

MOLECULAR BIOSCIENCES 101  
INTRODUCTION TO MICROBIOLOGY  
Fall 2008

Course Number: MBios 101 4 credits

Lecture Time: Monday, Wednesday, and Friday 1:10PM - 2:00PM

Lecture Location: Held Aud. – G-3

Textbooks: Lecture: *Microbiology A Systems Approach*  
By Cowan and Talaro – 1st edition

Lab: eLearning Online

Why take MBio 101?

To appreciate the “Unseen Microbial World”

This course will demonstrate the relationship of microbiology to current issues in media, education, health, medicine, modern technology and the environment.

Microbiology is a rich and diverse science that can be challenging and FUN!

Instructor

Dr. Consetta M. Helmick

[helmick@wsu.edu](mailto:helmick@wsu.edu)

Office: Fulmer 628A phone: 335-1601

Office hours: By appointment

Instructor’s Accessibility

Be sure to seek out your instructor and ask questions; never be afraid to approach your instructor. I can only help you if I know you’re having trouble or are confused. Please don’t wait until the end of the semester, speak-up early! Learning involves active participation on your part; be bold, speak-up, ask questions.

Classroom and laboratory behavior

In class you are expected to conduct yourself as a responsible, courteous adult. Disruptive or distracting behavior will not be tolerated; no talking, reading newspapers, playing games on lap top computers, using cell phones (unless it is an emergency), listening to iPods, headphones, sleeping, etc. Disruptive people will be dismissed from class; two dismissals will result in assigned grade of an F for the course. You need to police yourself. If a person in front, behind or beside you are very disruptive and will not take a hint, please inform us so we can stop class and deal with the problem.

Students with Disabilities

Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please visit the Disability Resource Center (DRC). All accommodations MUST be approved through the DRC (Admin Annex Bldg, Room 205). Please stop by or call 509-335-3417 to make an appointment with a disability specialist.

## Academic dishonesty: Lecture and Lab policy

Copying answers from neighbors during lecture/lab exams, offering answers to neighbors during lecture/lab exams/lab quizzes or using notes during any exams, cheating, falsification, fabrication, abuse of academic materials, etc. If this is not clear check the Academic Dishonesty overview at [www.conduct.wsu.edu/default.asp?PageID=343](http://www.conduct.wsu.edu/default.asp?PageID=343)

You must write your own lab reports and extra credits assignments in your own words. Reproducing the exact words of another writer whether a scientist or your classmate is considered plagiarism. If confused check WSU plagiarism website at <http://www.wsulibs.wsu.edu/plagiarism/>

If you are caught using a lab manual or any other assignments from a previous semester you will be expelled from the class with an "F" for the class. If you are repeating the class you must turn in a new lab book with current lab exercises and new assignments.

Any student who violates WSU's Policies on Academic Integrity will receive a grade of "F" for this course without the option to withdraw, and the WSU Office of Student Conduct will be notified of the infraction. In addition, a letter documenting the incident will be given to the student's advisor and the Director of the student's major department.

## YOU WILL DO YOUR OWN WORK in Lecture and Lab.

What you will be doing to get a grade in Micro?

### Lecture Points

4 Lecture exams worth 120 points each	480 points
<u>In Class Assignments - six</u>	<u>30 points</u>
Lecture Total Points	510 points

### Laboratory Points

12 quizzes, worth 15 points each (drop lowest 2)	150 points
Unknown Identification Report	50 points
Comprehensive Lab Final	100 points
Check Off List	20 points
Lab Notebook	30 points
<u>Participation points</u>	<u>20 points</u>
Lab Total points	370 points
Class Total Points	880 points

## Class Grading Scale

Letter grades will be calculated on a straight scale, I do not curve grades. If at any time you want to know your grade in the class, please contact the instructor or your TA or check eLearning.

