BIOSC 0165: UHC FOUNDATIONS OF BIOLOGY II
Department of Biological Sciences
University of Pittsburgh

Faculty	Zuzana Swigonova Ph.D. • Email: zus3@pitt.edu • Office hours: o Mondays: 3:00 AM - 4:00 PM o Thursdays: 6:00 - 7:00 PM o *Office hours by appointment can be arranged by email. All office hours will be via Zoom and links available via Canvas.*
Lecture and Recitations	Lecture/Recitation: Tu & Th - 9:25 – 11:45 AM, A214 Langley Hall Based on the current University posture, we will start remotely (on Zoom) for the first 2.5 weeks of the term. In-person instruction will start on Thursday, January 27. The course will use Zoom, Canvas, and TopHat. You must use Zoom to connect to online lectures/recitations, and office hours and Canvas to access lectures slides, worksheets, supporting resources and other course material. TopHat will be used for weekly review assignments. Remote start of the term: synchronous lectures will be delivered via Zoom and recorded to accommodate for potential internet instability or disruptions. These initial lecture recordings will be posted on Canvas. You must inform the instructor if you have schedule/time zone/ or other type of conflict to meet during scheduled times! After transition to in-person instructional mode, you are expected to be present in class. Lecture recordings will not be used to provide for an effective working environment and allow for open and free expression.
Course objectives	This is a second part of a two-semester introductory course in biology. In this course we will study the unifying principle of biology: evolution. We will begin by exploring the mechanisms of evolution on the molecular level (genetics and genomics) and then we move onto the fundamental principles of natural selection and speciation. In the final unit of the course, we will apply the evolutionary theory to study of ecology.
Textbook	Text Book & TopHat – required: • Life, The Science of Biology, Author: Sadava, Hillis, Heller, and Hacker. Publisher: Sinauer & Macmillan, Edition: 12th, Year Published: 2020 o Textbook is required, (you do not need Launchpad, it is optional, you may use it for an extra practice) o Hardcover: ISBN: 978- 1319017644 o Loose-leaf: ISBN: 978- 1319307059 (may not sell back) o eBook: ISBN: 978- 1319298227 o *Optional*: Achieve: ISBN:978 - 1319364991 • TopHat – required; this is an online resource we will use for review assessments; you will receive an email invite to sing into the course shell Note: You will be responsible to read chapters and specific parts from the textbook that may or may not be covered in lecture. *You may consider to obtain an earlier version of the text – it would serve well as a reference source.*
Canvas	Zoom meetings, course material, lecture recordings, links to assessments, and gradebook will be accessible from Canvas. Main communication with the class will be during class time and via Canvas announcements.

Assignments	Weekly assignments include reading of background chapters as indicated in the course schedule. You are required to read the assigned chapter prior to the lecture. There will be additional readings based on the topics covered (such as peer reviewed journal articles), which will be announced in class and posted on Canvas. You must check Canvas regularly for new postings. ***Be proactive, this is a dynamic class and active participation is essential for success in this course.***
Lecture & Recitation as one class session:	There are two 140-minute sessions per week. You are expected to read the assigned chapters before each period, review covered material as needed, and take notes during class. Problem solving, practice, and review questions will be intermixed with lecture. Be prepared to answer questions anytime during class! Worksheets with problem solving activities will be posted on Canvas prior to class. You will be expected to work on those during breakout sessions with your classmates. Some of these activities will require completion of work before or after class and submission of your work for grading. Be prepared and keep up with your studying. Active participation and constructive comments are expected from you during class meeting at any time.
Office hours	All office hours are hold via Zoom and accessible from Canvas. In addition to the scheduled office hours, you can also request office hour by appointment if the scheduled office hours do not fit your schedule. Depending on general needs, the time of office hours may change during the semester to accommodate most students. You are expected to be prepared for the office hours with questions written down or marked in your notebook.
Classroom Etiquette	The following rules apply to minimize class disruptions. During remote start of the term, you are required to mute yourself upon connecting to Zoom session and stay muted when not talking, use "raise your hand" option in Zoom to wait to ask or answer a question, and use "Chat" option during designated times to submit a comment or a question. Computer cameras are not required to be "on" for any lecture session, however, they are highly recommended for group work. It is in your best interest to try to communicate as effectively and efficiently as possible with your instructor and classmates. Be aware that a log of communication is recorded for internal purposes of class monitoring. During in-person sessions, you are required to respect all students, the instructor, and adhere to University code of conduct. Inappropriate behavior and offensive speech/texting will not be tolerated and will be dealt according to the University of Pittsburgh Code of Conduct and the University Guidelines on Academic Integrity.
Computers & Tablets	It is your responsibility to have appropriate electronic device that allows you to connect to the class/office hours via Zoom, access course material via Canvas, and complete assignments on TopHat. Make sure you have a good connectivity and a quiet space that allows for uninterrupted work.
Grading	Please follow the course schedule available on Canvas that will list all due dates. There are no participation points, all points are from completed work! All grades are assigned based on the points earned on the exams and assessments (see below). There is no curve in this class. THERE ARE NO BONUS POINTS OR EXTRA CREDIT POINTS AVAILABLE! Final grades will be determined based on the percentage of points collected from assigned work as follows:

Assessment	Allocation
4 Midterm Exams	55%
Groups Assignments[(i)]	10%
TopHat Reviews[(i)]	7%
Research Paper [(ii)]	8%
Final Exam[(iii)]	20%

[(i)] There are no extra opportunities for missed assignments! You are expected to have a TopHat compatible, charged, and functional electronic device for electronic submissions. It is your responsibility to follow up on technical issues and have access to class e-material. *Do not procrastinate!* Internet instability at the last minute of the due date is not a valid excuse to miss an assignment.

(ii) As part of your basic training as a biologist, you will read and discuss primary literature associated with material covered in class. To demonstrate your skills of proper usage of scientific literature and critical evaluation of presented data and conclusions, you will write a report on a selected topic. Evaluation of this project will be based on the quality of the report and summary of supporting evidence from primary literature. Detailed guidelines will be posted on Canvas.
(iii) The final exam is cumulative. If you do better on the final exam then on one of the midterms, your (lowest) midterm score will be replaced by a score based on the final exam (not applicable to replace zero score for a missed unexcused midterm). You are not permitted to skip the final exam, even if you have an A+ in the course. If you miss the final and you do not provide a valid excuse, zero will be assigned and final grade will be determined using the zero score.

Final grade will be determined according to the grading scale as follows:

Final %	Grade	Final %	Grade
98-100	A+	72	C
92	A	70	C-
90	A-	67	D+
87	B+	62	D
82	B	60	D-
80	B-	≤59.9	F
77	C+		

Missed Exams:
There are no make-up exam quizzes, assignments, or extra credit opportunities in this course. If you can anticipate beforehand that you may not be able to meet a specific deadline, contact Dr. Swigonova immediately! Some cases may require individual attention, depending on the severity of the case. In general, if you missed a midterm and you do not have adequate excuse (see below), you will obtain 0 points for the exam. Missing a final will result in score 0 for the final. If you miss one of the midterm examinations due to an excused emergency absence, your midterm score will be calculated from your score obtained from the final examination. If you miss an examination due to an emergency (illness, serious injury or a death in your immediate family), you must submit, in writing, your request for an excused absence. Just informing the lecturer is not sufficient! Please use the following guidelines when preparing your request:

1. Your written request for an excused absence must indicate your name, the nature of the emergency and the date of the examination that you missed.
2. If you miss an exam due to a medical condition, you must include documentation (a signed letter from your physician)
3. If you miss an exam due to a death in your immediate family, your excuse must include a copy of the obituary and a signed letter from a family member who can verify your relationship with the diseased.
4. All supportive evidence MUST include a phone number for verification and must also reach Dr. Swigonova NO LATER THAN THREE BUSINESS DAYS after the exam.

No one will be excused from more than one examination!
Failure to comply with these guidelines will result in zero points recorded for the missed exam. If you miss more than one examination, you should discuss possible options available to you with your advisor or the CAS Dean's Office. Students who miss the final exam due to an emergency should pursue the G grade option as detailed below.
Special considerations: to allow for unforeseen challenges, flexibility has been built into the assessment as follows: (i) a final exam will be used to replace your lowest midterm (not applicable for unexcused missed exam); (ii) a drop of one lowest TopHat scores and (iii) a drop of lowest Group assignment score (only if proper excuse is submitted). Replacement of a score from a Midterm by performance from the final can be applied only once per term!

