

MONTGOMERY COLLEGE
Biology Department
Rockville Campus
BIOL 210 Microbiology
Spring 2020

I. Instructor Information

Name: Shawn Lester **Office:** SC 234H **Phone:** 240-567-5127
Email: shawn.lester@montgomerycollege.edu
Web Site: info.montgomerycollege.edu/faculty/slester
Office Hours: **MW: ~3-4pm; T: 1-2pm, ~3:30-4pm; R: 1:30-2pm** --Email is also an excellent way to ask questions. I check my email 7 days/week.

Department Office: Biology SC 234 **Department Phone:** 240-567-5124

II. General Course Information

BIOL 210, Microbiology is a four credit lab/lecture course intended for science majors. The MW lecture meets two hours per week. MW am meets in room SW 202; MW pm meets in SC 125. The lab meets four hours per week in SC 203: MW at 9am and 1pm. **Prerequisites:** Students must have taken BIOL 150 (Principles of Biology I) or equivalent.

Course Description: This course will provide an introduction to the study of microorganisms; their structure, metabolic activities, genetics, mechanisms for their control; interactions with humans, the environment, disease and immunity.

Laboratory sessions include basic techniques for culturing and identifying microorganisms as well as observing their activities.

Format: This course is primarily lecture in delivery with hands-on lab activities. There will be case studies / cooperative learning activities performed in lecture and lab. Attendance is required to perform these activities.

Open Lab Hours: There are no open lab times. You must use the time you have effectively. As a result, you do not leave lab until I say you can leave lab.

III. Learning Objectives

Upon completion of this course, the student will:

- Be familiar with microbial diversity.
- Describe the morphology and characteristics of the following groups of microorganisms: bacteria, viruses, fungi.
- Describe and differentiate the major types of microbial metabolic pathways. * (respiration and fermentation)
- Describe bacterial growth, optimal growth conditions, growth media and physical and chemical methods for controlling or preventing bacterial growth.
- Describe the bacterial mechanisms of gene exchange: conjugation, transduction and transformation.
- Describe the bacterial mechanisms of gene exchange and their practical applications using recombinant DNA technology.
- Discuss mechanisms of microbial pathogenicity and host resistance to microbes.
- Demonstrate an ability to focus a microscope slide.
- Demonstrate sterile technique for the manipulation of bacterial cultures.
- Use appropriate aseptic techniques, microscopy, and biochemical testing to identify unknown bacteria.

This list is not intended to be comprehensive. Specific learning objectives will be included with each lecture.

IV. Texts and Supplies

Text: Tortora, Funke & Case; Microbiology: An Introduction, 8th edition or higher

Lab: Leboffe & Pierce, MICROBIOLOGY LABORATORY Theory & Application-**brief version**, 2nd or 3rd edition

Must Have: **colored pencils for lab to make drawings or cell phone/digital cameras; regular pencils for exams; shoes that cover your entire foot; rubber gloves for staining**

V. Grading

A. Requirements/Hints for Success

Lecture

In order to successfully complete this course, the student must attend the lectures and take all of the lecture exams (see section **B**). There is a significant amount of written work that must be submitted complete and on time. Handouts accompany each lecture. **Students must download handouts from the web site prior to each lecture.** These handouts are outlines. You must still take notes. Learning (study) objectives will be included with each handout. Treat these objectives like test questions. Try to answer them first. Then refer to the notes and textbook and **write** out the complete answer and use this to study for the exams. Exams are derived from the objectives and primarily from the lecture notes. The textbook is primarily a supplement to the lecture. Anything specifically referenced (verbally or in writing by me) in the book is "fair game" on an exam. The lecture exam format can be multiple-choice, short answer, essay or any combination thereof.

Lab

The student must attend all laboratories and take the lab exams. More than **two** unexcused lab absences can result in an "**F**" for the course. **Being on time to lab counts. If you are late twice to lab, it will count as an unexcused absence.** Lab notebooks will **not** be collected. You will be tested on knowledge based on the results and observations you obtain. The lab exams will be practical in nature. This means that exhibits (slides, cultures, test results, etc.) will be set up at stations around the lab. You will have to answer questions about what you see at each station. This exam is timed. Typically, two minutes per station is allowed with 5 minutes at the end to go back to any station(s). Total time = approximately 1 hour.

B. Course Grade

The lecture and lab components are combined to make one final grade. The following grading policy is tentative and subject to change. For the purposes of posting grades, you will create a 4-digit PIN number. Do **not** use 1234, 0000 etc.

