Introduction to Evolution and Scientific Inquiry, COVID-19 Version

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Link to join class Slack   CLICK ME
Course Website   https://spielmanlab.github.io/courses/introevol/

Course Description:

This course is designed to introduce new Biology majors to our core curriculum. It lays the foundation for this curriculum and introduces students to foundational concepts in evolution. The course will also introduce students to the scientific method and develop the basic skills for collecting, analyzing, and presenting data. Subsequent courses in the core curriculum will introduce other areas of biology and will build upon the foundation of knowledge and skills acquired in this course.

Course Objectives and Student Outcome Goals:

In this course, we will focus on fundamental biological concepts, specifically those relating to organismal diversity, evolution, and adaptation, as well as the development of basic skills for biological inquiry. At the completion of this course, you should have achieved:

- A basic understanding of patterns in organismal diversity and their causes
- Comprehension of evolutionary concepts and an appreciation of their scientific basis and relevance to biological phenomena.
- Familiarity with experimental design, data collection, and basic data analyses.
- Familiarity with both the creation and interpretation of graphs and data tables.
- The development of critical thinking skills.
- Increased ability to function as part of an effective team.

Required Texts:

- *Introduction to the Science of Evolution*, by Luke Holbrook, PhD
  - E-book version available here:
    https://he.kendallhunt.com/product/introduction-science-evolution
- Supplementary readings either online or PDF will be given when needed on course website
- For certain classes you will need to bring a laptop or tablet to class. If you do not have access to a personal machine, please see me and I will get you one for the semester.

Evaluation:

Your grade will be derived from the following assessments:

ONE Midterm Exam	**15%**
Assignments	**85%**

As you see above, part of the grade will be determined by a number of **homework assignments**. You are encouraged to work with classmates on all assignments, but **each student must submit their own assignments written in YOUR OWN WORDS. Any submission of plagiarised text or wording that is not entirely your own will be regarded as a Level Two or Three Academic Integrity Violation and subject to university-level penalties. DON'T TRY IT.**

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Your final grade will be converted to a percentage and then to a letter grade according to the table below. These grade boundaries are subject to change, but cutoffs here correspond to the *lowest* letter grade you can receive for the corresponding percentage. Percentages for final grades are rounded; for example, a final grade of 89.5 rounds to an A-, and a final grade of 89.4 rounds to a B+.

A = 93 - 100%	B- = 80 - 82%	D+ = 67 - 69%
A- = 90 - 92%	C+ = 77 - 79%	D = 63 - 66%
B+ = 87 - 89%	C = 73 - 76%	D- = 60 - 62%
B = 83 - 86%	C- = 70 - 72%	F = below 60%

Course Policies:

Assignment Policy
- *Late assignments will NOT be accepted without prior permission.* If you need an extension on an assignment, you must contact me <u>at least 24 hours in advance of the deadline</u> with a request for an extension explaining why it is merited. If you receive a positive email confirmation in response, you have been granted an extension.
- All students will receive a <u>one-time "free" late assignment</u> that must be submitted within 24 hours of the deadline. You must notify me if/when you use your late assignment <u>no later than the original deadline.</u>
- Your lowest assignment grade will be **dropped!!**

Attendance Policy
- No more attendance! Happy remoting!

Email Policy
Please do not expect an email response between the hours of 7 pm - 9 am, and anytime on Saturday. Please also primarily use Slack for communication in the post-COVID times.

Academic Integrity Policy
Academic integrity is taken **EXTREMELY SERIOUSLY** in this class. You are ALWAYS expected to submit your OWN work. **Any form of cheating or plagiarism is not permitted and WILL BE REPORTED TO THE UNIVERSITY, NO EXCEPTIONS.** As part of this policy, be aware: If you copy another student's homework or answers, BOTH STUDENTS will be subject to penalties.

Regrade Policy
If you feel that a re-grade of an assignment or project is merited, you must fill out and submit *via email* a regrade form, which can be found on the course website. To be considered, this form must be submitted *within two weeks* of receiving the disputed grade. If you believe points were incorrectly added for an assignment or there is a

similar minor grading error, you can speak with me directly to request a re-grade without this form.

Key University Policies:
As a student at Rowan University, you are expected to adhere fully to all university-wide academic policies outlined here: https://confluence.rowan.edu/display/POLICY/Administrative+Policies.