100 - 93.0%	A	79.9-77.6%	C+
92.9-90.0%	A-	77.5-72.6%	C
89.9-87.6%	B+	72.5-70.0%	C-
87.5-82.6%	B	69.9-67.6%	D+
82.5-80.0%	B-	67.5-60.0%	D
		Below 59.9%	F

## LECTURE REQUIREMENTS

### Lecture Exams

Three 120 point exams will be held in during regular lecture time. You will have 50 minutes to take the exam. The last 120 point exam will be given during finals week. You will have 60 minutes to take the exam. Lecture exams will be based primarily on material covered in lecture. The textbook is great and should be used to clarify and elaborate on material covered in lecture. There may be reading assignments. Exams will consist of multiple choice questions, short answer, diagram, filled in the blank, matching. Exam scores will be on eLearning and exam key will be posted outside the lab G80 Eastlick Hall.

### Make-up exams

If you miss any exams (lecture and/or lab), it is your responsibility to make arrangements with the instructor or TA prior to the missed exam. Only students who have medical excuses, extra curriculum activities, such as sports, dance, theater, music, agricultural, architecture or other WSU activities will be allowed to take a make-up exam. Missed exams/assignments will require the proper excuse forms to be presented to Dr. Helmick. There will be no make-up exam for the last exam.

### Lecture Thinking Assignments

During the semester six thinking assignments will be given. Assignments will be a short series of questions that apply to the material being covered. The assignments will be worth 5 points each. Assignment will be given on Fridays and be due back the following Monday. No Late Assignments will be accepted.

## LABORATORY REQUIREMENTS

All labs meet 2 times a week on Tuesday and Thursday or Wednesday and Friday in Eastlick G80. Check your schedule for your lab assignment.

All laboratory handouts, requirements, schedules, lab policy and such will be gone over in your first lab meeting.

Labs will not meet the week of August 25th

Labs will start the week of September 1<sup>st</sup>. Be sure to print off Lab #1 Safety First

### Laboratory Teaching Assistant's (TA)

Your TA will be your most important friend and mentor in this course. The TA's assigned to instruct the laboratories are graduate students obtaining advanced degrees and are fully competent to answer questions regarding the lecture and laboratory material. Be sure to seek out your TA and ask questions; never be afraid to approach your TA or the instructor. They can only help you if they know you're having trouble or are confused. Please don't wait until the end of the semester, speak-up early!

MOLECULAR BIOSCIENCE 101 Fall 2008  
Tentative Schedule

Material to Be Covered

For First Exam: Welcome to Microbiology 101  
Chapter 1 Humans and the Microbial World  
Chapter 4 Cells Structure Prokaryotes  
Chapter 5 Cell Structure Eukaryotes  
Cell Membranes transport p. 191-196  
Cell Reproduction p. 276-280  
Chapter 2 Chemistry/Macromolecules/Building Blocks  
Chapter 7 Microbial Nutrition

Sept. 1<sup>st</sup> Monday Holiday No Class

Sept. 22<sup>nd</sup> Monday Exam #1

For Second Exam: Chapter 13 Host – Microbe Interactions  
Koch postulates p. 411-412  
Biofilm p. 96  
Vectors p. 404-408  
Hospital p. 409-411 Epidemiology p. 401-404  
Chapter 11 Physical and Chemical Control  
Chapter 12 Drugs Microbes Host

October 20<sup>th</sup> Monday Exam #2

For Third exam: Chapter 14 Nonspecific Host Defenses  
Chapter 15 Specific Immunity  
Chapter 16 Disorders in Immunity  
Chapter 17 Diagnosing Infections

November 17<sup>th</sup> Monday Exam #3

November 24-28 Thanksgiving Day Break No Classes

Fourth Exam: Chapter 6 Viruses – DNA and RNA  
RNA Viruses/Flu /West Nile/AIDS  
Diagnostics/Vaccines/Controls  
Chapter 24 Food Industry and Food borne illness

December 19<sup>th</sup> Friday 3:10-5PM Exam #4

M BIOS 101  
Laboratory Syllabus  
Fall 2008

Laboratory Sections:

Section #2 T/Th	10:35–11:50AM	TA: _____
Section #3 T/Th	1:25-2:40PM	TA: _____
Section #4 T/Th	2:50-4:405PM	TA: _____
Section #5 W/F	2:10-3:25PM	TA: _____
Section #6 W/F	3:35-4:50PM	TA: _____

Teaching Assistant Information:

Name: \_\_\_\_\_  
E-Mail: \_\_\_\_\_  
Office Phone: \_\_\_\_\_  
Office Hours: \_\_\_\_\_

General Lab Information:

Many of the exercises you will perform in pairs, so make a friend or sit with someone you know and can work with for the next 14 weeks.

