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Fall 9-1-2021

BIOB 101N.00: Discover Biology

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Green, Andrea Theresa, "BIOB 101N.00: Discover Biology" (2021). *University of Montana Course Syllabi*. 12236.

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DISCOVER BIOLOGY (BIOB 101)

Fall Semester 2021

Professor: Annie Green, PhD

Office: Health Science Bldg 210

Email Address: annie.green@mso.umt.edu

Office hours: Tues. and Thurs. 11am to 12pm or by appointment (email to schedule).

Online meeting link: <https://umontana.zoom.us/my/biology.professor>

Course hours and location: Lecture: Monday and Wednesday 11-12pm in NULH

Lab sections: (1) Mon 12-2pm; (2) Mon 3-5pm; (3) Wed 12-2pm; (4) Wed 3-5 pm

(5) Tues 9-11am; (6) Tues 12-2pm; (8) Thurs 12-2pm; (9) Thurs 3-5pm in NS 202.

Description

Welcome to the world of biology! Biology is a fascinating subject. In BIOB 101, *Discover Biology*, we will explore the natural world by examining the organization and complexity of living organisms and the systems in which they live. This course is a one semester course on the fundamental principles and concepts forming the foundations of the science of biology. In this course we will elucidate the central questions of biology such as the relationship between form and function, acquisition and use of energy, and the continuity between generations. Since this is an introductory course, in depth discussions of any one topic will not be possible, but the course will provide a general overview of many of the cornerstones of biology.

Learning Outcomes

At the end of the course, students will be able to:

1. Use vocabulary needed to discuss biological topics
2. Apply the scientific method to experimental investigations
3. Distinguish the important molecules of life
4. Exhibit an understanding of the structure and function of cells.
5. Contrast basic metabolic processes and assess how energy flows from organism to organism
6. Comprehend the basic principles of cell reproduction and heredity
7. Identify, describe, and explain anatomical structures and the physiological function of the major body systems in a human.
8. Describe and apply the basis of organism classification systems.
9. Demonstrate an understanding evolutionary process and explain why evolution is a unifying theory in biology.
10. Be equipped to apply these principles to problems and issues of everyday life and on the way to becoming scientifically literate citizens.

This course also addresses the following Natural Science general education goals:

1. Understand the general principles associated with the discipline(s) studied
2. Understand the methodology and activities scientists use to gather, validate and interpret data related to natural processes.
3. Detect patterns, draw conclusions, develop conjectures and hypotheses, and test them by appropriate means and experiments.
4. Understand how scientific laws and theories are verified by quantitative measurement, scientific observation, and logical/critical reasoning
5. Understand how analytic uncertainty is quantified and expressed in the natural sciences.

COURSEWORK

- ***Lectures and Labs***

I have divided the course into 10 units. For each unit, I will present 2-3 lectures during our scheduled lecture meeting time on Mondays and Wednesdays. Once a week you will attend a laboratory section with exercises to supplement your learning. Your lab TA will provide you with further information on requirements in lab.

- ***Recommended Materials***

We will be using the free online text book in Biology available through [OpenStax](#). I have provided the OpenStax chapters that correspond with our lecture materials on the syllabus. We will be using both [Moodle](#) and [Zoom](#) for course content delivery. If you desire more learning management options, please contact for registration information for LRNR learning platform.

- ***Problem sets and Exams***

There are 23 problem sets in this course corresponding to each lecture. These problem sets will require application of information from lectures and further insight exercises in new contexts related to the material. The problem sets will be on Moodle. You have 2 attempts at each problem set to get the correct answer. There will be five exams in total for this course. The lowest exam grade will be dropped. Study guides will help you study for each exam. Each exam will consist of multiple-choice, true/false, short answer, and matching questions. Each unit exam will consist of approximately 35-50 questions. You will have 60 minutes to complete an exam.

Makeup exams are possible if you have a serious personal emergency. You will receive a zero for a missed, unexcused exam. Only students presenting verifiable medical or university excuses to Dr. Green at least 24 hours before the regularly scheduled exam will be eligible for a make-up exam. Students with disabilities and applicable testing accommodations should contact Dr. Green to ensure appropriate accommodations are available.

- ***Further Insight Exercises***

To perform well on the problem sets/quizzes, and exams, one must use problem-solving to tackle a biological concept. Many course units will include further insight videos or exercises. Further insights give you an opportunity to work through a biology problem step-by-step or hear a more detailed explanation of a concept taught in the lecture or lab. These exercises are designed to help you develop your scientific problem-solving skills. I strongly recommend reviewing these videos/exercises.

- ***Participation***

Discover Biology is a cumulative course, so that your success in grasping the material presented one week will depend on your understanding of material presented in previous weeks. It is essential for you to keep up with the readings and assignments. If you fall behind, it will be difficult to catch up. If you find yourself in trouble, please advise me as EARLY as possible. I will be better able to help you if you talk with me as problems arise; I will be less sympathetic right before an exam is due or near the end of the semester. If needed I am available to meet via online chat or in my office on the university campus. Please email me to schedule an appointment.

BIOB 101 will emphasize active learning experiences both in the lecture hall and laboratory. You are required to attend two one-hour lectures per week and one two-hour laboratory. Participation in both activities is vital to your success in the course. You cannot pass this class if you do not attend lab. Lecture participation expectations include making substantive oral contributions during class discussions, small group activities,

exam preparations, and participation logs. Learning is not a passive activity in BIOB 101 (and in all your coursework!) you need to take an active role. I am here to facilitate your learning, but I ask that you:

- ✓ Actively participate in the course
- ✓ Work cooperatively to answer questions from colleagues
- ✓ Take responsibility for being prepared before completing coursework.
- ✓ Reflect objectively on your own progress and understanding

- ***Taking Notes and Keeping a Lab Notebook***

I strongly recommend that you take notes while watching videos, reviewing lecture materials, and when completing further insights exercises. Additionally, I recommend keep a lab notebook with details about what you did, how you did it, what you found, and your thoughts. [Research shows that people perform better on conceptual tests when drawing and writing notes rather than typing the notes.](#) If you have never taken college-level notes before or want some advice, check out this [video describing five note-taking techniques](#) aimed at college students. One of these techniques may work for you.

