

SYLLABUS
BIOL202-Introduction to Ecology and Evolution
Sections 001, 002, 003, & 004
Spring 2021

Syllabus Highlights:

- This class is entirely online and partially synchronous.
- This class will have synchronous meeting times MW 11:00-11:50am online; all students are expected to attend and participate.
- This course is team taught.
- Most of the grade will consist of weekly quizzes and assignments. There are no exams in this course in Spring 2021.
- There is no extra credit in this course

Instructors

This course is team-taught so students will see multiple instructors during the semester. Your instructors are:

- Steve Kimble
skimble@towson.edu (best contact method)
410.704.2691
Office hours: Mondays 1:00pm-4:00pm (send an email to request an online meeting)
Dr.K will oversee the course administration, lectures, discussions, and quizzes **for all four sections**. Questions on these should be addressed to him.

- Sarah Longo
slongo@towson.edu
410.704.3012
Office hours: Virtual drop-in office hours Mondays and Thursdays from 12:30-1:30pm.
Via zoom: <https://towson-edu.zoom.us/j/99545187805?pwd=NTVBMkVHVjloZkorNmFaZXZITik5UT09>
Dr. Longo will oversee the laboratory assignments **for section 001 only**. Questions on these should be addressed to her.

- Christa Partain
Cpartain@towson.edu
410-704-4167
Office hours: by appointment. Email Professor Partain for a meeting time.
Professor Partain will oversee the laboratory assignments **for section 002 only**. Questions on these should be addressed to her.

- Amy Strauss
astrauss@towson.edu (best contact method)
510.734.2607
Office hours: Thursdays 12:30pm-1:30pm on Zoom here: <https://towson-edu.zoom.us/j/96012086357?pwd=S0E2cStRRCswOEc5eVdOeTI5NmM3Zz09>, or by appointment.
Ms. Strauss will oversee the laboratory assignments for **sections 003 and 004 only**. Questions on these should be addressed to her.

Undergraduate Learning Assistant (ULA)

This course is also supported by undergraduate learning assistants (ULAs). The ULAs are former successful students in the same or similar courses and will help students with content, navigate the course, act as liaisons between the students and the instructors, and offer other help as needed. Your ULAs are:

- Alexa Kolodziej
Email: akolod2@students.towson.edu
Office hours: Monday 8:30-10:30am
Alexa will be the “lab assignment ULA”, meaning that you should direct questions about lab assignments (due Mondays at 11:59pm) to her.
- Mustapha Kah
Email: mkah1@students.towson.edu
Office hours: Thursdays 2-4pm
Mustapha will be the “lecture ULA”, meaning that you should direct questions about lectures, knowledge checks, and discussion boards to him.

Course Format:

For Spring 2021, students will complete this class by:

- attending live online meetings Mondays (Unit introductions) and Wednesdays (Q&A)
- watching prerecorded lectures on blackboard (this course is team taught so you will see several different instructors)
- participating in online discussion boards on blackboard (due Fridays at noon)
- completing quizzes on blackboard (1hr quizzes, available noon Fridays-noon Saturdays)
- completing all lab assignments on blackboard or simbio (due the following Mondays at 11:59pm)

Synchronous sessions will be used to introduce, review, and discuss both lecture and lab assignments material. While synchronous participation is not graded, attending and participating in synchronous sessions is pivotal for student success. All synchronous meetings will be recorded and made available to the entire class via blackboard.

The course is divided into Units with one Unit per week (except Unit 1 which will last for the first two weeks of classes). Unit materials for the week are published on Monday mornings.

Course Website:

Lectures, discussion questions, zoom links, lab assignments, quizzes, announcements, and other materials will be posted on the course Blackboard website, which can be accessed at: <https://blackboard.towson.edu/>. Please check our Blackboard site and your TU email regularly for announcements.

Prerequisite:

This course is intended to follow BIOL200 or equivalent with a grade of C or better.

