**Applied Microbiology**

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**Course #:** \_\_\_\_\_\_\_\_\_\_ **Term:** \_\_\_\_\_\_\_\_\_\_

**Meeting Times & Locations:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Instructor:** \_\_\_\_\_\_\_\_\_\_\_ **email:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Office Hours:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Welcome to Microbiology HCR120! Our first class meeting is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**PREREQUISITE:**

You should not register for this course if you have not recently (within the last couple of years), and successfully, completed an introductory biology or cell biology course.

Some experience with computer use, including the internet, email, Microsoft Word, uploading and downloading files is strongly recommended. In the microbiology laboratory we will be working with large amounts of bacteria. Bringing books and documents into and out of the lab is not safe, so our class is virtually paperless. Those of you going into the field of healthcare will also increasingly encounter paperless medical offices and institutions. Being able to operate in the electronic world is essential for your safety and success.

**COURSE MATERIALS & RESOURCES:**

Moodle: Most of our class resources are linked through Moodle to our class website, the [Virtual Microbiology Classroom](http://www.scienceprofonline.com/virtual-micro-main.html) (VMC).

[Virtual Microbiology Classroom](http://www.scienceprofonline.com/virtual-micro-main.html): The VMC is used by biology students all over the world, but it was designed by me for you, HCR120 students. The resources on the VMC will help you excel in this class. Become familiar with the VMC as soon, and as thoroughly, as possible. Each Lecture Main Page and Lab Main Page link below takes you to the website material associated with the topic we are covering. THIS IS A VERY IMPORTANT RESOURCE...KIND OF LIKE YOUR SECRET WEAPON! USE IT. Virtual Microbiology Classroom URL: http://www.scienceprofonline.com/virtual-micro-main.html

Textbook: The course textbook is Foundations in Microbiology: Basic Principles by Talaro & Chess, Talaro packaged with Connect Plus (ISBN: 9781259319518). It is my understanding that there are two options: 1: Online textbook with access to CONNECT online review material; 2: Actual book with access to CONNECT online review material. You need to decide if you'd prefer a e-book (less expensive) or a real book. Follow this link to access your LearnSmart Textbook Review Materials: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ADDITIONAL COURSE INFORMATION:**

Attendance: Classroom doors may be locked 10 minutes after the start of class or lab. If you arrive after the doors are closed, you will not be admitted into the classroom. If you are tardy, but arriving before the doors are closed, find a seat near the door where you enter the classroom to avoid disturbing the class.

Should you find missing a class is unavoidable, plan to contact a ‘study buddy’ or ‘note buddy’ in an effort to capture what you missed. There are no make-ups for missed class work. I will not provide notes to students who have missed class.

Behavior: You will be asked to leave class, and will not receive credit for any work performed in class that day, if you are disruptive, inattentive or unprepared. Disruptive behavior includes, but is not limited to, talking out of turn, having conversations with classmates while I am lecturing, cell phone use, disrespect of classmates or instructor, or failure to participate. Walking around in a classroom that is in session is distracting to others and is considered disruptive behavior. If you need to leave the classroom, you will not be permitted to re-enter the session. If you are dismissed from class you will not be allowed to attend any future classes until you have a conference with me during my office hours.

Technology: This course requires a basic understanding of computer technology. You will be required to...

- access online educational materials.

- regularly check your school email.

- upload homework documents to Moodle (the student-teacher interface used for this class).

- produce and upload lab reports, some of which include photographs that you will obtain and integrate into your report.

Homework: You are allowed to turn in homework assignments up to one week late without a point penalty, unless otherwise indicated. However late assignments will receive no feedback, only a grade. It is to your benefit to turn in assignments on time, as the feedback I provide will help you better understand the material and improve your performance in this course. Homework assignments will not be accepted after the final due date listed in the upload link. All homework assignments must be in Microsoft Word .doc format.

Although many of our lecture topics have an associated homework document, you are only ASSIGNED (responsible for doing) homework if there is an upload for it in Moodle. In other words, just because a homework document exists on our course website, does not mean that it is assigned.

LearnSmart Online Textbook Review: Your textbook package includes online access to interactive reviews that provide an awesome opportunity to rehearse the information presented in the book. These reviews are "smart" and, based on your responses, are tailored to the material you most need to rehearse. Each week of review will take you about an hour and is worth 100 points. Some weeks cover one chapter, some more than one chapter, but still is worth 100 points per week. I will email a link to you that will take you to these reviews. Your one lowest review scores will be dropped. Follow this link to access your LearnSmart Textbook Review Materials: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Extra Credit: There is one opportunity for extra credit in this course, completing the Contagion movie homework described below. The extra credit assignment is worth 100 points, the same as all homework assignments, but, as extra credit, it is not required.