- ***Forums and “Office Hours”***

Office hours are held in my office (HS210) or via Zoom by appointment. Furthermore, I maintain an open-door policy with all of my students. If my door is open, please feel free to come on by to chat. Additionally, there is a discussion forum at the top of the Moodle page, which students can use to post comments/questions about course material. I will read the posts and answer them if appropriate. I aim to provide answers within 24 hours.

- ***Grading***

Grades in this course will be assigned in the standard +/- grading system. Your grade will be based on the following:

5 Lecture Exams (at 75 pts each) [lowest grade dropped]	300
23 Problem sets (at 5 pts each) [lowest three dropped]	100
Lecture/ Discussion Participation	100
Laboratory Participation	500
Total	1000pts

COURSE POLICIES

- ***Make-up examinations***

Make-up exams are possible if you have a serious personal emergency. You will receive a zero for a missed, unexcused exam. Only students presenting verifiable medical or university excuses to Dr. Green before the regularly scheduled exam will be eligible for a make-up exam.

There will be a penalty for late submission of work. **10%** will be subtracted each day for late assignments. An assignment is late if turned in after the hard deadline. I will consider any **documented** extenuating circumstances. But try your utmost to **NOT TO FALL BEHIND!**

- ***Technical Requirements***

Students are expected to be familiar with computers, the Internet, Moodle, and Zoom. Students are responsible for their own software and computer equipment maintenance and setup as recommended by the University of Montana (<http://www.umt.edu/it/default.php>). Students must have software capable of downloading and

reading PDF files. If you are having any technical issues please contact the IT department at <http://www.umt.edu/it/support/default.php>.

IMPORTANT - it is imperative that you understand how to operate Moodle. I have posted a Moodle tutorial to help anyone who is unfamiliar with the platform. This important orientation will require less than 1 hour of your time. You will earn a Moodle certificate as proof of your mastery.

- ***Adds, drops, and changes of grading***

University policies on drops, adds, changes of grade option, or change to audit status will be strictly enforced. These policies are described in the 2021-22 UM course catalogue, <http://catalog.umt.edu/>. The last day to drop fall courses without the Dean's signature is 5:00PM on Monday, November 1st. Thereafter, a DROP may be requested by petition, but the petition must be accompanied by documentation of extenuating circumstances.

- ***Cheating and Plagiarism***

Although I encourage students to work collaboratively with others, ***the work you hand in must be your own***. A good rule of thumb is that you can work together up to the point of committing words to paper (or word processor). After that, the words you put down should be your own. We remind you of the official University policy on plagiarism: "Plagiarism is the representing of another's work as one's own. It is a particularly intolerable offense in the academic community and is strictly forbidden. Students who plagiarize may fail the course and may be remanded to Academic Court for possible suspension or expulsion ([See Student Conduct Code section of this catalog](#)). Students must always be very careful to acknowledge any kind of borrowing that is included in their work. This means not only borrowed wording but also ideas. Acknowledgment of whatever is not one's own original work is the proper and honest use of sources. Failure to acknowledge whatever is not one's own original work is plagiarism." (Quotation from the University of Montana Catalog). If you have any questions about the line between collaboration and plagiarism, see your professor before you hand in material. Assignments from two or more students that have significant overlap will be regarded as reflecting a violation of the expectation that students turn in independent work. All the students involved will be given no points for that material, and the violation will be dealt with according to the Student Conduct Code. Penalties for plagiarism and cheating can be as severe as suspension or expulsion from the university.

- ***Students with Disabilities***

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and the Office for Disability Equity (ODE). If you anticipate or experience barriers based on disability, please contact the ODE at: (406) 243-2243, ode@umontana.edu, or visit www.umt.edu/disability for more information. Retroactive accommodation requests will not be honored, so please, do not delay. As your instructor, I will work with you and the ODE to implement an effective accommodation, and you are welcome to contact me privately if you wish. If you would like to request reasonable accommodations, you are advised to provide your ODE verification letter to Dr. Green the first week of class so appropriate arrangements can be made. If you decide after the semester begins to disclose your disability and request accommodations, you should provide documentation, if possible, at least 10 days prior to the upcoming assessment so I may prepare appropriately. It is the responsibility of students to make sure they understand the types of modifications available to them prior to assessments.

- ***Classroom Behavior***

You are expected to attend lecture in person. In my experience, students who come to lecture regularly do better on exams and quizzes than those who do not! When you come to lecture or lab, conduct yourself as a responsible, courteous adult. Students who are being disruptive by talking, sending or receiving messages, reading the newspaper, eating, or playing computer games/videos will be asked to leave. Such behaviors affect

the learning of other students and will not be tolerated. Re-admittance to class is at the discretion of the instructor. The second such offense will result in dismissal from BIOB101 with a grade of F. During the pandemic, you are expected to follow best practices to keep our community safe. This includes wearing a mask, social distancing, and hand washing.

- ***A Note on Email and Spam Filters***

All email communication for the course will be sent to your official university email, and not to other email providers. If you don't normally check your university email you will miss important emails. You can have your university email forward messages to other email addresses (e.g., gmail, yahoo, etc). When I email the whole class the message goes to many email addresses, and some email providers will block this as spam. You will want to check the settings of your spam filters to allow such messages.