

## **Course syllabus for BIOL 357: General Microbiology – Spring 2014**

Monday/Wednesday 2:00PM – 3:15PM

Location: DA203

**Instructor:** Dr. Deborah Yoder-Himes, Ph.D.

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**Phone:** 502-852-0991

**Office hours:** Wednesdays 10:00 - 11:00AM or by appointment

**Text:** Brock Biology of Microorganisms by Madigan, Martinko, Dunlap, and Clark, 13th edition, Prentice Hall (hardback, softback, loose-leaf), 14th edition is fine too though please note that figure and page numbers may have changed.

This course will require the purchase or usage of an iClicker/iClickerGo instrument (see below).

**Lab Course:** BIOL 358, M/W 9:00AM-10:30AM (Section I) or 10:30PM-11:50PM (Section II) can be taken concurrently and is currently led by Margaret Wallen.

### **Description**

Microbiology is the study of microorganisms which are too small to be seen with the naked eye. These organisms surround us in the environment and live inside us and on our skin. While some microorganisms can cause disease, the vast majority of microbes are harmless or, in fact, beneficial to humans.

This course will provide an introduction to microbiology. The first third of the course will focus on the general physiology of microbes including what they look like and how they function. The second third of the course will focus on how microbes are different in terms of their ecology and their diversity. The last third of the course will focus on how microbes influence human and animal health and how we, as humans, combat them.

### **Prerequisites for the course**

CHEM 202; BIOL 329 or BIOL 330. This course is for Biology Majors.

### **Expectations**

You are expected to attend each lecture and read the assigned reading. You are expected to complete all assignments and participate in class as required. If you miss a class FOR ANY REASON, you are still responsible for the material covered. Professional attitude and behavior in class is expected. You are expected to learn the material and be able to related concepts together in a higher manner.

**Cell phone use is distracting for both the student and instructor and therefore will not be permitted during class time. Phones should be silenced during class. If your phone rings during class, you are expected to pick up your phone and leave the classroom immediately to deal with it. Phones, book bags, hats, food, and drink will also not be allowed during exams.**

### **Schedule**

Class meets for two 75 minute lectures per week.

**Course Outline – subject to change at the instructor’s discretion**

**Topics to be covered and relevant textbook chapters. Exams will cover material since the previous exam except for the final which will have a cumulative portion.**

#	Subject	Chapters in textbook
1	Introduction and microscopy	2
2	Microbial morphology and structures	3
3	Bacterial growth and nutrition	4, 5
4	Bacterial DNA Replication	6
5	Bacterial Transcription	6
6	Bacterial Translation	6
7	Gene Regulation	8
9	Viruses and phage	9
10	Microbial Genetics	10
11	Microbial Genomics	12
12	Microbial Evolution and Taxonomy	16
13	Prokaryotic Metabolic Diversity	
14	Microbial Ecology	22, 23
16	Microbial Symbiosis	25
17	Commensal Flora for humans	27
18	Bacterial Pathogenesis	--
19	Bacterial Pathogenesis	--
20	Viruses and phage II	--
21	Eukaryotic Microbes	--
23	The Immune System	28, 29
24	The Immunological Response to Microbes	30
25	Controlling Microbial Growth	26
26	Antimicrobial Resistance	26

**Dates of note:**

January 13, 2015	Last day to drop/add
January 19, 2015	Martin Luther King Jr Day – no classes
February 4, 2015	EXAM I
March 2, 2015	EXAM II
March 9, 2015	Last day to withdraw
March 16-20, 2015	Spring Break – no classes
April 6, 2015	EXAM III
April 29, 2015	Final Exam (Cumulative Final, 2:30- 5:00PM, in Davidson 203)

**Use of Tegrity lectures**

At any time over the course of the semester, the professor may utilize on-line lectures to compensate for cancelled classes or to aid in student learning. You will be able to access these lectures through Blackboard>Tegrity Classes (found in the red panel on the left hand side of the

site). These will be made available until the end of the semester for your use. You will be responsible for the material in the lectures for each exam.

### **Absences**

Attendance is not mandatory for this course; however, participation points are dependent on class attendance (see iClicker information above). If you miss a test, there is no penalty if you notify me at least one week before the scheduled exam date and arrange with me to take the make-up exam at a particular date, preferably before the regularly scheduled exam. This also includes absence due to University sanctioned activities (athletics, band, etc). If you miss an exam but contact me by email within 24 hours of the exam, you will be allowed to take a make-up exam; however there will be a 25% penalty (except for documented medical emergencies: please note that a scheduled visit with a dentist or physician is NOT an emergency). If you miss an exam and fail to contact me within 24 hours of the exam, your exam score will be zero; no exceptions. Please note that the make-up exam may be in a different format than the one given during actual class time.

### **Lecture notes**

I will post a Powerpoint presentation prior to each class for you to use in taking notes. The instructor reserves the right to change the presentations prior to the lecture. Please note that there will be exam questions that will come directly from lectures and will not be in the book or the Powerpoint slides that I post on-line in advance of lecture. This is to reward the people who come to class.

### **Course methodology and grading**

*There is a total of 500 points for the course divided among two categories: exams and class participation.*

#### **Exams (400 points total; 80% of your final grade)**

There will be four examinations (each worth 20%), the first three of which will be covering material given since the previous exam. The final exam will be cumulative but will primarily focus on the last quarter of the material. Each exam will be composed of multiplechoice questions taken from the lectures and the assigned reading.

#### **Participation points (100 points; 20% of your grade total)**

Class participation will be graded by two methods: class i>Clicker questions and by participation in Peerwise, a social means to help assess yourself and others).