Lecture

4 hour exams @ 100 points each	400 points
(You may drop the lowest exam grade and replace it with the final. Optional Cumulative Final @100 points)	
Case Studies (Metabolism – 20 pts, HIV – 10 pts, Epidemiology – 25 pts, Antibiotics – 20pts)	75 points
TB Self-Study Module	20 points
	Total = 495 points

The final exam is comprehensive and optional. It may be used to replace the lowest lecture exam score. The final exam is typically all multiple-choice. Please show up at the beginning of the scheduled time.

Lab

Practical Exam I	100 points	Unknown I	50 points
Practical Exam II	100 points	Unknown II	50 points
Quizzes (4 @ 10 pts)	40 points	Streak Plate	20 points
Bioinformatics Activity*	12 points	Gram Stain	20 points
Bioinformatics Unknown*	8 points	Case Study – TBD	?
(*there may be a different assignment or additional assignments)			
		Total =	400 points
		Grand Total =	895 points

Specific information for each assignment will be handed out as needed. **There are no extra credit assignments; however, there will be bonus points.**

You do not keep exams, quizzes, or case studies.

C. Standards

Final grades will be assigned according to the following scale:
90-100%=A; 80-89%=B; 70-79%=C; 60-69%=D; <60% = F

Grade Calculation: your points earned divided by the total possible points times 100. **When you receive a grade, WRITE it down so you can keep track of your grades!**

D. Make-up Policy—Read Carefully!

Lab - Lab activities missed due to an excused absence might be made up by attending another lab section. Other labs occur during the day and night on M/W and T/R. Plan ahead if possible. Special arrangements must be made in order for you to attend one of these other sections so talk to me before you do it.

Lab practicals are **timed** and will occur at the regular lab time so **don't be late!** If you are late, you lose that time and will not be allowed extra time. Lab practicals **can only** be made up with difficulty. BE THERE! BE ON TIME! Exceptions will be made only under the most extreme circumstances. Documentation is required. Lab quizzes can be made up for excused absences.

Lecture – The first time you miss a lecture exam; it **cannot** be made up **regardless** of the excuse. **Exception: If you have documentation (e.g., doctor's note, police report etc.) and can come to another of my lectures giving the same exam, then you may take your exam with my other class. If you can't come to another lecture or have no documentation, then you will use the final exam at the end of the course.** If you have already missed an exam and you miss a second lecture exam, you must provide documentation of your absence. If your absence is excused, then you will take a different make-up exam. This second missed lecture exam **can only** be made up with a verifiable excuse. Know when your exams are going to occur and plan accordingly. You can use the final exam to replace a missed exam. If you must miss class anytime, call me (240-567-5127), email me shawn.lester@montgomerycollege.edu or call the office (240-567-5124) and leave a message for me. **Note: Handwriting must be legible in order to receive credit on exam questions.**

E. Late Policy

Assignments are due as stated on the lab syllabus. Assignments will **lose 10% each day they are late regardless of the excuse.** Everyday of the week counts (including weekends and holidays). For example: an assignment is due Thursday at 9 am. You turn it in at 9:10 am = -10%. You turn it in on Friday = -20%. You turn it in the following Tuesday = -60% etc.

F. Audit Policy

Students may **not** audit this course.

G. Final Exam Policy

The final exam is comprehensive and **optional**. It may be used to replace the lowest score on any of the lecture exams and it can also be used to replace a missed lecture exam. Optional exams **cannot** hurt your grade. See syllabus for dates and times. **Please arrive at the beginning of your scheduled exam. You may not show up whenever you want during the final exam period.** DSS must let me know in advance if they are taking the

optional final; otherwise you must take in the same room with the rest of the class. Students who have made travel plans to leave the area before the end of finals **will not** be accommodated.

VI. Classroom Policies

A. Attendance

Students are expected to attend all lectures and labs. More than two unexcused lab absences can result in an "F". **Being on time to lab matters; if you are late twice to lab (bad weather excluded), it will count as an unexcused absence.** If you wish to withdraw from the course, you must do so officially. Please refer to the schedule of classes for dates and procedures. Simply not showing up for class the rest of the semester, will not result in an official withdrawal. If you do this, you will receive an "F".

Arriving late to class frequently is rude and disruptive. You have no right to do it. Please be on time (weather permitting). If you cannot make it to class, you can call my voice mail at 240-567-5127, the department's voice mail at 240-567-5124, or email shawn.lester@montgomerycollege.edu . All are available 24 hours/day. There is no excuse for not notifying me.