The links to the Word.doc of the Contagion extra credit assignment can be found on the main page of the Virtual Microbiology Classroom.

Extra Credit points will only be applied to your final grade if you pass the course with a 2.0 or higher (i.e. You can't use extra credit to pass the class.)

See the Extra Credit due date below, under General Course Materials.

Lecture Exams: There will be 2 lecture exams: the Midterm and the Final. If you are unable to take an exam on the scheduled date, you must contact me prior to the exam in order to get permission to take the exam in the testing center. If you take an exam late, in the testing center, you will only receive 85% of your grade.

Laboratory: One aspect of safety in the microbiology lab is to prevent potentially contaminated items from leaving the lab and contaminating the rest of the school, your car, your home, etc. To address this issue, I require that you study laboratory procedures prior to lab and bring a solid understanding of what you need to accomplish, to the lab session. You will also need to complete a Moodle quiz prior to your lab session. The quiz is online, like most of our materials, and you can take it 3x. Your highest grade from the two attempts will be recorded.

For your safety, proper attire is required. We will supply your with safety Goggles and a Lab coat, while you are in lab. You must wear long pants and shoes that cover your entire foot. If your hair length is past your shoulders, you must wear it up (pony tail, or for very long hair, it must be up).

You will not be permitted to enter the lab once the door has closed and the lab has begun. If you bring personal items into the lab or fail to follow ALL safety rules you will be asked to leave the laboratory. You will receive a grade of zero for the lab report and you must arrange a conference with me, during my office hours, before you will be allowed to return to lab.

In lab you will work with a partner (occasionally three people will work on a lab if there is an odd number of students). You may complete your Lab Report together, as a team, unless otherwise indicated. So only one of you needs to upload each lab report. Make sure both of your names are on the report you submit. I require that each lab partner use a different color text to show the work that he/she contributed to the lab report, so I can easily see the relative contribution. Choose any color that easily is visible and NOT red, as red is the color I use to correct assignments.

For every Lab Report, students will rate the relative contribution that each lab partner made to the work involved in completing the lab and producing the Lab Report. All course assignments other than the lab report must be your own original work, and cannot be submitted as group work.

Our Lab Practical Final Exam will take place in lab, during our last lab period. This exam cannot be made up. You must complete it in lab, during our scheduled lab time.

Academic Dishonesty: Please be aware of the school’s academic dishonesty and plagiarism policies in the student handbook. Your work must be your own, produced in your own words. Plagiarism may result in a grade of zero on the assignment, as will any homework assignments in which multiple students turn in identical work.

Any plagiarism (presenting material as your own that others have created) will be reported to the school and will become part of your academic record. Subsequent infractions of this policy lead to a failing grade in the course and expulsion from the institution. Academic dishonesty impugns your character and I believe no one entering the noble medical professions should have questionable character. Any suspicious act will result in failed assignments and removal from the course.

Calculating Your Grade: You grade is based on a weighted average. At any time during the semester, you can calculate your current grade percentage by:

Lecture Exams: Average % \_\_\_\_\_\_\_\_X 0.40 = \_\_\_\_\_\_\_\_

Lab Quizzes, LearnSmart Textbook Reviews and Lab Partner Ratings: Average % \_\_\_\_\_\_\_\_X 0.15 = \_\_\_\_\_\_\_\_

Laboratory Reports & Lecture Homework: Average % \_\_\_\_\_\_\_\_X 0.20 = \_\_\_\_\_\_\_\_

Laboratory Practical Exam Score: % \_\_\_\_\_\_\_\_X 0.25 = \_\_\_\_\_\_\_\_

For more information on weighted averages, see [Calculating a Weighted Average](http://www.blacksdomain.com/files/Notes/Calculating_WA.php).

Grade Associated with Percentage:

100 - 90% = 4.0

below 90 - 85% = 3.5

below 85 - 80% = 3.0

below 80 - 75% = 2.5

below 75 - 70% = 2.0

below 70 - 65% - 1.5

below 65 - 60% = 1.0

below 60% = 0.0

NOTE: These Moodle materials constitute the course syllabus, and are subject to change. Any changes will be announced through the class discussion and announcement function below, in this Moodle panel.

