BIOL 110-02 Principles of Biology I
Fall 2020
"Lectures" Online / Asynchronous
Labs T Th @ 9:00 AM – 11:50 AM in CBB 126, 1 hour cohorts (TBD)

Instructor:	Dr. Daniel L. Graf	Course web site:	Canvas site at https://www.uwsp.edu/canvas/
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General Course Description. "Fundamental principles of biology, including chemistry of life, cell biology, genetics, and mechanisms of evolution. Principles of cell and molecular biology, from macromolecules to organisms, integrated through an evolutionary framework. Development of scientific skills to form hypotheses, analyze and interpret data, evaluate biological literature, and relate biology to society." This course is the first of a two-course introductory sequence (with BIOL 111).

Objectives. The objectives of BIOL 110 are 1) to examine general biological principles, and 2) to provide the foundation necessary for success in future coursework in the biological sciences.

Learning Outcomes. Upon completion of BIOL 110, students will be able to:

1. Apply knowledge of macromolecules and cellular functions to compare basic principles of inheritance and evolutionary change at the molecular, cellular, and organismal levels.
2. Apply the scientific method and techniques to answering biological questions, using formal practices of observation, experimentation, hypothesis testing, quantitative analysis and mathematical reasoning.
3. Evaluate, synthesize, and communicate biological information from the scientific literature.
4. Recognize the relevance of cell and molecular principles, genetics, and evolution, to social decision-making, their lives, and society.

Required Materials. *Campbell Biology*, 11th edition (2017), by Urry, Cain, Wasserman, Minorsky & Reece. Pearson, New York (ISBN 978-0134093413). This book is available for rent at the bookstore.

Access to a computer connected to the Internet. You will need to be able to access Canvas through a browser. On campus, computers are available to use in Albertson LRC and multiple computer labs. The following URL has a handy directory of campus computer labs:

https://www.uwsp.edu/infotech/Pages/ComputerLabs/All-Labs.aspx

The lab manual will be distributed electronically.

COURSE ORGANIZATION. The organizing plan for this semester will be to:

1. try, as much as is reasonable, possible, and helpful to support the structure of the typical face-to-face version of the course, while
2. maintaining as much flexibility as possible.

All due dates for assignments, quizzes, and exams will provide a wide window of time for completion, and there is nothing for this course that will require you to do something at a specific, scheduled time. However, we will be expecting to keep to a schedule to offer the structure and pacing of an in-person course. This will include honoring all holidays.

Lectures, Labs, Quizzes, and Exams. There will be a total of 436 points to earn this semester through quizzes, labs assignments, discussions, 3 midterm exams, and a comprehensive final exam.

BIOL 110	**points**
Midterm Exam 1	50
Midterm Exam 2	50
Midterm Exam 3	50
Lecture Quizzes	36
Weekly Quizzes	60
Group Discussions	20
Lab Assignments	60
Lab Report	10
Final Exam	100
TOTAL	**436**

Lecture Quizzes. — The course schedule is attached. Overall, the plan will be for the equivalent of 3 lectures (with reading assignments) per week, arranged according to a typical Monday-Wednesday-Friday schedule. Associated with each lecture will be a 1-point quiz (36 total points; 8% of your total grade). To receive credit, each lecture quiz must be completed in Canvas before the next one is assigned (e.g., a Monday quiz should be completed before Wednesday). All lecture quizzes will have a 5-minute time limit.

Weekly Quizzes. — Each Thursday, there will be a 5-point weekly quiz covering the three previous lectures (and associated readings). Those weekly quizzes will be due by midnight on Friday of each week. Your lowest quiz score of the semester will be dropped (60 points; 14%). All weekly quizzes will have a 15-minute time limit.

Group Discussions. — We will occasionally suspend our regular online lecture schedule to discuss articles or book chapters that supplement textbook material. Readings and associated assignments will be posted on the Canvas website. Your participation will be assessed based on a 5-point group exercise (20 total points, 5%). You are encouraged (but not required) to safely collaborate with your classmates on these discussions, and Prof. Graf will help coordinate the arrangement of group work.

Lab Assignments. — Lab assignments will be completed online and focus on analysis of data from previous semesters because we can't offer a 3-hour lab session to gather our own data. Lab sessions will be divided into 3, 1-hour meetings of 8 students. Because all lab work will be completed online, the in-person component is optional. Each lab assignment is worth 5 points, and the lowest lab score of the semester will be dropped (60 points; 14%). A 10-point lab report is due at the end of semester (2%).

