize yourself with Canvas. By the first day of class, you should have received an email from me; if you have not, make sure that your Tulane email account is working properly and that my emails are not going into your junk folder.

Labs: Meet in Science and Engineering Labs (SELabs) 218. Labs begin in the 1st week of classes.

Grading: Points you earn will be regularly posted on the Canvas gradebook, typically within a week of the due date. Final grades will be calculated based on a percentage of 360 points that can be earned as follows:

Formative assessments: 5 points per class x 25 classes = up to 125 points

Summative assessments: 50 points each x 4 assessments = up to 200 points

The weekly challenge: 5 points each x 13 challenges = up to 65 points

According to this system, 390 possible points are available, of which you can earn a maximum of 360 (i.e., there are 30 ‘bonus’ points!). You have flexibility about how to earn points, but earning a high grade will likely require a combination of the 3 types of assessments. Below, you can find some general guidelines; be judicious about how to maximize your grade:

Assessment Type	Where, When, How	Point Value	IF ALL other points were earned you could MISS:	Keep in mind!
Formative	In class only, collaborative, 25 times	5pts each Total 125pts*	13 classes & earn an A 20 classes & earn a B	Coming to class is the easiest way to learn, and succeed, in this course
Summative	4 times, 3 minimum	50 pts each Total 200 pts	1 exam + 22 exam pts & earn an A 1 exam + 62 exam pts & earn a B	There are no make-up exams. If you miss 2 exams, you fail the course
Weekly Challenge	Out of class, 13 times	5 pts each Total 65 pts	All challenges & earn an A	There are no extra-credit assignments and no extensions on submission deadlines

***For Class 1 only, the 5 points will be given instead by completing the online syllabus quiz.**

Formative assessments are in-class activities that allow you to work with colleagues through analytical problems and to self-assess your comprehension in real time. Come to class, have a functional responseware, participate actively, and you should be golden!

Weekly Challenges (WC) are homework activities that may be completed individually or in groups of up to 3 students; each student must turn in his/her own assignment through Canvas, and include the names of any co-workers. Keep in mind that discussing an assignment is different from submitting identical answers, and that submissions will be automatically checked for plagiarism against other students’ submissions and material found

online. Plagiarism (e.g., submitting overly similar answers or answers that are basically copies of online texts) will result in a zero grade for all students involved; stronger punitive actions may be pursued. While these assignments are not mandatory, skipping too many will very negatively affect your grade.

Summative assessments are individual in-class examinations that focus on material covered in each course unit, although general concepts can be re-visited at any time. The format will be mostly short-answers and some multiple choices. You can bring 1 sheet of paper with handwritten notes on both sides; you will need to turn your sheet along with your exam.

Missed classes/ assessments: Given that in this course you can miss more than 50 of all available points and still earn an A, there will be absolutely no make-up assignments or assessments. E.g., if you have to miss a class and wish to recoup the lost points, you can complete a Weekly Challenge; if you miss an exam, make sure to come to class everyday and complete most of the WCs with care. You must take at least 3 summative assessments; missing more will automatically fail you. You are responsible for checking your grades regularly. **Any re-grading needs to be requested within 2 weeks from the day you receive an assignment back.**

Your final grade will be based on the following grade scale:

A	93 – 100%	335 – 360 pts	B-	80 – 82%	288 – 298 pts	D+	67 – 69%	241 – 251 pts
A-	90 – 92%	324 – 334 pts	C+	77 – 79%	277 – 287 pts	D	63 – 66%	227 – 240 pts
B+	87 – 89%	313 – 323 pts	C	73 – 76%	263 – 276 pts	D-	60 – 62%	216 – 226 pts
B	83 – 86%	299 – 312 pts	C-	70 – 72%	252 – 262 pts	F	<60	<216 pts

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>. Note that using the clicker of an absent student to answer questions on his/her behalf, or attempting to answer clicker questions remotely constitute academic dishonesty.

Student Support: If you have a learning disability or health concern, please notify Dr. Ribeiro at the beginning of the semester 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. Any and all of your communications on these matters will be treated as either “Strictly Confidential” or “Mostly Confidential”. Some important contact information:

Counseling & Psychological Services: (504) 314-2277	Tulane University Police (TUPD): (504) 865-5911
Coordinator of Violence Prevention: (504) 314-2161	Sexual Aggression Peer Hotline & Education: (504) 654-9543
Student Health Center: (504) 865-5255	Office of Institutional Equity: (504) 862-8083

Class Schedule: See next page. For the required readings, chapters are numbered as they show in the custom book (see list below). Pages are listed both as they show in the paperback and on the e-book. List of chapters:

1 – Introduction: Biology Today	8 – The Evolution of Microbial Life
2 – Cellular Reproduction: Cells from Cells	9 – The Evolution of Plants and Fungi
3 – Patterns of Inheritance	10 – The Evolution of Animals
4 – The Structure and Function of DNA	11 – An Introduction to Ecology and the Biosphere
5 – How Genes are Controlled	12 – Population Ecology
6 – How Populations Evolve	13 – Communities and Ecosystems
7 – How Biological Diversity Evolves	

Class Schedule: Subject to Change!