B. Academic Honesty

I will show you the respect and trust you deserve. Academic dishonesty will not be tolerated. Even asking another student about a single multiple-choice question can result in failure on the exam or the entire course. Group study is a great way to learn but your work is your own. Reports or other assignments that have been copied from one another will result in half or no credit for each conspirator. A student caught cheating on an exam will have 2 options: 1) you will immediately drop the course or, 2) I will fail you for the course and your grade history will show "Academic Dishonesty". For more information, please refer to the Student Handbook section on "Academic Dishonesty and Misconduct". On the web, go to: <https://www.montgomerycollege.edu/documents/policies-and-procedures/42001-student-code-of-conduct.pdf> (this link opens a PDF file)

C. Classroom Conduct

I will show you the respect and courtesy you deserve and I expect you to do the same for your fellow classmates and me. You are all here to learn. Please refrain from using or having others contact you on cell phones, pagers etc. For more information, please refer to the Student Handbook section on "Classroom Behavior".

D. Support Services

A student who may need an accommodation due to a disability should make an appointment to see me during my office hours. A letter from Disability Support Services (DSS) authorizing your accommodations will be needed. The DSS office is located in CAB Room 122 and may be called on 240-567-5058, TTY 240-567-9672. Visit the web site at <http://www.montgomerycollege.edu/dss> . **Important: Depending on your schedule, double-time students will take their exams immediately before, during, or immediately after the scheduled exam time—not at anytime during the day.** Please note that DSS students **do not receive double-time for group activities**. We will meet to develop a plan to manage your accommodations.

E. Cancellation of Classes

The only time the Biology Department cancels classes is when the college closes. The college reports its status to all of the major television, radio stations, post announcements on the college web site, and sends email/text alerts. If the weather is inclement and you have not heard or the college has not made a decision yet, **use your own judgment**. This applies anytime there is severe weather. Your life is worth an absence! Just call or email me and let me know as soon as you can if you will miss class.

F. Cell Phones

Unless you have an urgent need such as children home alone, please turn off cell phones before class begins. Do not use them during class. Everyone will appreciate it!

G. Children on College Premises

Per college Policies and Procedures, Section 75005CP, Paragraph 1.C.: "...both supervised and unsupervised children are discouraged from visiting classrooms, libraries, centers, lecture halls, offices or other facilities without the approval of the faculty member or supervisor of the facility." In addition, Paragraph 1.D.: "No children, whether supervised or unsupervised, are permitted in laboratories, gymnasiums, fitness centers, construction sites, maintenance facilities or other areas where their presence constitutes a danger to themselves or others." The term 'children' means any persons under the age of 16.

H. First Exam

There will be several questions on the first exam concerning the policies and procedures in this syllabus. Make sure you study it!

I. Electronic Devices

You are not permitted to use any type of electronic device during an exam. This includes, but is not limited to, dictionaries and translators, listening devices with headphones, cell phones, I-pods, smart watches and any other wearable smart technology. They must be put away during exams. If you have a question about a word on the exam or what something means, ask me.

The college has created a web page with many important links: <http://www.montgomerycollege.edu/mcsyllabus/>

J. Written Communications

"stop uzn chtspk n ur writin. prob is when u need 2 tipe somthin prfssnl u wont. hehe ...lol"

Stop using "chatspeak" in your writing. The problem is that when you need to type something professional, you will inadvertently use "chatspeak" when is it not appropriate. The people on the receiving end will not be impressed. If you send me an email using chatspeak, I will not respond. When you send an email to someone who is not a friend or stranger in a chat room, use an appropriate greeting, ending, capitalize the first word of a sentence and the pronoun "I" etc.

K. Beginning and Ending

This course begins and ends as stated in the schedule of classes. The last day of this course is **May 6th** for regular class days and finals will occur during the following week. If for some reason you have planned not to be here that last week or you have planned a vacation during this course, you **must drop** the course **now**. You will not be accommodated and you will be **failed** for lack of attendance.

L. Shoes and Attire

Goggles and lab aprons are provided and must be worn when working with live organisms, Bunsen burners and toxic chemicals. **SHOES MUST COVER THE ENTIRE FOOT**. See below for examples. Sandals, clogs, shoes that have open toes, open backs, heel straps, flip-flops, flats, high heels, moccasins etc. are not acceptable.

Socks are not shoes! You may not be allowed to participate in lab without the proper shoes. **This may count as an unexcused absence or 3 points deducted from your final grade for each offense.**

Exposed skin should be kept to a minimum. Avoid halter tops, spaghetti straps, tank tops, anything sleeveless etc. unless you wear a lab coat.