Recommended Textbook:

Biology, 12th edition, Raven *et al.*, McGraw-Hill Higher Education, ISBN: 9781260169614.

This text is a good one for this course, so it is recommended but not required. You do not need to purchase this book if you do not want to, but some students prefer to have a textbook. You may also be able to rent this book. Prior editions of this book can also be used.

Course Objectives (Learning Outcomes):

The purpose of BIOL 202 is to introduce you to ecology and evolution. Emphasis will be placed on learning the key concepts in each of these fields of biological study. The laboratory assignments will be used to support these key concepts and to teach students the principles of collecting, organizing, analyzing, interpreting and drawing inferences from data. By the end of this course students should be able to:

- Design a controlled scientific experiment and correctly identify null and alternative hypotheses and independent and dependent variables.
- Perform and interpret the results of a t-test, chi square and correlation.
- Demonstrate understanding of scientific literature by answering discussion questions.
- Use population growth equations to predict the size of populations in future generations
- Describe the effects of competition and resource limitation on population growth rate
- Explain the effects of completion and ecological niches on structuring communities
- Differentiate between interference and exploitative competition
- Define species richness and species diversity
- Describe the role of disturbance in maintaining diverse communities
- Define evolution from several different perspectives, including use of Hardy-Weinberg equations
- Explain the process of evolution by natural selection, sexual selection and genetic drift
- List and describe several difference lines of evidence for evolution
- Read and construct a phylogeny
- Describe several different methods of speciation

Determination of Course Grade:

Item	Number	Points	Total Points	Percentage
Quizzes			285	30%
Quiz 0	1	10		
Quiz 1-13	11*	25		
Small assignments	13**	25	325	34%
Large assignments	6**	50	300	31%
Discussion boards	11***	5	55	5%
Total			965	100%

*There are 13 total quizzes worth 25 points each. Your lowest two scores from Quiz 1 to Quiz 13 will be dropped at the end of the semester. Quiz 0 is only worth 10 points and cannot be dropped.

** There are 15 small assignments total worth 25 points each and 7 large assignments total worth 50 points each. Your lowest two small assignment scores and lowest one large assignment scores will be dropped at the end of the semester.

*** There 13 total discussion boards worth 5 points each. Your lowest two discussion scores will be dropped at the end of the semester.

Final grades will be determined as follows:

A (93.3-100%); A- (90-93.2%); B+ (86.7-89.9%); B (83.3-86.6%); B- (80.0-83.2%); C+ (76.7-79.9%); C (70-76.6); D+ (66.7-69.9%); D (60-66.6%); F (below 60%).

A ≥ 93.3%
A- 90.0 < 93.3.0%
B+ 86.7 < 90.0%
B 83.3 < 86.7%
B- 80.0 < 83.3%
C+ 76.7 < 80.0%
C 70.0 < 76.6%
D+ 66.7 < 70.0
D 60.0 < 66.7%
F < 60.0%

Grades will not be curved, and there are no "extra credit" assignments, so ask questions and plan your time carefully.

Quizzes:

Weekly quizzes will be given in order to encourage you to stay current with the material. Unless otherwise noted, you may use any resource EXCEPT other humans. Weekly quizzes are available for 24 hours between 12 pm (noon) Friday and 12 pm (noon) Saturday on Blackboard, beginning Friday Jan 29, 2021. Once you begin the quiz, you will have 1 hour to complete it; Blackboard will automatically submit for you 1 hour after you begin. You have one attempt, though you can revisit questions before submitting. Missed quizzes cannot be made up and will be scored as zeros (but remember that we drop two when tallying the final grade). A student's first and second missed quizzes will be counted as the dropped quizzes, even if they were missed for an excused reason. Subsequent missed and excused quizzes will be made up during the final week of class and are composed of essays only.