**GENERAL COURSE MATERIALS**

* UPLOAD "Contagion" Movie Extra Credit - **Due 12/11 before 11:45pm**. NO LATE SUBMISSIONS ACCEPTED
* Class Announcements & Discussion Board Forum
* [Virtual Microbiology Classroom](http://www.scienceprofonline.com/virtual-micro-main.html)
* [Study Skills, Tips & Strategies for College Students](http://www.scienceprofonline.org/misc/study-skills-tips-strategies-college-students.html)
* [SPO Microbiology Lab Video Library](http://www.scienceprofonline.org/science-video-libr/microbiology-video-library.html)

**CLASS SCHEDULE**

**WEEK #1 (10/23 & 10/24)**

**REMINDERS & ANNOUNCEMENTS:**

* First day of class includes both lecture AND lab on Thursday 10/23!
* IF YOU MISS THE FIRST CLASS LECTURE YOU MAY HAVE DIFFICULTY UNDERSTANDING HOW THIS CLASS WORKS, AS THIS IS PART OF WHAT WE WILL BE COVERING THE FIRST DAY, IN ADDITION TO COVERING INTRO TO MICROBIOLOGY. THERE IS NO MAKEUP OF A MISSED LECTURE. IF YOU MISS THIS CLASS YOU MUST SEE ME. IF YOU MISS THE FIRST LAB, YOU CANNOT MAKE IT UP. YOU WILL ALSO NOT BE ABLE TO COMPLETE YOUR FIRST LAB REPORT, RESULTING IN A ZERO ON THIS ASSIGNMENT.
* LAB EXERCISE: Laboratory #1 takes place this week, on Friday.
* LEARNSMART TEXTBOOK REVIEW #1 (Chapters 1 & 3) and REVIEW #2 (Chapter 4): Due next week. You access these reviews through the Textbook CONNECT link that I sent you. Typically the review exercises will be due 11:45pm, the last day of the week of that reading assignment. For week 1 reading, I am giving you an extra week, to get used to the course materials and technology.
* Intro to Micro Homework assignment due next week. See upload in WEEK #2.
* Lab Report #1 next week. See upload in WEEK #2.

**COURSE MATERIALS:**

* LECTURE: [Intro to Microbiology Main Page](http://www.scienceprofonline.org/vmc/intro-microbiology-main.html)
* LECTURE: [History of Microbiology Main Page](http://www.scienceprofonline.org/vmc/history-microbiology-main.html)
* LAB #1: [Microscopy Basics: How to Use a Compound Microscope](http://www.scienceprofonline.org/vmc/vmc-lab/vmc-laboratory-microscopy.html)
* TEXTBOOK READING: Chapters 1 & 3.

**HOMEWORK:**

* There will be no Lab Quiz for Lab #1.

**WEEK #2 (10/30 & 10/31)**

**REMINDERS & ANNOUNCEMENTS:**

* LearnSmart Textbook Review #1 (Chapters 1 & 3) and Review #2 (Chapter 4) is due this week.
* Remember to take the Lab #2 Quiz on Moodle BEFORE we meet for lab this week!
* Lab Report #1 is due THIS week.

**COURSE MATERIALS**

* LECTURE: [Prokaryote Cell Structure & Function Main Page](http://www.scienceprofonline.org/vmc/prokaryotic-cell-main.html)
* LECTURE: [Eukaryotic Cell Structure & Function Main Page](http://www.scienceprofonline.org/vmc/eukaryotic-cell-main.html)
* LAB #2: [Gram Staining & Isolation Streak Plate Method](http://www.scienceprofonline.org/vmc/vmc-lab/vmc-laboratory-gram-stain-isolation-streak.html)
* TEXTBOOK READING: Chapter 4.

**HOMEWORK**

* LEARNSMART TEXTBOOK REVIEW #1 (Chapters 1 & 3) - Covers Week 1 reading assignments. **Due 10/30 before 11:45pm.** Last late date 11/6 before 11:45pm. Log into the Textbook Connect link that I sent you. There will be reviews for the textbook material available to choose from.
* LAB QUIZ - Lab #2: Gram Staining & Isolation Streak Plate Technique. **Available until 10/31 at 11am.** NO LATE SUBMISSIONS ACCEPTED.
* UPLOAD LAB REPORT #1 - Microscopy. **Due 10/31 before 11:45pm**. Last late date 11/7 before 11:45pm.
* UPLOAD HOMEWORK - Intro to Microbiology Assignment. **Due 10/31 before 11:45pm.** Last day to turn in late 11/7 before 11:45pm.
* LEARNSMART TEXTBOOK REVIEW #2 (Chapter 4) - Covers Week 2 reading assignment. **Due 10/31 before 11:45pm.** Last late date 11/7 before 11:45pm. Log into the Textbook Connect link that I sent you. There will be reviews for the textbook material available to choose from.

