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BIOB 170N.01D: Principles of Biological Diversity

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Biology 170: Principles of Biological Diversity
2nd 6-week summer session 2020 Course Syllabus

Course runs: July 6 - August 13

Course meets: Remote instruction MTWR 11:30 - 1:20 through Moodle

Instructor: Greg Peters

Contact: 207-6154; greg.peters@mso.umt.edu

Office hours: Please feel free to use time at the end of online class meetings for questions, or get in touch through email any time.

Text: Hillis et al., Principles of Life, 3e ebook.

Step 1) Get an access code for reduced pricing through RedShelf on our Moodle page

Step 2) Enroll in LaunchPad to access your ebook at:

<https://www.macmillanhigherred.com/launchpad/hillis3e/13487714>

Check Moodle and email announcements for more detailed instructions if needed.

Class structure:

This is a remote class that includes real-time interaction even if we do not physically meet in person. The course is structured as a compromise between remote and online scheduling. Some of the work will be completed asynchronously (on your own time, but with definite weekly deadlines) and some conferencing instruction is offered to ensure interactive learning. Please take advantage of the freedom offered by this format while joining our noon meetings offered through [Zoom](#) for guidance and questions. These class lectures are intended to reinforce your reading and exploration of class content, but are not technically required for course completion.

This course is offered online through [Moodle](#), accessed using your UM netID. If you are unfamiliar with Moodle, please read the [UMOnline Moodle tutorial](#) soon. You can find links to the regular Zoom meetings on Moodle during the appropriate week. If you have never used Zoom, you will be prompted to download the program the first time you accept an invitation to a meeting. Please note that there is a practice Zoom meeting for questions and fixing bugs on Monday July 6 at 12:00 noon. Check out this [tutorial video](#) for joining a Zoom meeting.

Remote learning is new for many of us. Please do not be intimidated. Your professor, Greg, is here and happy to help. We will meet the learning objectives of a semester-long course in five weeks, so do not get behind. The two most essential pieces of advice for success are:

- 1) Maintain a commitment to weekly participation with a schedule for completing tasks.
- 2) Ask questions any time. Email is the most reliable way to get in touch.

Your Moodle page for this class includes:

- All course documents
- Discussion forums
- Links to class Zoom meetings
- Copies of weekly lecture slides
- Weekly exams
- Course grades

Learning Outcomes:

This course explores the amazing diversity of life on Earth by examining major groups of organisms, ranging from bacteria to animals. Successful completion will enable students to:

1. Recognize basic features of cell biology, including cell components and cell division
2. Understand core principles of reproductive biology
3. Appreciate the importance of phylogenetic classification
4. Distinguish major groups of life by key morphological and physiological features
5. Explore species diversity in the context of an introduction to ecology

For general education natural science requirements, upon completion of this course, a student 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

Course policies:

Students are expected to work alone during exams. Students registered with DSS will be accommodated appropriately during exams, dependent upon documentation. Please contact me one week before each exam if you require any service through DSS. University policies on drops, adds, changes of grade option, or change to audit status will be observed in this course. Students should specifically note that after Monday of week 2 a petition to change registration status must be completed and approved. A grade of C or higher will be considered passing for the P/NP option.

Evaluation will break down as follows:

5 Exams @ 50 pts ea.	250 pts	90-100% = A- to A
<u>5 Discussion forum assignments @ 50 pts ea.</u>	<u>250 pts</u>	80-89% = B- to B+
Total	500 pts	70-79% = C- to C+
		60-69% = D- to D+

Deadlines:

Deadlines are absolute in the fast progression of the summer session. Please note that you have deadlines for discussion posts every day Wednesday and Sunday, and exams close every Sunday at 11:55pm. Make room for the unexpected by starting well ahead of the deadlines.

BIOB 171 lab course:

There is a lab that accompanies this class, but it is not required. If you are enrolled in the BIOB 171 lab, please note that the content follows this course closely, but it is a separate class with a separate book, Moodle page, format, and grade.

Overview of Class Responsibilities (listed in Moodle as well):

Weekly readings are outlined in the class schedule and each week's Moodle page. All readings are available in your ebook for the course. Make sure you have access to your ebook by July 6. There is a lot of content in this shortened semester and the reading can seem daunting. The discussion forums will help guide you through the essential reading by highlighting the key concepts in each chapter.