Assignments:

One or more assignments will be posted in the weekly unit folders on Blackboard (under "Content"). Assignments include activities and exercises that would normally be part of the laboratory portion of this course, all well as homework activities and other assessments to reinforce lecture material. Units start on Mondays and all assignments for that unit are due the following Monday at 11:59 pm local (Towson University) time and should be submitted electronically on Blackboard (except SimBio assignments, which are submitted through the Simbio software). Please check your assignments after submission to make sure that they open properly and make sure that you have received a receipt email from blackboard (this is your receipt in case blackboard loses your assignment). It is your responsibility to confirm that an uploaded file is in the proper file format (i.e., *.doc, *.docx, *.pdf, *.jpeg, *.xls, *.xlsx, etc.). Students who are using Mac computers should make sure that their files are in the right file format and can be opened on a Windows computer (pro tip: save .doc and .docx and image documents as .pdfs). Late assignments are not accepted; instead they will count towards the dropped assignments.

Attendance and absences:

This course is all online but synchronous participation is required in order to be successful in this course. It is the regular policy of the University to excuse the absences of students for the following reasons:

- illness or injury when the student is unable to attend class
- death of a family member (see the Student Bereavement Procedure on the website)

- religious observance where the nature of the observance prevents the student from attending class
- participation in University activities at the request of University authorities (e.g., an extended online conference)
- compelling and verifiable circumstances beyond the control of the student

The exceptional circumstances presented by the SARS-CoV-2 (coronavirus) pandemic create the potential for additional flexibility in qualifying absences as excused. Such extenuations might include: absences related to extended illness, quarantine, caring for family members, childcare (and support of children's online learning) due to school closures, or urgent job concerns related to financial need, emergency situations, or food insecurity. Students requesting an excused absence must provide documentation to the instructor two weeks prior to the scheduled absence when known in advance or as soon as possible when not known in advance. Absences that do not fall into any of the above categories are unexcused. Students who will be representing TU at events, conferences, or other official activities should obtain verification of absence from the appropriate official. A Notification of Absence from Class Form from the Office of Campus Life, University Union 232, should be given to instructors to verify the excused absence. Students are encouraged to notify faculty of anticipated class absences as soon as they learn they will be missing class. Students who are absent from class are responsible for any missed work, assignments or assessments (e.g., quizzes, discussions, assignments, etc.). No make-ups are available for missed assessments unless you submit a documented and legitimate excuse as defined above. Absences are excused at the sole discretion of the instructor. For the official University policy, see: <https://catalog.towson.edu/undergraduate/academic-policies/class-attendance-absence-policy/>

Discussion Boards: Each unit will have a discussion board with questions designed to assess your understanding of the unit material and study for quizzes. Every week, students should post 5 times to the discussion board, to earn a total of five points per discussion board. Each post on the discussion board is worth one point. Because the boards are a learning tool, grades are on effort and thoughtfulness in response to the prompt, rather than whether they are completely correct. Each question can be answered by multiple students, and students are encouraged to refer to and respond to other student's answers in their posts, to simulate a real discussion. The instructor and the ULA will monitor the discussion boards and jump in if something needs clarification, but they are largely student driven. Do not post more than five times each week to give other student the opportunity to respond to questions. Discussion boards will be locked for questions and comments at 12 pm every Friday. Your two lowest discussion board scores over the course of the semester will be dropped.

Expectations for Online Conduct:

- *Proofread your messages/posts before you hit send.*
- *ALL CAPITALS is the same as shouting your message, check your caps lock button.*
- *Don't flame—everyone is entitled to the right to speak their opinion. Respect the opinions of others.*
- Make meaningful replies. Don't just agree—say why you agree! Or disagree, as the case may be—just do so respectfully.
- Treat the other students and your faculty member the same online as you would in person. Engage with others in a respectful manner.