Shoes

Acceptable:



Unacceptable:



sandal



ballerina



sling back shoe



one-bar shoe



pump



T-strap shoe



BIOL 210 Microbiology Spring 2020

Tentative Lecture Syllabus^{a, b}

Date	Topic	Chapter
January		
27	Syllabus; Begin Intro to the Microbial World	1
29	Finish Intro; Tools to Investigate: Microscopy, Staining	3
February		
3	Bacteria: Structures and Functions	4
5	Metabolism: Enzymes (do on your own); Aerobic Respiration, Fermentation	5
10	Complete metabolism; Case Study: Metabolism (in class only)	5
12	Bacterial Growth	6
17	Finish Growth; begin Genetics (Genetics not on Exam 1)	8
19	Exam 1^c	
24	Genetics	8
26	Finish Genetics; Begin Classification	
March		
2	Classification; (<i>Groups of Bacteria – do on your own</i>)	10, 11
4	Antimicrobials; (<i>Control of Microbial Growth – do on your own</i>)	20, 7
9	Case Study – Antimicrobials (in class only!)	20
11	Fungi; Begin Bacterial Viruses (not on exam 2!)	12, 13
16-18	Spring Break!!!!!!!!!!!!!!!!!!!!!!	
23	Exam 2^c	
25	Bacterial Viruses continued.	13
30	Animal Viruses	13
April 1	Finish Animal Viruses; Immunity: Disease & Epidemiology	14
6	Finish Epidemiology; Immunity: Pathogenicity	15
8	Case Study: Epidemiology	
13	Exam 3^c	
15	Immunity: Non-specific Defenses (<i>Watch Quorum Sensing video at home, worksheet is FYI.</i>)	16
19	<i>Last Day to Drop w/o a "W"</i>	
20	Immunity: Specific Defenses	17
22	Immune Disorders: Hypersensitivity; TB – Self-Study Module (Take-Home)	19
27	AIDS	
29	Case Study – HIV (in class only!); turn in TB – Self-Study Module	
May		
4	Exam 4^c	
6	Review for Optional Final Exam/Snow day make-up	
11	Comprehensive Final Exam^d (AM: 8:30-9:45; PM: 12:30 AM – 1:45 PM)	

^aThis syllabus is tentative and subject to change.

^bIn the event of a snow/weather/terrorist cancellation, check your college email for additional information.

^cExams cover material from each lecture since the last exam up to and sometimes including the last lecture before the exam.

^dThe final exam is optional. It may be used to replace the lowest score for a lecture exam.

Prof. Lester's Courses

Cheating, Academic Dishonesty, Recommendation Letters, Scantrons and Misc.

Identical Assignments

Although you may work together on homework, your assignments may not be identical (i.e., overwhelmingly the same) to each other. If this happens, everyone involved will receive a "0". If it happens again, everyone will receive an "F" for the course.

Copying Assignments from a Previous Semester

Some students give all of their notes and assignments from the previous semester to their friends taking the course in the next semester. If I find that you are using last semester's answers, you will receive an "F" for the course. How will I know this? I make slight changes in assignments so that a particular question may be the same but the answer is different.

Students Caught Cheating on Exams

If I catch you cheating on an exam, you will fail the course and your transcript will show 'Academic Dishonesty'.

Recommendation Letters

Recommendation letters are a privilege granted by faculty. We are not required to write them. The minimum grade required to be considered is a "B". It is my right to deny your request for any reason. I will only write a limited number of recommendations per semester.

Once Assignments are Returned

Once an assignment has been returned, late assignments will not be accepted.

Assignments with Multiple Pages

Assignments with multiple pages must be stapled. Assignments with paper clips and folded corners will not be accepted. When they are stapled they may be turned in late with a 10% penalty.

Handwriting

Handwriting must be legible. Written answers must be clear and make sense. It is not my job to interpret your written work. If I cannot read your writing or it makes no sense, you will either lose credit or receive no credit. This applies to assignments and exams.

Photographing Exams, Case Studies, and other Assignments

Exams, case studies, and all other assignments that you do not keep may not be photographed, copied, or recorded in any way. These actions constitute cheating. If you are caught doing these things, you will receive an "F" for the course! Even if you delete the images/recordings, you will still fail the course. It is the action, not the product that merits the "F".

Filling Out Scantrons

Lecture exams are part multiple-choice and lab exams are all multiple-choice. All answers must be filled in on the Scantron. The only answers that count are on the Scantron. If you circle the correct answer on the test paper but fill in the wrong answer on the Scantron, you will not get credit for that answer. If you fill in more than one answer on the Scantron, you will not get credit for the one that is correct. The Scantron must be filled in during the exam not at the end! If you wait until the exam is over to fill in the Scantron, you will receive zero credit for the multiple-choice questions.

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