Spring 2-1-2022

BIOB 101N.01: Discover Biology

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Biology 101: *Discover Biology* syllabus Spring 2022

Instructor Greg Peters
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Office Hours M & W 9:30-11:30 in office 407 or by appointment

Class meetings
Discover Biology meets twice weekly for lecture discussions and includes an online lab assignment to be completed during most weeks. All students must be enrolled in the lecture course *and* in the online lab section.

Resources
Access the course supplement and lab activities through Moodle using your UM netID. If you are unfamiliar with Moodle, please read the UMOnline Moodle tutorial soon.

All readings and activities are available through our class Moodle page. You can purchase a bound copy of the class readings through the UM Bookstore if you prefer to read in print. Do NOT purchase a lab manual for this class; our labs are all offered exclusively through Moodle.

Course Content
We will explore topics such as the chemical and cellular bases of life, genetics, evolution, biodiversity, and human impacts on the living world. Important course objectives include developing a deeper understanding of the fascinating features of the living world and helping all of us make well-informed decisions about issues with a biological component. Specific learning objectives include:

- recognizing key features of cellular biology
- understanding the processes and importance of energy transformations in life
- understanding basic genetics, especially as this relates to human biology
- appreciating our current understanding of classification and diversity of life
- highlighting the important influences of humans on living systems

For general education science requirements: upon completion of this course, you will be able to:

- understand the general principles associated with the discipline(s) studied
- understand the methodology and activities scientists use to gather, validate and interpret data related to natural processes
- detect patterns, draw conclusions, develop conjectures and hypotheses, and test them by appropriate means and experiments
- understand how scientific laws and theories are verified by quantitative measurement, scientific observation, and logical/critical reasoning
- understand the means by which analytic uncertainty is quantified and expressed in the natural sciences
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Recommendations
Keep up with readings to get the most out of classroom meetings. You will submit assignments and take exams on Moodle. Contact the staff at UMonline (umonline-help@umontana.edu or 406-243-4999) with technical questions.

Committing to **regular attendance and on-time completion of work** is essential for success in this class. It is equally important to avoid the classroom if you are ill, especially if you are experiencing any symptoms of COVID. To balance these goals:

- Monday & Wednesday classes will have lecture recordings and slides on Moodle
- In-class worksheets can be submitted on your own time in case of a missed class
- Exams will be available on Moodle from Wednesday morning to Sunday night

Assessment	points	grade	
1) Exams (highest 5 of 6 @ 50 pts ea.)	250	90-100%	= A- to A
2) In-class activities (highest 20 of 21 @ 2 pts ea.)	40	80-90%	= B- to B+
3) Lab reports (10 @ 20 pts ea.)	200	70-80 %	= C- to C+
4) Course reflections (online discussion)	10	60-70%	= D- to D+
TOTAL:	500	< 60%	= F

Course Policies
Your lowest exam score will be dropped from your final grade; therefore, there will be **no late or make-up exams offered** unless accompanied by signed documentation of extreme circumstances. In other words, a missed exam will count as your dropped exam. The final exam is cumulative. Students are expected to work alone and without outside resources.

Late lab reports will lose 10% per week, beginning immediately after the due date.

All features of the UM student conduct code will be followed in this course. Per university policy, please use only your university account for email communication.

Students with disabilities will receive appropriate **accommodations**. Please contact your professor and provide a letter from your ODE coordinator so that accommodations can be made.

After the 45th day of the semester, drops, adds, or changes of grade options are not automatically approved; they may be requested by petition, and the petition must be accompanied by documentation of extreme circumstances.

Missoula College **values diversity** of students, faculty, and staff as an essential strength that contributes to our shared educational mission. Students of all backgrounds and perspectives are recognized and respected in this class. Please notify your instructor if components of this course present barriers to your inclusion. Contact Dr. Salena Beaumont Hill in the Office of Inclusive Excellence for Student Success for support for BIPOC and LGBTQ+ students and groups. For counseling or advocacy related to discrimination and other concerns, please visit SARC.