- Remember the TU Student Code of Conduct in all online engagement.
- It is not appropriate to post statements of a personal or political nature, or statements criticizing classmates or faculty. Inappropriate statements/language will be deleted by the course faculty.
- *Know that students who do not follow basic netiquette rules may be suspended from discussion board use.*

Academic Integrity:

Students are responsible members of the academic community. You are therefore obligated not to violate the basic standards of integrity. You are also expected to take an active role in encouraging other members of the community to respect those standards. Should you have reason to believe that a violation of academic integrity has occurred, you are encouraged to make the suspicion known to a member of the faculty or University administration.

Cheating means using, attempting to use, and/or disseminating unauthorized materials, information, notes, study aids, videos or other devices in any academic exercise. This includes unauthorized communication of information during an exercise or exam. Some examples include but are not limited to: Copying from another student's paper or receiving unauthorized assistance during any graded deliverable; using books, notes or other devices (e.g., calculators, phones, watches, laptops, or other internet enabled devices) when these are not authorized; procuring without authorization tests or examinations before the scheduled exercise (including discussion of the substance of examinations and tests when it is expected these will not be discussed); copying reports, laboratory work, computer programs or files and the like from other students; collaborating on laboratory or computer programs or files and the like with other students; collaborating on laboratory or computer work without authorization and without indication of the nature and extent of the collaboration; sending a substitute to take an examination, using solutions manuals, providing exam and assignment questions to student websites or using such a website to complete an assignment and/or exam (including free or pay websites that maintain textbook and/or instructor solutions). To clarify, copying or collaborating with other students or using external resources, including other people, on any type of assignments that are expressly designed to be completed individually is cheating.

Plagiarism (word for word copying of material without quotation marks and source citation, or rephrased use of information from a source without citation) and close paraphrasing (regardless of length) from any source including the textbook or another student's work or websites, is also a form of academic dishonesty because it represents theft of another person's idea(s) and/or way of expressing them. Proper citation of sources is expected for all BIOL 202 assignments and is evaluated as part of the grade assessment for all assignments.

Recorded sessions and any associated materials are designated ONLY for registered students in the class. Any sharing or dissemination of recordings beyond the student body registered in the course and section constitutes a violation of privacy and may also be categorized as cheating or defamation of character (depending on the circumstance), a possible copyright infringement.

Complicity in Academic Dishonesty means helping or attempting to help another commit an act of academic dishonesty. Some examples include but are not limited to: Allowing another to copy from one's paper during an examination or test; distributing test questions or substantive information about the material to be tested without authorization before the scheduled exercise; collaborating on academic work that is expressly designed to be completed individually; taking an examination or test for another student; signing a false name on an academic exercise; or sharing assignment or exam information before, during, or after the deliverable in written, electronic, video, or verbal form. (Note: Collaboration and sharing information are characteristics of academic communities. These become violations when they involve dishonesty. Students should seek clarification when in doubt).

Documented instances of intentional plagiarism and cheating are subject to serious penalties. The penalties that may be assessed by a faculty member for a course-related violation may include the following: [1] revision of the work in question and/or completion of alternative work, with or without a grade reduction; [2] reduced grade (including "F" or zero) for the assignment; [3] reduced grade (including "F") for the entire course. The incident will be reported to the Office of Student Conduct and Civility Education as required by Towson University revised Student Academic Integrity Policy (effective Fall 2002). Report of a second violation of this policy by a student can result in suspension or expulsion from the University.

Copyrighted Material:

My lectures and course materials, including, but not limited to power point presentations, tests, outlines, and similar materials, are protected by copyright. I am the exclusive owner of copyright in those materials they create. You may take notes and make copies of course materials for your own use; however, you may not, nor may you allow others to, reproduce or distribute lecture notes and course materials publicly whether or not a fee is charged without my express written consent. Similarly, you own copyright in your original papers and exam essays. If I am interested in posting your answers or papers on the course web site, I will ask for your written permission.

Americans with Disabilities Act:

Qualified student with a disability wanting to seek accommodations under the AWD Act are required to self-identify with Disability Student Services in the Administration Building and present a letter to the instructor from DSS. This should be done during the first week of class. Students who suspect that they have a disability but do not have documentation are encouraged to contact DSS for advice on how to obtain appropriate evaluation.