Midterm Exams. — Every 4-5 weeks (10 lectures), we will have a 50-point exam that covers the material since the previous lecture. All midterm exams will take place on Mondays (5 October, 2 November, and 30 November; 150 points; 34%), and those exams will be available to take for 24-hours (7 AM Monday until 7 AM Tuesday). All three midterm exams will have a 1-hour time limit.

Final Exam. — There will be a 100-point (23%) comprehensive final exam during the regularly scheduled final exam week. We do not have an assigned final exam time because ours is an asynchronous course (i.e., no scheduled meeting times), but we will determine our final exam session early in the semester. The final exam will have a 2-hour time limit, offered during a single 24-hour period.

Grades will be based upon the following percentages of the course total:

		100-93%	A	92-89%	A-
88-87%	B+	86-83%	B	82-79%	B-
78-77%	C+	76-73%	C	72-69%	C-
68-67%	D+	66-59%	D	<59%	F

REQUESTS FOR EXTRA POINTS WILL NOT BE HONORED.

Laboratory. Because the lab sessions will be in-person, everyone in the room must wear a cloth face-covering and remain socially-distanced.

- At all UW-Stevens Point campus locations, the wearing of face coverings is mandatory in all buildings, including classrooms, laboratories, studios, and other instructional spaces. Any student with a condition that impacts their use of a face covering should contact the Disability and Assistive Technology Center to discuss accommodations in classes. **Please note that unless everyone is wearing a face covering, in-person classes cannot take place.** This is university policy and not up to the discretion of individual instructors. Failure to adhere to this requirement could result in formal withdrawal from the course.
- Please monitor your own health each day using this screening tool. If you are not feeling well or believe you have been exposed to COVID-19, do not come to class; email your instructor and contact Student Health Service (715-346-4646).
    - As with any type of absence, students are expected to communicate their need to be absent and complete the course requirements as outlined in the syllabus.
- Maintain a minimum of 6 feet of physical distance from others whenever possible.
- Do not congregate in groups before or after class; stagger your arrival and departure from the classroom, lab, or meeting room.
- Wash your hands or use appropriate hand sanitizer regularly and avoid touching your face.
- Please maintain these same healthy practices outside the classroom.

More information is available at the following URLs:
https://www.uwsp.edu/coronavirus/Documents/FaceCoveringInstructions20.pdf
https://www.uwsp.edu/C19DailyScreening

Exam and Quiz Rules. The following rules apply to lecture quizzes, weekly quizzes, and exams:

1. All quizzes and exams will be "open-note," meaning you may use your reading and lecture notes to help you answer the questions. You may not use your textbook, the Internet, or other sources while you are taking a quiz or an exam. If you want access to the information in those sources, then commit them to your notebook ahead of time. All that being said, we will be completely on the honor system. No one will be watching you work.
2. You may also use a calculator and scratch paper during quizzes and exams.
3. All quizzes and exams will have a time limit. If you need to look up every answer in your notes, you may not finish, and you will forfeit the points.
4. Using other sources besides your notes will be regarded as academic misconduct. According to our UW System rules, to take away even a single point for such a violation requires the involvement of the Dean of Students.
5. Collaborating on a quiz or exam with other students in the class is also academic misconduct. People will be taking quizzes and exams at different times. You should not discuss them or share information with anyone until the due date has passed.

Prof. Graf has been around the block a few times, and he has a lot of experience distinguishing inadvertent or naive mistakes from intentional plagiarism. As long as you don't make it an issue, it won't be an issue. More information about the regulations associated with academic misconduct can be found at the following URL:

https://www.uwsp.edu/dos/Pages/stu-academic.aspx

Online Attendance and Making-Up Missing Work. Our online format offers a lot of flexibility, but this course is designed for enrolled students making progress toward their degrees. The schedule of lectures, quizzes, and exams is intended to keep you on-track.

However, there are reasons good reasons for not being able participate within the scheduled timeframe: too sick operate a computer, power outage, religious observances, and others. If you require an accommodation for such a situation, you should contact Prof. Graf ahead of time to discuss alternative arrangements.

Classroom / Zoom Conduct. Student and instructor behavior should promote an environment favorable to both teaching and learning. Students that choose to disrespect their classmates and their instructor by disrupting Zoom sessions or labs will be asked to leave.