Key policies to be aware of can be found at the following links:
- Classroom Behavior Policy: https://confluence.rowan.edu/display/POLICY/Classroom+Behavior
- Academic Integrity Policy: https://confluence.rowan.edu/display/POLICY/Academic+Integrity+Policy
- Student Accommodation Policy: https://confluence.rowan.edu/display/POLICY/Accommodation+Policy
- University Attendance Policy: https://confluence.rowan.edu/display/POLICY/Attendance+Policy

Rowan University is required to accommodate students with documented disabilities. **Your academic success is important. If you have a documented disability that may have an impact upon your work in this class, please provide the professor with up-to-date documentation from the Academic Success Center *as soon as possible!*** Students must provide documentation of their disability to the Academic Success Center in order to receive official University services and accommodations. The Academic Success Center can be reached at 856-256-4234. The Center is located on the 3rd floor of Savitz Hall. The staff is available to answer questions regarding accommodations or assist you in your pursuit of accommodations. Additional information and resources can be found at this link: https://sites.rowan.edu/disabilityresources/.

Rowan Success Network ("Starfish®"):
The Rowan Success Network powered by Starfish® is designed to make it easier for you to connect with the resources you need to be successful at Rowan. Throughout the term, you may receive email from the Rowan Success Network team (Starfish®) regarding your academic performance. Please pay attention to these emails and consider taking the recommended actions. Utilize the scheduling tools available through RSN to make appointments (tutoring, advising, etc.) at your convenience. Additional information about RSN may be found at www.rowan.edu/rsn.

Rowan Core:
Starting in Fall 2018, first-year undergraduate students at Rowan University must complete the new general education requirements, known as "RowanCore." (Continuing students and new transfer students will follow the existing general education requirements.) Students in Rowan Core must complete course requirements in six literacies: Artistic, Communicative, Global, Humanistic, Quantitative and Scientific.
This course belongs to the *Scientific Literacy* category. All students in this course will be assessed on the following Rowan Core Learning Outcomes for this literacy:

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- Students can demonstrate knowledge of core ideas and vocabulary of science and the scientific method in written and/or oral work.
- Students can conduct directed experiments including set-up, data collection, data analysis, and interpret results to either "discover" or verify scientific theory.
- Students will apply scientific data to solve a real-world problem.
- Students will conduct, critique and design scientific studies following the standard scientific method.

Updated Information for Introduction to Evolution and Scientific Inquiry (Section 4, Spring 2020)

READ THE CONTENTS OF THIS DOCUMENT CAREFULLY. Please post questions or clarifications in the #logistical-questions Slack channel.

If you have not yet joined the class Slack workspace, please do so ASAP:

- Link to join class workspace
- Please download the Slack app for your computer and phone - will be very helpful and is WAY better than the browser version.

Weekly class

- Every week, you can expect 1-3 lecture videos to debut **each Monday** with that week's materials, and two assignments due each week, with deadlines spread out on **Thursdays at 11:59 pm** and **Sundays at 11:59 pm** (more info in next section).
- As before, materials will be hosted on the class website here, and submissions will be on Blackboard.

Updated Grading Scheme

Your final grade will now be determined from the following:

- First Midterm (15%)
- Assignments (85%)

Details on assignments

- You will stop drop the lowest grade!!

- In the end, there will be **15** assignments total, meaning each assignment is ~5.6% of your final grade (16 listed below, you drop the lowest automatically):

  - Already assigned (6)
    * Proof of Safety Training Submission
    * Termite Lab
    * Stickleback Lab
    * EvoDots Activity
    * Concepts in Natural Selection "Quiz"
    * Population Genetics Assignment
  - **10** assignment grades will be forthcoming after break.
    * There will be two assignments each week, due respectively on Thursdays at 11:59 pm and Sundays at 11:59 pm (it will be clear which is which!). Effectively, in-class worksheets (as well as existing HW assignments that would have been assigned anyways) will be converted to smaller assignments. This will ensure regular engagement with material.
    * The final assignment will count DOUBLE AS TWO ASSIGNMENTS (aka a total of ~11% to your final grade, still less than a real exam at 15%!), and will be analogous in SCOPE (aka, it is cumulative) to a final exam.

- You will be organized into Teams for the rest of the semester so you have a stable group to work on assignments with. You are always welcome to work with those students outside your team, but you are **strongly encouraged** to coordinate with your formal team members as working groups. You will receive information within the next week about who is in your Team (yes, I am picking for you).