Regrade Request	You may request a regrade of any portion of an exam by submitting your request in writing and explaining why you think the grading was in error. This request must be submitted to the instructor within one week of the posted results. Please consult your textbook prior to submitting your request.
G grade	If you wish to petition for a G grade, you must submit a request for this change in writing and you must document your reason(s). You will be required to make arrangements for the specific tasks you must complete in order to remove the G grade. You will be expected to sign documentation describing the work that has to be completed and the due date. All required work must be completed by the specified date otherwise a zero will be assigned for the work and final grade will be determined using this score. Remember that G grades, according to CAS guidelines, are to be given only when students who have been attending a course and have been making regular progress are prevented by circumstances beyond their control from completing the course after it is too late to withdraw. If you miss the final exam, you may receive a G grade if the above conditions are met.
Academic Integrity	Cheating/plagiarism will not be tolerated. Students suspected of violating the University of Pittsburgh Policy on Academic Integrity, from the February 1974 Senate Committee on Tenure and Academic Freedom reported to the Senate Council, will be required to participate in the outlined procedural process as initiated by the instructor. A minimum sanction of a zero score for the quiz or exam will be imposed. View the complete policy at www.cfo.pitt.edu/policies/policy/02/02-03-02.html.
Copyright notice	Many of the course materials I provide is my intellectual property and others are protected by copyright. You are welcome to use all the given class material for your private use. Posting my lectures, notes, exams, review packets, answers, keys, etc. or other course material on ANY website without my express written permission is a violation of the academic integrity code. Any student violating the copyright and intellectual property will be charged with a breach of academic integrity. United States copyright law, 17 USC section 101, et seq., in addition to University policy and procedures, prohibit unauthorized duplication or retransmission of course materials. See Library of Congress Copyright Office and the University Copyright Policy.
Statement on classroom recording	To ensure free and open discussion of ideas, students may not record classroom lectures, discussions and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.
E-mail Communication Policy:	Each student is issued a University e-mail address (username@pitt.edu) upon admittance. This e-mail address may be used by the University for official communication with students. Students are expected to read e-mail sent to this account on a regular basis. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of the communications. The University provides an e-mail forwarding service that allows students to read their e-mail via other service providers (e.g., Hotmail, AOL, Yahoo). Students that choose to forward their e-mail from their pitt.edu address to another address do so at their own risk. If e-mail is lost as a result of forwarding, it does not absolve the student from responding to official communications sent to their University e-mail address. To forward e-mail sent to your University account, go to http://accounts.pitt.edu, log into your account, click on Edit Forwarding Addresses, and follow the instructions on the page. Be sure to log out of your account when you have finished. (For the full E-mail Communication Policy, go to www.bc.pitt.edu/policies/policy/09/09-10-01.html.)
Take Care of Yourself:	Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep, and taking time to relax. Despite what you might hear, using your time to take care of yourself will actually help you achieve your academic goals more than spending too much time studying. All of us benefit from support and guidance during times of struggle. There are many helpful resources available at Pitt. An important part of the college experience is learning how to ask for help. Take the time to learn about all that's available and take advantage of it. Ask for

	support sooner rather than later –this always helps. If you or anyone you know experiences any academic stress, difficult life events, or difficult feelings like anxiety or depression, we strongly encourage you to seek support. Consider reaching out to a friend, faculty or family member you trust for assistance connecting to the support that can help. The University Counseling Center is here for you: call 412-648-7930 and visit their website. If you or someone you know is feeling suicidal, call someone immediately, day or night: University Counseling Center (UCC): 412 648-7930, University Counseling Center Mental Health Crisis Response: 412-648-7930 x1, Resolve Crisis Network: 888-796-8226 (888-7-YOU-CAN). If the situation is life threatening, call the Police: On-campus: Pitt Police: 412-268-2121Off-campus: 911.

Clear communication is essential for a success. Do not hesitate to contact me any time by email to request a zoom meeting. I am here to assist you to be successful, but it is your responsibility to communicate clearly if you need help.

I am looking forward to a successful and productive term,

Dr. Swigonova

CLASS SCHEDULE:

Please note the dates and times of the exams to avoid any scheduling conflicts!

Lecture topics are subjects to revision as the term progresses, you will be notified of changes during class and communications via Canvas announcements. Please read the associated chapter before lecture to be prepared for class discussion. ***Exams*** are scheduled as indicated and their dates will NOT change. All exams are free response and paper-based. ***Group Assignments (Worksheets)*** will be completed by all members of a collaborative group (see Canvas) and submitted by the leader. The group leader is responsible for making sure all members of the group reviewed the assignment before submission.