Week	Class	Date	Topic	E-book: Chapter (pages)	Paperback: Chapter (pages)	Due assignments & Reminders
1	1	Jan 15	Intro to Life, Scientific Method	Ch.1, (4-8, 17) +suppl. pages on Canvas	Ch. 1 (4-8, 17), +suppl. pages on Canvas	Labs start this week
	2	Jan 17	Natural Selection, Inheritance	Ch.3 (4-7), Ch.6 (13-15)	Ch.3 (54-57), Ch.6 (147-9)	
2	3	Jan 22	Sexual reproduction, Cell Division	Ch.2 (4-7, 12-13, 17-18) + video	Ch.2 (26-29, 34-35, 39-40) + video	Due 3:30pm: WC1. Midnight: Entry Survey, Syllabus quiz.
	4	Jan 24	Variation & Mutation	Ch.3 (19), Ch.6 (15-18)	Ch.3 (69), Ch.6 (149-152)	
3	5	Jan 29	Microevolution	Ch.6 (19-24)	Ch.6 (153-158)	WC2
	6	Jan 31	Macroevolution	Ch.6 (10-13), Ch.7 (5-9,20-22) +video	Ch.6 (144-7), Ch.7 (169-173) +video	
4	7	Feb 5	Viruses	Ch.4 (18, 24) + video	Ch.4 (98, 104) + video	WC3
	8	Feb 7	Prokaryotes	Ch.8 (9-16, Fig.1) + video	Ch.8 (201-8, Fig.1) + video	
5		Feb 12	Summative assessment 1			
	9	Feb 14	Eukaryotes, Protists	Ch.8 (17-21) + video	Ch.8 (209-13) + video	WC4. 2/15: Last day drop w/o record
6	10	Feb 19	Introduction to Plants	Ch.9 (4-7)	Ch.9 (222-5)	
	11	Feb 21	Seedless plants: Bryophytes, Ferns	Ch.9 (7-9)	Ch.9 (225-7)	WC5
7	12	Feb 26	Seed plants: Gymnosperms	Ch.9 (10-11)	Ch.9 (228-9)	
	13	Feb 28	Seed plants: Angiosperms	Ch.9 (12-14)	Ch.9 (230-2)	WC6
8		Mar 5	Mardi Gras/Spring Break			No classes this week
		Mar 7	Mardi Gras/Spring Break			
9	14	Mar 12	Fungi	Ch.9 (16-20) + video	Ch.9 (234-8) + video	WC7
	15	Mar 14	Review (no clicker points)			3/18: Last day to drop
10		Mar 19	Summative assessment 2			
	16	Mar 21	Introduction to Animals	Ch.10 (4-6)	Ch.10 (248-50)	WC8
11	17	Mar 26	Porifera, Cnidaria	Ch.10 (7-8) + videos	Ch.10 (251-2) + videos	
	18	Mar 28	Platyhelminthes, Nematoda	Ch.10 (10, 12) + videos	Ch.10 (254, 256) + videos	WC9
12	19	Apr 2	Mollusca, Annelids	Ch.10 (9,11-12)	Ch.10 (253, 255-6)	
	20	Apr 4	Arthropods	Ch.10 (13-18)	Ch.10 (257-62)	WC10
13	21	Apr 9	Echinoderms	Ch.10 (19) + video	Ch.10 (263) + video	Field trips in lieu of labs
	22	Apr 11	Chordates	Ch.10 (20-26)	Ch.10 (264-70)	WC11
14		Apr 16	Summative assessment 3			
	23	Apr 18	Population Ecology	Ch.12 (4-9, 12-14)	Ch.12 (322-7, 330-32)	WC12
15	24	Apr 23	Community Ecology	Ch.13 (6-13) + video	Ch.13 (350-7) + video	
	25	Apr 25	Behavioral Ecology	TBD	TBD	WC13
16	26	Apr 30	Conservation Biology	Ch.11 (24-29)	Ch.11 (308-13)	
Summative assessment 4: SUNDAY, MAY 5th, 1-3PM						