- Please assume the following rules for all upcoming submissions:

  - Open-note, open-book, open-friends! *Be careful with the internet* - the temptation to use random internet materials and videos will be much higher. Please use the `#resources` channel to ask me if materials you find are legit!!
  - As always you must submit YOUR OWN WORK IN YOUR OWN WORDS (including teams - each team member should present their OWN work).

Communication

Virtual Meetings

- There will be two kinds of office hours, for which all scheduling will be done via **Google Calendar**. Join the calendar here (you must be logged into your Rowan account). Please use the GOOGLE CHROME BROWSER!! Not Internet Explorer, not Safari, not Firefox - they are not guaranteed to work cleanly with the Google services that we will use. Associated with each appointment will be a **Google Hangouts Link** to join.
  - Every **Wednesday from 11 am - 12:15 pm** there will be an open session for anyone to join. Links to join these meetings will be embedded in the calendar event.
  - Every **Tuesday 1-2:30 pm** and **Friday 1-2:30 pm** there will be opportunities to book individual (or team!!!) remote meetings with me, again via the class google calendar. These bi-weekly events are scheduled in the calendar. To make an appointment, click the event, and then click "Go to appointment page for this calendar." You can then book 1 or more (but please don't overbook!!) 15-minute time slots. Once you have made an appointment and I am notified, I will be able to turn on a Google Hangout link for the meeting. Make sure to book meetings in a timely fashion!!
  - If you are unable to make any of those times, please DM me on Slack and we will find another suitable time to meet.
  - To facilitate scheduling, I highly recommend you install the "Google Calendar" app to your Slack. See here for information.

For other types of communication (questions, emails), please default to the Slack Workspace for all communications:

- DM me on the app for indiviualized conversation. If any conversation appears important enough to merit being on email, I will transition the conversation accordingly.
- Use the `#channels` to direct flow of information and general discussions (topics below represent what we will be covering for the rest of the semester)
  - `#general`: The baseline place to ask questions when there is no other specific # channel more appropriate.
  - `#logistical-questions`: Questions about deadlines and similar class logistics
  - `#random`: Fun and at least marginally relevant things (memes? articles? whatever!) you find that would be fun to share with the class. **Keep this SFW**.
  - `#assignments`: Questions that pertain to weekly assignments should go here. **All questions about completing assignment questions should be directed here!!** Previous rules of "only use email for logistical questions rather than content questions" are now suspended. Use this channel!!!
  - `#resources`: Questions about whether a specific resource you have found is ok to use!
  - `#speciation`: Questions that specifically pertain to speciation, reproductive isolation, etc. *Not for specific assignment questions.*
  - `#phylogenetics`: Questions that specifically pertain to interpreting and using phylogenetic trees and/or working with character matrices/sequence alignments. *Not for specific assignment questions.*
  - `#biogeography`: Questions that specifically pertain to biogeography (includes "phylogenetics of speciation" content). *Not for specific assignment questions.*
  - `#pathogen-evolution`: Questions that specifically pertain to pathogen evolution *and their associated phylogenetics. Not for specific assignment questions.*
  - `#origins-transitions`: Questions that specifically pertain to origins of life and major evolutionary transitions, including fossils. *Not for specific assignment questions.*
  - `#human-evolution`: Questions that specifically pertain to human origins and evolution. *Not for specific assignment questions.*
- Protip! For each message you send to a `#channel`, there is an option to reply directly and start a thread - this keeps conversations grouped! If/when you start a thread, please be sure to click the button that shares responses with everyone in the class.

What should you NOT worry about?

- Attendance. There are no required in-person meeting times. As long as you get the work in on time, you'll be set.
- Time to complete assignments. While there are deadlines, nothing will be within the context of a *timed* Blackboard test. In other words, nothing will be a "do this in Blackboard and you get cut off in 45 minutes." Not happening.
- If you get severely ill and are unable to complete assignments, please reach out to me ASAP. I may ask for a *brief* video chat to confirm your circumstances. **Extensions will be liberally granted when they are**

appropriate. Please do not assume an extension is granted unless I explicitly tell you so - asking for one is not the same as receiving one.

- – If an extension is not feasible given the circumstances, there will be a possibility to exempt you from the given assignment entirely.