Lab Supplies: Everyone will get a “bag of tricks”, containing a marking pen, a wax pencil, blotting paper, lens paper, inoculating loop, inoculating needle and matches. Please place your name on your goody bag, label your bench drawer, sign up for a microscope and label your lab notebook.

Lab Classroom behavior: In lab you are expected to conduct yourself as a responsible, courteous adult. Disruptive or distracting behavior will not be tolerated; no talking, reading newspapers, playing games on lap top computers or cell phones, or sleeping, etc. Disruptive people will be dismissed from class; two dismissals will result in assigned grade of an “F” for the course.

Attendance Policy: Third miss and you are OUT!!!!. You will be issued an “F” for the course. If you know you will be missing a lab, you may make up the lab in another section, with TA approval. Please try to work this out in advance and do not make it a habit.

Classroom Behavior: The TA is not your maid; you will clean up your work area and the incubators in which your work materials are located. If you do not clean up after yourself you will be warned and your participation points will be deducted. Disruptive people will also be dismissed from class; two dismissals will result in assigned grade of an “F” for the course.

Microscope Use: The care of the microscope is your responsibility. Sign up sheets for a microscope are on the front of the microscope cabinet. Microscopes will be checked at the end of each lab to ensure proper care and handling of microscopes. If scopes are mishandled, lab points will be deducted from your total points. If the scope is not working properly, please inform the TA before putting it away.

NOTE: Always carry the scope with two hands, one hand on the neck and the other hand on the bottom of the scope.

Never swing the scope when carrying it.

Do not place the scope on the edge of the lab bench; avoid knocking it onto the floor.

Only use lens paper to clean oil off the 100x lens.

Keep the stage and all lenses (except 100x) oil free and clean.

When putting the microscope away: Power off, 10x or objective in place, stage down and centered, clean (oil free), cord wrapped around and dust cover on if present.

How obtain a grade:

10 quizzes, worth 15 points each	150 points
Unknown Identification Report	50 points
Comprehensive Lab Final	100 points
Check off List	20 points
Lab Notebook	30 points
Participation points	20 points
Total points	370 points

Quizzes: Quizzes will be given during the first 5-10 minutes of Thursday and Friday lab. Quizzes will cover that week's lab, lab manual exercise and lab. Twelve quizzes will be given, but the top ten score will be used for your grade. The two lowest quizzes will be dropped

Unknown Report: You will be given an Unknown sample. You will be identifying the sample by using techniques you learn in lab. Think of yourself as a clinical diagnostic lab with a sample you have to identify and give a report to your supervisor. Guideline for the report will be given out as we get closer to that lab.

Comprehensive Final: You will be learning a wide variety of lab techniques and information. The final will consist of a written and practical portion. A study guide will be given out as we reach that time.

Check Off List: You will need to be certified in performing certain laboratory techniques and stains. You will need to perform these techniques and stains for your TA before you can continue in the laboratory. A check off list will provided.

Lab Notebook: You will be keeping a lab notebook, which will have the answers to the study questions at the end of each lab exercise. Plus information about the lab, drawing, and information you would record in lab. Plus a very complete lab book will help you study for the lab final. It will be due at the end of your lab final.

Academic dishonesty: Lecture and Lab policy; consist of copying answers from neighbors during lecture/lab exams, offering answers to neighbors during lecture/lab exams/lab quizzes or using notes during any exams, cheating, falsification, fabrication, abuse of academic materials, etc. If this is not clear check the complicity or misconduct in research (WAC 504-25-310 in Standards of Conduct for Students).

You must write your own lab reports and extra credits assignments in your own words. Reproducing the exact words of another writer whether a scientist or your classmate is considered plagiarism. If confused check WSU plagiarism website.

If you are caught using a lab manual from a previous semester you will be expelled from the class with an "F" for the class. If you are repeating the class you must turn in a new lab book with current lab exercises.