BIOB101N: Discover Biology Class Schedule

Date	Topic	Text chapters	Assignments/Exams
Unit One: Chemical & Cellular Basis of Life			
1/17	*No class: Martin Luther King Jr Day*		
1/19	Course Introduction		Lab report 1 due 1/23
1/24	Biology; Science as process	1 & 2	
1/26	Chemical basis of life	3 & 4	Lab report 2 due 1/30
1/31	Molecules of life	5 & 6	
2/2	A tour of the cell	7 & 8	**Exam 1 closes 2/6**
Unit Two: Cells Function & Energy Transformations			
2/7	Cell functioning	9 & 10	
2/9	Cellular respiration	11 & 12	Lab report 3 due 2/13
2/14	Photosynthesis	13 & 14	
2/16	Cell division & Cancer	15 & 16	Lab report 4 due 2/20
2/21	*No class: Presidents' Day*		
2/23	Unit 2 review		**Exam 2 closes 2/27**
Unit Three: Genetics & Evolution			
2/28	Intro to genetics	17 & 18	
3/2	DNA function	19 & 20	Lab report 5 due 3/6
3/7	Genetic engineering	21 & 22	
3/9	Evolution	23 & 24	Lab report 6 due 3/13
3/14	Mechanisms of evolution	25 & 26	
3/16	Unit 3 review		**Exam 3 closes 3/20**
3/21 - 3/25	***Spring Break***		
Unit Four: Classification & Diversity Life			
3/28	*No class - course progress discussion*		
3/30	Classification of life	27 & 28	Lab report 7 due 4/3
4/4	Prokaryotes and Protists	29 & 30	
4/6	Plants and Fungi	31 & 32	Lab report 8 due 4/10
4/11	Animals	33 & 34	
4/13	Unit 4 review		**Exam 4 closes 4/17**
Unit Five: Ecology & Human Influence on Life			
4/18	Ecology & species interactions	35 & 36	
4/20	Population Biology	37 & 38	Lab report 9 due 4/24
4/25	Human impacts and climate	39 & 40	
4/27	Biomes	41 & 42	Lab report 10 due 5/1
5/2	Energy flow in life	43	
5/4	Unit 5 review		**Exam 5 closes 5/8**
5/11	Course conclusion Wednesday		**Exam 6 closes 5/11** Course reflections due

Class Responsibilities
These instructions are also available in the "Assignment Instructions" topic on our Moodle page.

Weekly readings
Reading assignments present much of the content on unit exams, with color images in the ebook on Moodle and in black-and-white in the printed textbook. Keep up with weekly readings to get the most out of each class meeting.

Class meetings
We will explore Biology topics during Monday & Wednesday class meetings with instructor presentations and responses to questions. Copies of slides and recorded lectures from a remote section of this class will be available on Moodle.

Lab Activities
The online lab activities are an essential part of this class. Labs provide an opportunity for self-directed investigation to complement class content. You will be exploring biology related to weekly topics from a different perspective. Each unit includes two labs. Your first lab report is due by the end of the first week and the second lab report is due before the end of the second week of each unit. Expect labs to take approximately 2 hours to complete; consider working through lab activities well before their deadlines to leave time for the unexpected. Feel free to work with others on all lab activities, but turn in your own report in your own words.

Download the lab activity file from Moodle, follow the directions, and write your lab report as simply a list of your responses to the embedded questions, with a short statement of personal reflections on the lab experience at the end. Labs are graded based upon submission of accurate answers in your own words and on demonstrated effort.

To submit assignments

1) Save your work in .doc format
2) Open the appropriate assignment link on Moodle
3) Upload your assignment by clicking the "add submission" button, then:
    a) click the left button directly beneath the "file submissions" header, click "choose file," select the file to upload, click "upload this file," and click "save changes."

    OR

    b) drag and drop your file into the rectangular space beneath the "file submissions" header and then click "save changes."

*Remember that a late assignment brings a late penalty.

In-class worksheets
Each class will begin with a low-pressure worksheet exploring fun facts about biology and end with some practice questions relevant to the day's new content. For full credit, simply arrive on time, complete the worksheet as guided, and hand it in at the end of class. Credit can be earned for a missed worksheet by completing the missed practice questions and submitting them in person or through email. Se Moodle for copies of worksheet practice questions.

Exams
Exams are offered through Moodle and close at 11:55pm on the last Sunday night of each unit. You can take the exam at any time starting Wednesday of the third week of the unit, but it must be completed in a one hour sitting; it cannot be "paused" and restarted. You may use any resource to assist you, but with a time limit is essential to be prepared. You are encouraged to start exams well before the end of the last day. Make sure to leave time for the unexpected.

Exams 1-5 cover content from their unit only. Exam 6, offered during finals week, revisits core content from the semester. Specific content from labs is NOT on exams, but completing labs before the exam will certainly help. Your lowest exam score will be dropped from your final grade for any reason, so there will be no makeup exams offered unless accompanied by documentation of extreme circumstances spanning the period the exam is open.

When you are ready, open the exam on Moodle and follow the prompts. Make sure to press all the "submit" and "finish" buttons at the end. Please contact your instructor if you have concerns about taking a Moodle exam.

Course Reflections
Please share some reflections on the course through a short online discussion forum at the end of the semester. Specific guidelines are presented in the forum. Evaluation will be based on active participation, not the nature of your responses. To participate, click on the “Course Reflections” forum when it is available in the finals week topic on Moodle. Review the prompts, press “reply,” add your response, then press “submit.”

COVID precautions
This course will follow all UM COVID-19 guidelines, with the understanding that these may change in response to changing conditions and new information. All students are strongly encouraged to complete their full, free vaccination and visit the Curry health Center for free testing and guidance. Look over the CDC guidelines for appropriate precautions. Please contact your instructor and do not attend class if you are experiences symptoms of COVID-19.