Loaner Laptop Availability, Student Support Funds, and free software:

The Office of Technology Services (OTS) has a limited number of laptops to loan to students whose personal computers are unable to run Blackboard, WebEx, Zoom or applications required by the curriculum. If you need to borrow a device, talk to your instructor; they can submit a request on your behalf. The Towson University Foundation has created the Student Emergency Fund, which has some funds available to assist students in purchasing hotspots, upgrading home internet, and other necessary technologies. For more information, see their [website](#). As a Towson University student, you can also get free software such as Excel. Visit the OTS site here:

<https://www.towson.edu/technology/student-services/software-hardware/> (there are also useful tips on this page if you are looking to buy a computer).

Simbio:

Several of the lab assignments are simulations in SimBio software. This is a standalone software package that you need to download and interact with (not blackboard) for these assignments. They are already paid for with your lab fees. To get started see the "Simbio setup" item under "Syllabus, info, etc." on the course blackboard page.

Diversity Statement:

Towson University values diversity and fosters a climate that is grounded in respect and inclusion, enriches the educational experience of students, supports positive classroom and workplace environments, promotes excellence, and cultivates the intellectual and personal growth of the entire university community. Should you feel that you are experiencing a negative environment related to diversity issues or cultural sensitivity, we encourage you to contact the Department's Diversity Committee Chair, [Dr. Colleen Winters cwinters@towson.edu]. For more information go to <http://www.towson.edu/fcsm/diversity/>

Mental Health:

These are difficult times and there is no shame in needing mental health help. Services available through the Health and Counseling Centers include group counseling, 24hr crisis support, substance use counseling and much more. They can be reached at <https://www.towson.edu/counseling/> or 410.704.2512 (answered 24/7).

Career Center:

The Career Center can help you with your major/career exploration and planning, developing your personal brand documents (resume, cover letter, LinkedIn, etc.) and job/internship resources and connections. You can make a virtual or phone appointment through Handshake at your convenience. For more information visit: <https://www.towson.edu/careercenter/>

Correspondence Policy:

The best way to contact me is by email. Remember that our correspondence is of a professional nature so you need to be both respectful and professional in your written correspondence. Please use proper grammar, punctuation and capitalization in your emails. Also please address the instructor properly at the start of the email and sign your full name at the end. **Your emails regarding this course should contain the course name (BIOL202) and section number in the subject line and be sent from your TU email account.**

Lab Fees:

The use of the lab fee for this course (and all such courses at Towson) can be accessed here: http://www.towson.edu/provostpbo/documents/class_fees.pdf.

Tentative schedule for BIOL 202 Spring 2021

The schedule of topics and assignments is tentative and may change at any time. Students will be given ample notice of changes in assignments, homework due dates and quiz dates.

New unit material will be made available on blackboard the previous week, e.g., the material for Unit 3 will actually be posted by 8 February.

Discussion boards close Friday at 12 pm (noon) on the day of the quiz.

Quizzes will be open between 12 pm (noon) on Friday and 12 pm (noon) Saturday. Once you start, you have 60minutes to take the quiz.

All lab assignments are due Monday nights at 11:59 pm on blackboard or simbio.