#### **i>Clicker (36 points)**

Throughout the semester, I will be asking questions for you to answer electronically via a clicker or clicker media application. I may ask up to 10 questions per class period at my discretion. You are required to answer 75% of the questions posed in the course in order to receive full participation points. These points are an all-or-nothing deal - You answer 75% of the questions, you get the full 36 points. You only answer 74% of the questions, you get 0 points. The University of Louisville currently supports iClicker (iclicker.com). In order to receive this credit, you will need to register your i>clicker 2 remote or set up your i>clicker GO account by **January 14, 2014**. Please see the instructions below to register your iClicker remote (through Blackboard) or your iClicker GO subscription.

In this course, you have the option of using i>clicker2 remote, or using i>clicker GO, which enables you to vote via a web-enabled device like a laptop or smart phone. *Only purchase an i>clicker GO subscription if:*

1. You will not be using i>clicker in another course that does not allow i>clicker GO as an alternative to purchasing a remote.
2. You do not plan to sell back a remote to the bookstore.
3. You have access to a wireless device (i.e. a laptop, iPhone, iPod Touch, or Android) running a browser that supports AJAX, JavaScript, and HTTPS requests such as Internet Explorer, Firefox, Chrome or Safari.

### Registering your i<clicker device

#### *i>clicker 2 remote registration:*

You must have come to class at least once and voted on at least one question in order to complete this registration properly. Once you have responded to a question with your i>clicker remote, go to <http://blackboard.louisville.edu> and locate the BIOL 357 course information. To register your iClicker remote, go to the BIOL 357 General Microbiology homepage on Blackboard, select Tools from the left menu (in red), find and select iClicker Remote Registration, and complete the registration information. The remote ID is the series of numbers and sometimes letters found on the bottom of the back of your i>clicker remote. i>clicker will be used every day in class, and you are responsible for bringing your remote daily.

#### *i>clicker GO registration:*

To create an i>clicker GO account, visit <https://iclickergo.com> (USA) or <https://iclickergo.ca> (Canada) or download the app for [iOS](#) or [Android](#). Creating an account automatically starts a free 14-day trial subscription. Please use this trial period to make sure i>clicker GO will work for all of your i>clicker classes before purchasing a subscription as there are no refunds afterwards.

Once you create your i>clicker GO account, you do not need to do anything else to register. Just be sure that your account has the following profile information:

Student ID: [student ID student should use here]

School ZIP/Postal Code: 40292

School Name: University of Louisville

At the end of your trial, should you decide to purchase i>clicker GO, you can purchase access to i>clicker GO in a variety of subscription lengths using your credit card online or through in-app purchase with your smartphone; this subscription includes an unlimited number of courses.

If you have more questions on i>clicker registration, please visit <http://support.iclicker.com> for FAQs and other resources.

#### PeerWise (64 points)

We will be using an online test bank generator that is designed to support students in the creation, sharing, evaluation and discussion of assessment questions. You will need to register on PeerWise at [http://peerwise.cs.auckland.ac.nz/at/?louisville\\_edu](http://peerwise.cs.auckland.ac.nz/at/?louisville_edu). You make up your own username and password, and your identifier is **your UofL ID number**. Our course number is **10439**. The basics of how the system works is at <http://peerwise.cs.auckland.ac.nz/docs/students/>. A total of 60 participation points will be available through PeerWise for the course. Each student will be responsible for writing 6 multiple choice questions by the Friday prior to each exam that covers the material for that particular exam, answering 12 questions posed by other students, and commenting on 1-2 questions posed by other students. There is to be no True/False questions posted. If a T/F question is posted and another student reports it as inappropriate, the reporting student will be given 1 extra credit point added to their grade. To allow for honest and constructive criticism and to prevent an embarrassment by the writers or the answerers, all Peerwise activities will be done through the identifiers used by Peerwise and thus anonymous to you in the class. However, the instructor has a master list linking your

identifier with your name so that I can assess your contributions. Additionally, the instructor will not participate in question/answering unless the question has been directly plagiarized from class or if the comments take an inappropriate tone.

### **Academic Integrity Statement**

Plagiarism is the taking of words or ideas from someone else without quoting and/or citing the original work. This can come in the form of word for word or in substance. Materials from on-line sources must also be correctly cited if used. Plagiarism is a violation of class, college, and university rules, and it often constitutes copyright infringement which is against the law. Anybody caught plagiarizing and/or cheating in any way will receive in an automatic grade of “F” for the assignment/course. Second instances of significant plagiarism will result in an automatic grade of “F” **for the course** and the matter will be turned over to the department chair and the Dean’s office. In addition, attempting to answer iClicker questions using multiple devices is against class policy. Anyone caught cheating via the iClicker will automatically lose all iClicker points for the course.

### **Grading Scale**

Grades will be assigned on a percentage basis based on the total number of points from 4 exams and class participation points, and extra credit assignments if available. Cheating will result in an automatic “F” in the course. Your final grade in the class will be rounded to the nearest whole number and given the following grade: 90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; 0-59% = F.

### **Disability Resource Center**

The University of Louisville is committed to providing access to programs and services for qualified students with disabilities. If you are a student with a disability and require accommodation to participate in and complete requirements for this class, contact the Disability Resource Center for verification of eligibility and determination of specific accommodations. Once verified by the DRC, please provide the instructor with the necessary paperwork and accommodations will be made for exam taking.

<b>Point breakdown for Peerwise</b>	Points each	Points for each exam	Maximum points/ course
Authoring questions	1.5	9	36
Answering questions	0.25	3	12
Commenting on questions	2	4	16