**WEEK #3 (11/6 & 11/7)**

**REMINDERS & ANNOUNCEMENTS:**

* I will be introducing the Bacteria Classification Spreadsheet this week. You will complete it throughout the semester. You can find the Bacteria Classification Spreadsheet both on the [Virtual Microbiology Main Page](http://www.scienceprofonline.org/virtual-micro-main.html) and the [Meet the Microbes: Prokaryotes Lecture Main Page](http://www.scienceprofonline.org/vmc/prokaryotes-bacteria-types-main.html). **This assignment is due to be uploaded by 12/11 before 11:45pm. MAKE NOTE OF THIS DUE DATE! NO LATE SUBMISSIONS OF THIS ASSIGNMENT WILL BE ACCEPTED**.
* On 10/7 we will complete Prokaryotes: Meet the Microbes and, if time allows, we will review for midterm.

**COURSE MATERIALS**

* LECTURE: [Biological Classification Main Page](http://www.scienceprofonline.org/vmc/biological-classification-main.html)
* LECTURE: [Prokaryotes - Meet the Microbes Main Page](http://www.scienceprofonline.org/vmc/prokaryotes-bacteria-types-main.html)
* LECTURE: [Eukaryotes - Meet the Microbes Main Page](http://www.scienceprofonline.org/vmc/eukaryotic-microbe-types-main.html)
* LAB #3: [Differential Staining & Specialized Media](http://www.scienceprofonline.org/vmc/vmc-lab/vmc-laboratory-differential-stains-specialized-media.html)
* TEXTBOOK READING: Chapter 5.

**HOMEWORK**

* LAB QUIZ - Lab #3: Differential Staining & Specialized Media - **Due 11/7 before 11am**, NO LATE SUBMISSIONS ACCEPTED.
* UPLOAD LAB REPORT #2 - Gram Staining & Isolation Streak Plate. **Due 11/7 before 11:45pm.** Last late date before 11/14 before 11:45pm.
* Rate Your Lab Partner(s) - Lab #1: **Due 11/7 before 11:45pm**. NO LATE SUBMISSIONS ACCEPTED.
* LEARNSMART TEXTBOOK REVIEW #3 (Chapter 5) - Covers Weeks 3 reading assignment. **Due 11/7 before 11:45pm.** Last late date 11/14 before 11:45pm. Log into the Textbook Connect link that I sent you. There will be reviews for the textbook material available to choose from.

**WEEK #4 (11/13 & 11/14)**

**REMINDERS & ANNOUNCEMENTS:**

* **MIDTERM EXAM takes place during lecture time on Friday 9/26.**

**COURSE MATERIALS**

* LECTURE: [Microbial Metabolism & Growth Main Page](http://www.scienceprofonline.org/vmc/microbial-metabolism-growth-main.html)
* LAB #4: [Bacterial Growth Media & Cultures](http://www.scienceprofonline.org/vmc/vmc-lab/vmc-laboratory-bacterial-growth-media-cultures.html) (collect samples)
* TEXTBOOK READING: Chapters 7 & 8.

**HOMEWORK**

* LAB QUIZ - Lab #4: Bacterial Growth Media & Cultures - **Due 11/14 before 11am.** NO LATE SUBMISSIONS ACCEPTED.
* UPLOAD LAB REPORT #3 Differential Staining & Specialized Media - **Due 11/14 before 11:45pm**. Last late date before 11/21 before 11:45pm.
* Rate Your Lab Partner(s) - Lab #2: **Due 11/14 before 11:45pm**. NO LATE SUBMISSIONS ACCEPTED.
* UPLOAD HOMEWORK Radiolab "Rodney vs Death" - **Due 11/14 before 11:45pm.** Last late date 11/21 before 11:45pm.
* LEARNSMART TEXTBOOK REVIEW #4 (Chapters 7 & 8) - Covers Week 4 reading assignments. **Due 11/14 before 11:45pm.** Last late date 11/21 before 11:45pm. Log into the Textbook Connect link that I sent you. There will be reviews for the textbook material available to choose from.

**WEEK #5 (11/20 & 21)**

**REMINDERS & ANNOUNCEMENTS:** None

**COURSE MATERIALS:**

* LECTURE: [Microbial Genetics Lecture Main Page](http://www.scienceprofonline.org/vmc/microbial-genetics-main.html)
* LECTURE: [Virus Structure Main Page](http://www.scienceprofonline.org/vmc/virus-structure-main.html)
* LECTURE: [Virus Life Cycle Main Page](http://www.scienceprofonline.org/vmc/virus-life-cycle-main.html)
* LAB #4: [Bacterial Growth Media & Cultures](http://www.scienceprofonline.org/vmc/vmc-lab/vmc-laboratory-bacterial-growth-media-cultures.html) (examine results). Discuss home microbial control experiment and get supplies.
* TEXTBOOK READING: Chapters 6 & 9.