Date	Unit	Lecture Topics	Lab Assignment(s)	Due dates
Jan25	1	Course Introduction Origin of Life Introduction to Evolution	1. Experimental Design (SimBio; 25)	Quiz 0: Jan 29 – Jan 30 @ noon Assignments: Mon Feb 1 @ 11:59 pm
Feb1	1	Evidence for Evolution	1. Hypothesis Testing (25) 2. Cat Genetics WK1 (25)	Discussion Posts: Feb 5 @ noon Quiz 1: Feb 5 – Feb 6 @ noon Assignments: Feb 8 @ 11:59 pm
Feb8	2	Hardy–Weinberg Equilibrium Natural Selection	1. Darwinian Snails (SimBio; 25) 2. Intro to Excel WK1 (25)	Discussion Posts: Feb 12 @ noon Quiz 2: Feb 12 – Feb 13 @ noon Assignments: Mon Feb 15 @ 11:59 pm
Feb15	3	Natural selection Variation and mutation	1. Cat Genetics WK2 (50)	Discussion Posts: Feb 19 @ noon Quiz 3 : Feb 19 – Feb 20 @ noon Assignments: Mon Feb 22 @ 11:59 pm
Feb22	4	Non-random mating Gene flow Genetic drift	1. Genetic Drift and Bottlenecked Ferrets (SimBio; 25) 2. Intro to R (50)	Discussion Posts: Feb 26 @ noon Quiz 4: Feb 26 – Feb 27 @ noon Assignments: Mon Mar 1 @ 11:59 pm
Mar1	5	Systematics Phylogenetics	1. Phylogeny Lab WK 1 (50)	Discussion Posts: Mar 5 @ noon Quiz 5: Mar 5 – Mar 6 @ noon Assignments: Mon Mar 8 @ 11:59 pm
Mar8	6	Speciation Species concepts	1. Phylogeny Lab WK 2 (50)	Discussion Posts: Mar 12 @ noon Quiz 6: Mar 12 – Mar 13 @ noon Assignments: Mon Mar 22 @ 11:59 pm
Mar15		Spring Break		
Mar22	7	Demography Survivorship	1. Go Outside! (25) 2. Cemetery Lab WK1 (25)	Discussion Posts: Mar 26 @ noon Quiz 7: Mar 26 – Mar 27 @ noon Assignments: Mon Mar 29 @ 11:59 pm
Mar29	8	Exponential growth Logistic growth Density dependence Tradeoffs	1. Heske and Brown 1990 (25) 2. Intro to Excel Wk 2 (25)	Discussion Posts: Apr 2 @ noon Quiz 8 : Apr 2 – Apr 3 @ noon Assignments: Mon Apr 5 @ 11:59 pm
Apr5	9	Niche		Discussion Posts: Apr 9 @ noon

		Competition Weakening factors Predation	1. Cemetery Lab WK2 (50)	Quiz 9: Apr 9 – Apr 10 @ noon Assignments: Mon Apr 12 @ 11:59 pm
Apr12	10	Parasitism, Mutualism, Indirect, interactions Keystone species	1. Keystone Predator (SimBio; 25) 2. Phenology Lab Wk 1 (50)	Discussion Posts: Apr 16 @ noon Quiz 10: Apr 16 – Apr 17 @ noon Assignments: Mon Apr 19 @ 11:59 pm
Apr19	11	Succession Primary production Trophic efficiency Top-down and bottom-up control	1. Trophic levels (25) 2. Climate Change Docu. (25)	Discussion Posts: Apr 23 @ noon Quiz 11: Apr 23 – Apr 24 @ noon Assignments: Mon Apr 26 @ 11:59 pm
Apr26	12	Carbon cycle Nitrogen cycle Phosphorus cycle	1. Phenology Lab WK2 (50)	Discussion Posts: Apr 30 @ noon Quiz 12: Apr 30 – May 1 @ noon Assignments: Mon May 3 @ 11:59 pm
May3	13	Water cycle Diversity Island biogeography	1. Nutrient Pollution (SimBio; 25) 2. Carbon Footprint (25)	Discussion Posts: May 7 @ noon Quiz 13: May 7 – May 8 @ noon Assignments: Mon May 10 @ 11:59 pm
May10		Wrap-up. May 11 last day of classes. There is no final exam for this course.		

Important Dates:

25 January – Classes begin

2 February – Change of schedule period ends

13-21 March – Spring break

April 5 - Last day to withdraw from full semester courses with a grade of "W".

11 May – Last day of classes

12-18 May – Final exams (but there is not final exam in BIOL202 Spring 2021)