Anyone caught in these activities will be expelled from the lecture and/or lab, assigned a grade of "F" for the course and the student will be prevented from withdrawing from the course by departmental memo to the registrar. In addition, a letter documenting the incident will be given to the student's advisor, the Director of the student's major department, the Dean of the College and the Office of Student Conduct.

## **YOU WILL DO YOUR OWN WORK IN LAB**

Students with Disabilities: Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please visit the Disability Resource Center (DRC). All accommodations MUST be approved through the DRC (Admin Annex Bldg, Room 205). Please stop by or call 509-335-3417 to make an appointment with a disability specialist.

## Laboratory Safety

### Personal Safety:

1. Never place backpacks, bags, purses, cell phones, headphones, jackets, books (except what is needed for the exercise) on your work area. Safe/clean benches, coat hangers and areas are provided for storage of things other than what is needed for lab.
2. You will be using Bunsen burners. Long hair must be tied or clipped back into a ponytail.
3. Food and drink are NOT allowed in the lab. You never eat; chew gum, drink or smoke in lab. All drinks and food will be disposed of or placed in the hallway.
4. Do not place pencils, pens or other objects in your mouth.
5. Never apply cosmetics (lipstick included), replace or fix contact lenses while in lab.
6. Always wear closed-toe shoes. No flip flops, sandals, etc.
7. Wearing the lab coats and/or gloves is optional. Gloves will be provided upon request.
8. Wash your hands prior to and after lab exercise.
9. Because you will be working with "live organisms" inform the TA if you are pregnant, on immunosuppressive drugs, or have any kind of medical condition.
10. Because you will be relying on colors of stains to identify microorganisms, please inform your TA if you are colorblind.

### Microbiological Safety

1. Reports all spills to the TA or lab supervisor to ensure proper cleanup and disinfection of the contaminated area.
2. Report all broken glassware to the TA or lab supervisor to ensure proper cleanup. You must never cleanup broken glass!!!!
3. Never mouth pipette any solution. Proper pipetting devices are provided.
4. Carry culture tubes in racks, bacterial plates and such with caution. Be aware of your surrounding to avoid spills and contaminating you and your classmate.
5. Do not place contaminated lab supplies (inoculating loops, needles, pipettes, etc) on the lab bench.
6. Carry, clean and store the microscope properly properly. Never place a microscope on the edge of lab bench (avoid knocking the microscope off the bench).
7. Never throw contaminated lab supplies and glass into trash cans. Dispose of contaminated supplies in the proper location. The TA will instruct you on proper disposal locations and methods.
8. Never remove bacterial cultures, lab supplies, media or equipment from the laboratory.
9. Label all experiments with your name, date and lab section information

### Emergency Procedures

Locate the following:

Eyewash    Fire Blanket    Fire Extinguisher    First Aid Kit    Safety Shower    Phone

Report all accidents, injuries to the TA or lab supervisor. Do not be embarrassed, your safety comes first.

TA's will inform students of proper safety procedures.

Sign safety explanation form and return to your TA.

Fill in card with the following information:

Name

Email address

Major

Emergency number

One interesting fact about yourself

If you have any questions please ask!! The labs are design for learning, but we like to promote a relaxed interactive open atmosphere. Have fun, think, ask questions and learn!!!!

MBIOS 101  
Check Off List  
Fall 2008

Name \_\_\_\_\_

ID Number \_\_\_\_\_

<u>Technique</u>		<u>Points</u>	<u>TA Initials</u>
Wet Mount -Protozoa	(1 pt)	_____	_____
Simple Stain	(2 pts)	_____	_____
Negative Stain	(2 pts)	_____	_____
Gram Stain - Positive	(3 pts)	_____	_____
Gram Stain - Negative	(3 pts)	_____	_____
Capsule Stain	(3 pts)	_____	_____
Endospore Stain	(3 pts)	_____	_____
Streak for Isolation	(3 pts)	_____	_____
Total Points	(20 pts)	_____	_____

MBIOS 101/Fall 2008  
Student Information

Name: \_\_\_\_\_

Major: \_\_\_\_\_

Year: \_\_\_\_\_

What are your long-term Career Goals?

What do you hope to learn from taking this course?

How do you like to learn?

What would make MBIOS 101 exciting?

Is there anything else you'd like me know about you, as we begin the semester?