**HOMEWORK**

* Rate Your Lab Partner(s) - Lab #3: **Due 11/21 before 11:45pm.** NO LATE SUBMISSIONS ACCEPTED.
* UPLOAD HOMEWORK - Radiolab "Patient Zero" Podcast - **Due 11/21 before 11:45pm.** Last date to turn in late 12/5 before 11:45Pm.
* LEARNSMART TEXTBOOK REVIEW #5 (Chapters 6 & 9) - Covers Week 5 reading assignments. **Due 11/21 before 11:45pm.** Last late date 12/5. Log into the Textbook Connect link that I sent you. There will be reviews for the textbook material available to choose from.
* There is no Lab Quiz this week.
* There is no Lab Report due this week.

**THANKSGIVING BREAK! NO CLASS (11/26 – 11/30)**

**WEEK #6 (12/4 & 12/5)**

**REMINDERS & ANNOUNCEMENTS:** None

**COURSE MATERIALS**

* LECTURE: [Viruses - Meet the Microbes Main Page](http://www.scienceprofonline.org/vmc/virus-types-main.html)
* LECTURE: [Immunology Basics - Innate / Acquired Main Page](http://www.scienceprofonline.org/vmc/immunology-innate-acquired-main.html)
* LAB #5: [Microbial Control](http://www.scienceprofonline.org/vmc/vmc-lab/vmc-laboratory-microbial-control.html) (AT HOME experiment version)
* TEXTBOOK READING: Chapters 11 &12.

**HOMEWORK**

* LAB QUIZ - Lab #5: Microbial Control - How to Kill Bacteria - **Due 12/5 before 11am.** LATE SUBMISSIONS NOT ACCEPTED.
* UPLOAD LAB REPORT #4 - Bacterial Growth Media & Cultures - **Due 12/5 before 11:45pm.** Last late date 12/11 before 11:45pm.
* TEXTBOOK CONNECT REVIEW #6 (Chapters 11 & 12) - Covers Week 6 reading assignments. **Due 12/5 before 11:45pm.** Last late date 12/11 before 11:45pm. Log into the Textbook Connect link that I sent you. There will be reviews for the textbook material available to choose from.
* UPLOAD HOMEWORK - RadioLab "Parasites" Podcast - **Due 12/5 before 11:45pm.** Last late date 12/12 before 11:45pm

**WEEK #7 (12/11 & 12/12)**

**REMINDERS & ANNOUNCEMENTS**

* **LAB PRACTICAL EXAM** takes place 10/16, in lab, during your scheduled lab time.
* **LECTURE FINAL EXAM** takes place during lecture time on 10/17. The final is cumulative, over all material that we have covered in lecture.
* This week is our last week of class, and some things are due, particularly if you are turning in any an eligible late assignments. Please pay careful attention to due dates, as there are no exceptions.
* In lecture, 10/16, we will be completing the Immunology lecture, filling out IDEA course evaluation forms and reviewing (if time allows).
* The last date/time to turn in extra credit is 10/17 before 11:45pm. Remember the rules associated with extra credit. They are explained in the syllabus in the top panel of Moodle.

**COURSE MATERIALS**

* LECTURE: [Immunology - Innate / Acquired Main Page](http://www.scienceprofonline.org/vmc/immunology-innate-acquired-main.html) (complete this lecture)
* TEXTBOOK READING: Chapter 14 & 15.

**HOMEWORK**

* TEXTBOOK CONNECT REVIEW #7 (Chapters 14 & 15) - Covers Week 7 reading assignments. **Due 12/11 before 11:45pm.** NO LATE SUBMISSIONS ACCEPTED. Log into the Textbook Connect link that I sent you. There will be reviews for the textbook material available to choose from.
* UPLOAD HOMEWORK - Bacteria Classification Spreadsheet - **Due 12/11 before 11:45pm.** NO LATE SUBMISIONS ACCEPTED.
* UPLOAD LAB REPORT #5 - Microbial Control. **Due 12/12 before 11:45pm.** NO LATE SUBMISSIONS ACCEPTED.
* Rate Your Lab Partner(s) - Lab #4: **Due 12/12 before 11:45pm.** NO LATE SUBMISSIONS ACCEPTED.