Disabilities. Students with disabilities are welcomed and encouraged in this class. Students with disabilities should contact the Disability and Assistive Technology Center during the first two weeks of the semester if they wish to request specific accommodations.

https://www.uwsp.edu/datc/Pages/default.aspx

week	date	day	#	Lecture	Chapter (pages)	Lab
1			0	Welcome to BIOL 110!		NO LAB
	2-Sep	W	1	Evolution, the Themes of Biology, & Scientific Inquiry	1 (2–24)	
				CHEMISTRY OF LIFE		
	4-Sep	F	2	The Chemical Context of Life	2 (28–41)	
2	7-Sep	M		LABOR DAY — NO CLASS		Scientific Investigation
	9-Sep	W	3	The Importance of Water & Carbon	3-4 (44–64)	
	11-Sep	F	4	Large Biological Molecules: Carbohydrates & Lipids	5.1-3 (66–75)	
3	14-Sep	M	5	Large Biological Molecules: Proteins & Nucleic Acids ADD/DROP DEADLINE	5.4-6 (75–87)	Quantitative Analyses
				CELLS		
	16-Sep	W	6	Tour of the Cell: Nucleus, Ribosomes & Plastids	6.1-4 (93–108)	
	18-Sep	F	7	Tour of the Cell: ER, Golgi & Cytoskeleton	6.5-8 (109–123)	
4	21-Sep	M	8	Membrane Structure & Function	7 (126–141)	Diffusion & Osmosis
	23-Sep	W	9	Introduction to Metabolism	8 (164–184)	
	25-Sep	F	*D1*	*Discussion 1*	TBD	
5	28-Sep	M	10	Cellular Respiration & Fermentation	9 (164–184)	Enzymatic Activity
	30-Sep	W	11	Photosynthesis I	10.1-3 (187–202)	
	2-Oct	F	12	Photosynthesis II	10.4-5 (203–207)	
6	5-Oct	M	**E1**	**EXAM 1 (Lectures 1-10, Discussion 1)**		Alcoholic Fermentation
	7-Oct	W	13	Cell Communication & Cancer	11 (212–231)	
	9-Oct	F	14	The Cell Cycle	12 (234–249)	
				GENETICS		
7	12-Oct	M	15	Meiosis & Sexual Life Cycles	13 (254–267)	Photosynthesis
	14-Oct	W	16	Mendel & the Gene Idea I	14.1-2 (269–278)	
	16-Oct	F	17	Mendel & the Gene Idea II	14.3-4 (278–290)	
8	19-Oct	M	18	The Chromosomal Basis of Inheritance	15 (294–311)	Nuclear Division
	21-Oct	W	19	The Molecular Basis of Inheritance I	16.1 (304–319)	
	23-Oct	F	*D2*	*Discussion 2*	TBD	
9	26-Oct	M	20	The Molecular Basis of Inheritance II	16.2-3 (320–332)	Mendelian Genetics
	28-Oct	W	21	Gene Expression: From Gene to Protein I	17.1-3 (335–347)	
	30-Oct	F	22	Gene Expression: From Gene to Protein II	17.4-5 (347–360)	
10	2-Nov	M	**E2**	**EXAM 2 (Lectures 11-20, Discussion 2)**		Central Dogma
	4-Nov	W	23	Regulation of Gene Expression I	18.1 (363–367)	
	6-Nov	F	24	Regulation of Gene Expression II WITHDRAWL DEADLINE	18.2-5 (368–392)	
11	9-Nov	M	25	Viruses	19 (396–411)	Coronavirus Data Analysis
	11-Nov	W	26	DNA Tools & Biotechnology I	20.1-3 (413–431)	
	13-Nov	F	*D3*	*Discussion 3*	TBD	
12	16-Nov	M	27	DNA Tools & Biotechnology II	20.4 (431–437)	Biotechnology & GMOs
	18-Nov	W	28	Genomes & their Evolution I	21.1-3 (440–448)	
	20-Nov	F	29	Genomes & their Evolution II	21.4-6 (448–462)	
				MECHANISMS OF EVOLUTION		
13	23-Nov	M	30	Theory of Special Creation	22.1 (466–469)	NO LAB
	25-Nov	W	31	Theory of Natural Selection	22.2-3 (469–482)	
	27-Nov	F		THANKSGIVING — NO CLASS		
14	30-Nov	M	**E3**	**EXAM 3 (Lectures 21-30, Discussion 3)**		Regulation of Gene Expression
	2-Dec	W	32	Evolution of Populations	23 (494–502)	
	4-Dec	F	*D4*	*Discussion 4*	TBD	
15	7-Dec	M	33	Origin of Species	24 (504–521)	Modeling Evolution
	9-Dec	W	34	History of Life	25 (523–547)	
	11-Dec	F	35	Synthesis & Review		**Lab Report Due!**
16	14-Dec to 18-Dec			FINALS WEEK		