Week		Date	Topic	Assigned reading*
Module: MOLECULAR BIOLOGY	1	1/11	**Welcome & administration. L1: DNA as a genetic material** • *Worksheet: A case study - Disputed maternity*	Ch. 13.1, 13.2
		1/13	**L2: Mechanism of DNA replication and its repair** • *Worksheet: DNA replication and synthesis*	Ch. 13.3, 13.4, 13.5
	2	1/18	**L3: The central dogma: From a gene to a protein** • *Worksheet: Metabolic pathways*	Ch. 14.1, 14.2,
		1/20	**L4: The process of transcription** • ***Workshop**: Meet Dr. Andrea Berman – "Ribosome biogenesis"*	Ch. 14.3, 14.4
	3	1/25	**L5: Translation and post-translational modification** • *Worksheet: Transcription & translation*	Ch. 14.5, 14.6
		1/27	**L6: Mutations and disease** • ***Workshop**: Cystic fibrosis.*	Ch. 15.1, 15.2
	4	2/01	**L7: Methods of molecular genetics** • *Worksheet: Methods of molecular genetics*	Ch. 15.3, 15.4, 15.5
		2/03	**MIDTERM 1** – covers material of lectures 1-6 and associated activities	*Good Luck!*
Module: GENOMICS	5	2/08	**L8: Gene expression in bacteria** • *Worksheet: Bacterial gene expression*	Ch. 16.1
		2/10	**L9: Gene expression in eukaryotes** • *Worksheet: Eukaryotic gene expression*	Ch. 16.2, 16.4, 16.5
	6	2/15	**L10: Genomics & prokaryotic genomes** • ***Workshop**: Meet Dr. Jeffrey Lawrence – "Codon bias"*	Ch. 17.1, 17.2
		2/17	**L11: Genomics of eukaryotes** • *Worksheet: Genomics*	Ch. 17.3, 17.4, 17.5
	7	2/22	**L12: Recombinant DNA** • *Worksheet: Biotechnology 1*	Ch. 18.1, 18.2, 18.3
		2/24	**L13: Molecular tools for DNA modification** • *Worksheet: Biotechnology 2*	Ch. 18.4, 18.5
Module: EVOLUTION	8	3/01	**MIDTERM 2** – covers material of lectures 7-13 and associated activities	*Good Luck!*
			L14: Evolutionary processes	Ch. 20.1, 20.2
		3/03	**L15: Evolution by natural selection** • *Worksheet: Evolutionary processes*	Ch. 20.3, 20.4, 20.5, 20.6
	9	3/8&10	*Spring Break – Reenergize!*	
	10	3/15	**L16: Phylogenetic characters and methods of tree reconstruction** • *Worksheet: Homology & homoplasy & parsimony*	Ch. 21.1, 21.2
		3/17	**L17: Applications of phylogenetic analyses** ***Workshop**: Insect phylogeny – "morphological & molecular markers"*	Ch. 21.3, 21.4
	11	3/22	**L18: Mechanisms of speciation** • *Worksheet: Speciation*	Ch. 22.1-22.5
		3/24	**L19: Evolution and human health** • ***Workshop**: Influenza Modeling*	Handout
Module: ECOLOGY	12	3/29	**MIDTERM 3** – covers material of lectures 14-19 and associated activities	*Good Luck!*
			L20: Study of animal behavior	Ch. 52.1, 52.2, 52.3
		3/31	**L21: Types of animal behavior** • *Case study: Behavior of long-tailed manakins (Chiroxiphia linearis)*	Ch. 52.4, 52.5, 52.6
	13	4/05	**L22: Population ecology – models of population growth** • *Worksheet: Population ecology – quantitative approach*	Ch. 54.1, 54.2
		4/07	**L23: Life tables, survivorships, and life history** • ***Workshop**: Survivorship in primates – "Practice with data"*	Ch. 54.3, 54.4
	14	4/12	**L24: Species interactions** • ***Workshop:** Meet Dr. John Boyle – "Host-parasite interaction"*	Ch. 55
		4/14	**L25: Community ecology** • ***Workshop**: Meet Dr. Cori Richards-Zawacki – "The predation experiment"*	Ch. 56
	15	4/19	**MIDTERM 4 –** covers material of lectures and recitations of week 20-25	*Good Luck!*
		4/21	*Review for final; Research Projects are due by the end of class (11:50 am, submit on Canvas)*	
	16		**CUMULATIVE FINAL: TBA**	*Good Luck!*