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BIOB 101N.50: Discover Biology

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DISCOVER BIOLOGY ONLINE (BIOB 101)
Spring Semester 2019

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Office hours: by appointment. Please email me to schedule
Course hours and location: This course is taught online via Moodle (https://moodle.umt.edu)

Overview

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.

Discover Biology is a cumulative course, so that your success in grasping the material presented one week will depend on your having mastered 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.

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

I have divided the course into 10 units. Each unit is broken into 3-5 modules. You can complete the work in whatever amount of time that works for you. I have provided due dates in to keep you on track throughout the semester. The hard deadline is the week of exam. ***All assignments corresponding to the units covered in the exam are due by Friday at 11pm the week of the exam.*** Each unit will include lectures, a lab exercise, quizzes and further insight exercises. To successfully complete the course, I recommend completing the recommended reading, lectures, labs, problem sets, and further insight assignments. I believe learning takes place through

problem-solving. The course will include three unit exams and one cumulative final exam. The lowest off the unit exam grades will be dropped.

Learning Outcomes

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

1. Use vocabulary needed to discuss biological topics
2. Understand and summarize the scientific method
3. Demonstrate a fundamental understanding of the important molecules of life
4. Exhibit a thorough knowledge of the structure and function of cells.
5. Understand basic metabolic processes and how energy flows from organism to organism
6. Understand the basic principles cell reproduction and heredity
7. Understand, identify, and describe anatomical structures and the physiological function of the body systems
8. Understand the basis of organism classification systems.
9. Understand the process of evolution and how evolution accounts for the unity and diversity of life
10. Be equipped to apply these principles to problems and issues of everyday life and on the way to becoming scientifically literate citizens.

COURSEWORK

- ***Lectures and Labs***

For each unit, I will present 3-5 lectures in either a pdf or video format that correspond to the module theme. Additionally, there is a laboratory exercise for each unit with a corresponding lab exam. There are 10 laboratories organized along with their corresponding unit theme. After completing the laboratory assignments, please go to Moodle to complete the corresponding lab quiz.

- ***Recommended Readings***

We will be using the free online text book in Biology available through OpenStax. I have provided the OpenStax chapters that correspond with our module themes in **blue** on the syllabus. Optionally, you can purchase access to the online learning management platform LRNR for this course. This platform provides online access to the OpenStax book with the abilities to highlight, bookmark, take notes, make flashcards, etc. in order to personalize the learning process and better manage your learning experience.

- ***Problem sets and Exams***

There are 40 problem sets/practice quizzes in this course corresponding to each module. These problem sets will require application of information from lectures and further insight exercises in new contexts related to the material. The problem sets (quizzes) will be on Moodle. You have 2 attempts at each practice quiz.

There will be four exams in total for this course. Three unit exams follow the associated lectures, problem sets, and further insight exercises. Those three exams are noted on the schedule with the due date. The lowest of these three unit exams will be dropped. The final exam will be comprehensive with about 70% new material and 30% older material from the three prior unit exams. 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 50 questions. You will have **100** minutes to complete each unit exam. The final exam will have approximately 100 questions, and you will have **200** minutes to complete. The final must be completed the last day of Finals Week (consult the schedule below).

Once begun, exams must be completed as students cannot exit and re-enter the exam. It is the students' responsibility to utilize a reliable internet connection. If you experience technical difficulties, please contact me as soon as possible. Please try to troubleshoot your computer problems way before the deadline to be sure that Moodle is accessible and labs run accordingly. Do not wait until the last minute to find out your computer is not working properly. For IT and Moodle questions, please call 243-4999.

Makeup exams are possible if you have a serious personal emergency. You will receive a zero for a missed, unexcused exam. Since the lowest exam grade is dropped in this course, if you miss an exam, that will be the one exam dropped. Only students presenting verifiable medical or university excuses directly 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 (FI) give you the opportunity to work through a biology problem step-by-step or hear a more detailed explanation of a concept taught in the lecture. These exercises are designed to help you develop your scientific problem-solving skills. I strongly recommend reviewing these videos/exercises.

- ***Forums and "Office Hours"***

There is a discussion forum at the top of the Moodle page which students can use to post comments/questions about course material. I ask that you please refrain from posting anything exam-related. I will read the posts and answer them if appropriate. I aim to provide answers within 24 hours. If additional feedback in required, students can request a "live" online chat by appointment only to be facilitated through Zoom or meet me at my office on the UM campus.

- ***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.

- ***Grading***

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

2 Lecture Exams (at 100 pts each)	200
1 Final Exam (at 150 pts each)	150
40 Problem sets (at 10 pts each)	400
10 Laboratory Assignments (at 25 pts each)	250
Total	1000

COURSE POLICIES

- ***Late submission of work and examinations***

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 take into account any **documented** extenuating circumstances. But try your utmost to **NOT TO FALL BEHIND!**

Make-up exams are possible if you have a serious personal emergency or official university excuse. You will receive a zero for a missed, unexcused exam. Only students presenting verifiable medical or university excuses directly to Dr. Green at least 24 hours before the regularly scheduled exam will be eligible for a make-up exam.

- ***Technical Requirements***

Students must have software capable of downloading and reading PDF files and their computer must be Java-enabled. Some of the online labs require Java. I have found Mozilla or IE to best at handling those labs. **IMPORTANT** - it is imperative that you take the Moodle tutorial. This important orientation will require less than 1 hour of your time and will be in your problem set 1 for Unit 1. You will earn a Moodle certificate which is a requirement for this course. For those who have done it in other courses, you may upload your certificate to Moodle or send it to me via email.

- ***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 2018-19 UM course catalogue, http://www.umt.edu/catalog/. The last day to drop fall courses without the Dean's signature is 5:00PM on Friday, March 15th. Thereafter, a DROP may be requested by petition, but the petition must be accompanied by documentation of extenuating circumstances.

- ***Cheating and Plagarism***

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 Disability Services for Students (DSS). If you think you may have a disability adversely affecting your academic performance, and you have not already registered with DSS, please consult http://life.umt.edu/dss/ and contact DSS in Lommasson 154. I am happy to work with you and DSS to provide appropriate accommodations for your learning and testing. If you would like to request reasonable accommodations, you are advised to provide your DSS 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.

- ***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 will go to lots of email addresses, and some email providers will block this as spam. You will want to check the settings of your spam filters so that they allow such messages.