Discussion forums are an essential component of this remote course. Evaluation will be based largely on participation, but sharing valid contributions is essential. Your participation will be graded based upon sharing meaningful, original posts on time. Don't worry about length, just make sure to add new ideas in your own words and use the forums to help your learning.

You have a lot of freedom with the discussion forums, but there are important deadlines. For full credit, you must share a minimum of two responses in each of five topics presented by your instructor each week. This means a minimum involvement of sharing ten posts per week. The first five posts must be shared by Wednesday and the next five posts by Sunday each week. A good strategy is to share your first five posts in response to your instructor's prompts, then share your next five posts (or more) as responses to classmates. Try to look past the number or length of posts and use the discussion as a tool to reinforce your learning before each week's exam.

To participate, click on the week's discussion forum on Moodle. Select a topic to respond to. Press "reply," add your comments to the textbox, and press "submit." Note the link to "use advanced editor and additional options" just below the textbox for your post. Once this is open, you can click the little arrow beneath the word "message" for more editing tools, including the ability to [add images and links](#) to webpages.

Lecture meetings on Zoom are offered as guided instruction of content using shared slides and responses to student questions. They are given at 12:00 noon every Tuesday and Thursday, scheduled to end at roughly 1:30, during the scheduled time for this class. Two lectures are offered each week to balance the value of interactive learning with needed time for self-directed work. Lectures will move along quickly to honor everyone's time and will be offered assuming that everyone has completed the relevant reading before the meeting. Joining the lectures is optional, but advised. Copies of lecture slides will be available on Moodle. Much of your success will depend on self-motivated engagement with the reading and the discussion forums, but remember that you are not alone and your instructor is here to help.

Exams will be available on Moodle to complete at any time during the week offered, but must be completed in one, one-hour sitting. It is not possible to start, pause, and then continue. Exams are open-resource, but it will be essential to read and prepare ahead of time given the time limit. Exams will close at 11:55pm Sunday night.

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

Course Schedule

Every week will follow the same pattern:

Monday:	Weekly content available on Moodle no later than 11:00am Start reading and preparing for discussion posts
Tuesday:	Lecture meeting using Zoom from 12:00 noon - finish (depending on need) Continue reading; start adding to the weekly discussion forum
Wednesday:	11:55pm deadline for first five discussion forum posts
Thursday:	Lecture meeting using Zoom from 12:00 noon - finish (depending on need) Continue posting to discussion forum
Sunday:	11:55pm deadline for second five discussion forum posts 11:55pm deadline for weekly exam

The course is set up so that you can complete all tasks within the scheduled week of Monday through Thursday. The Sunday night deadline allows weekend work for anyone who needs it. You are encouraged to consider the weekend as a “backup” and try to complete the weekly tasks by Thursday or Friday.

Dates: Topics & Tasks:

Week One Class Overview, Reproduction & Phylogeny

July 6-12 Practice Zoom meeting & Course introduction at 12:00 noon Monday July 6
Ebook reading sections: 7.1, 16.1, 14.1, 14.2 & 14.4
Zoom meetings at 12:00 noon Tuesday and Thursday
10 Discussion forum posts due (five by Wednesday, next five by Sunday)
Exam 1 closes 11:55pm Sunday July 12

Week Two Prokaryotes & Protists

July 13-19 Ebook reading sections: 18.1, 18.2, 19.1, 19.2 & 20.1
Zoom meetings at 12:00 noon Tuesday and Thursday
10 Discussion forum posts due (five by Wednesday, next five by Sunday)
Exam 2 closes 11:55pm Sunday July 19

Week Three Fungi & Plants

July 20-26 Ebook reading sections: 21.1 - 21.3 & 20.1 - 20.5
Zoom meetings at 12:00 noon Tuesday and Thursday
10 Discussion forum posts due (five by Wednesday, next five by Sunday)
Exam 3 closes 11:55pm Sunday July 26

Week Four Animals - Invertebrates

July 27-
August 2 Ebook reading sections: 22.1 - 22.5
Zoom meetings at 12:00 noon Tuesday and Thursday
10 Discussion forum posts due (five by Wednesday, next five by Sunday)
Exam 4 closes 11:55pm Sunday August 2

Week Five Vertebrates & Ecosystem Diversity

August 3-9 Ebook reading sections: 22.6 & 38.3
Zoom meetings at 12:00 noon Tuesday and Thursday
10 Discussion forum posts due (five by Wednesday, next five by Sunday)
Exam 5 closes 11:55pm Sunday August 9