

**Microbial Survey, BIO 233, Spring 2016**  
**Lecture Syllabus**  
**BIO 233 LABS DO NOT BEGIN UNTIL WEEK 2 OF THE SEMESTER!**

**Professor:** Dr. Teri Shors  
**Office:** HS 155: e-mail: shors@uwosh.edu  
**Office Hours:** M 1:30-2:30 p.m. WF 12:40-1:40 p.m. or by Appointment.  
Please allow 48 hours for E-mail communications.

**Lecture:** **MWF 8:00 a.m. to 9:00 a.m. Halsey 109**

**Required text for lecture:** The Microbial Challenge 3e by Robert Krasner and Teri Shors  
**Required Laboratory Manual:** Benson's Microbiological Applications: Laboratory Manual in General Microbiology Short Version 13<sup>th</sup> edition  
*Custom Laboratory Manual Prepared for UW Oshkosh*  
*(only available through Reeve Union Bookstore)*

**Other Documents:** A set of **Chalktalk Notes** and other Forms for Lab Reports will be available on D2L at the Lecture Course site under **Course Content** (Laboratory documents). Please print them, **READ them** as needed and bring them with you to lab.

**BIO 233:** This is a 4-credit class. It contains a 3-hour lecture component and a 2-hour laboratory component. You cannot pass this course if you do not attend and participate in the laboratory component of the class.

**Course Description**

This course is a survey of microorganisms, including bacteria, viruses, and some algae, fungi, and invertebrates. Emphasis will be placed upon the health care applications of microbiology and transmission of infectious disease agents. Laboratory will focus on standard microbiologic techniques used in the allied health fields. This course is designed for those students interested in allied health fields, including biology, nursing and medical technology majors. Prerequisite: **one semester of general biology (BIO 105)**.

**D2L**

Please check D2L at least weekly for content, grades posted for this course, special accommodations (e.g. inclement weather). D2L will mainly be used to post the syllabus, podcasts and grades.

**E-mail**

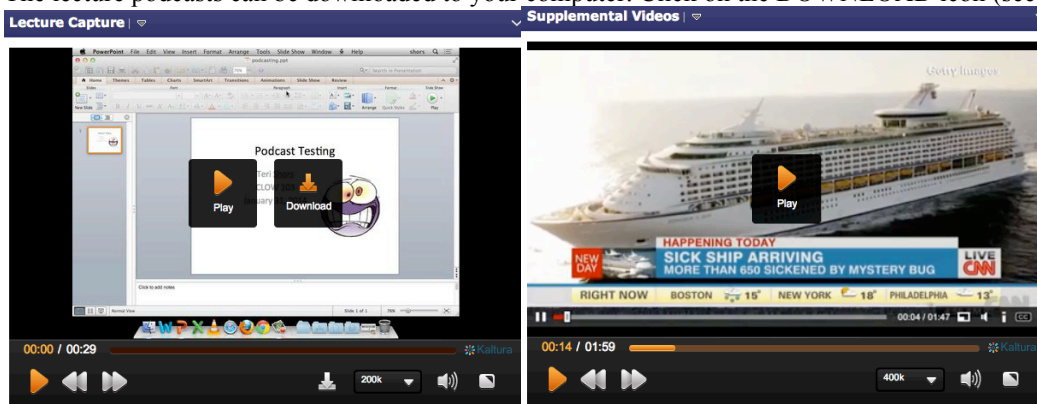
As a UW Oshkosh student, you should be checking your UW Oshkosh e-mail account daily. If there are schedule changes or important class business issues, the instructor will e-blast the class with information so that you are prepared for lectures and labs.

**INCLEMENT WEATHER:** For campus closings, check the following URL: <http://emergency.uwosh.edu/> Updates will be at this emergency site, including the nature of the problem, steps to address the problem and any necessary instructions. For road conditions, refer to 511 Wisconsin Travel Conditions <http://www.511wi.gov/Web/> Lastly, check your e-mail. If the instructor feels she cannot safely make it to campus or feels that the majority of students will not be able to attend the class based on e-mail queries on road conditions etc., other accommodations to learn the material for that day will be made via D2L. Check your e-mail to determine if lecture is canceled and what accommodations have made to accommodate the classroom time missed. The instructor has the capability to podcast lectures from home.

**ACCOMMODATIONS:** If you need special accommodations for the course, please fill out the accommodations form (D2L-Content—Forms) and provide it to the instructor. Thank you.

## **Podcasting and Supplemental Videos**

BIO 233 lecture podcasts will be available on D2L. Podcasts will consist of both a screen capture of PowerPoint presentations along with the voiceover from lecture. Films cannot be podcasted. Podcasts are accessed through D2L. The lecture podcasts can be downloaded to your computer. Click on the DOWNLOAD icon (see image below).



Supplemental video clips must be viewed via D2L and **cannot be downloaded to your computer due to permission rights**. NOTE: there is no download icon for supplemental videos. See image above.

Both sets of videos (lecture capture and supplemental video clips) are on the course HOME PAGE in D2L. If you are **using wireless internet, reduce the pixel size of the video so that it runs better on your laptop**. You can do this by scrolling through the pixel sizes (e.g. the lecture capture video above is set to 200K-the lowest pixel size setting but the video clips are set to 400K). If you are having trouble viewing the podcasts or supplemental videos: 1. Try viewing using a different browser application. 2. Update the system software on your computer. 3. Get help from technical staff on campus.

**GRADING:** Due to privacy regulations, grades cannot be given out over the phone or by e-mail. Grades will be posted in the Gradebook of D2L. **Copies of the exam and your original scantrons will be made available at the Halsey Resource Center (2<sup>nd</sup> floor of Halsey Science Center).** **Scantrons will not be accepted for re-scoring** but please pick them up and find out what you got wrong on your exam. *Answer keys will be posted to D2L (Content).*

**QUESTIONS ABOUT LECTURE GRADES:** If you believe your exam was not scored properly (e.g. less points than you should have) or entered into the Gradebook on D2L correctly, you must notify the instructor in writing **within 1 week after the exam key was available for check-out at the Halsey Resource Center**. Word-process your query, print it, and place in an envelope on the instructor's office door (HS155). All queries must contain the following to be considered:

1. Your First and Last Name
2. Course # (BIO 233)
3. SECTION number
4. Which exam your query is about e.g. Lecture Exam 1.
5. Query

The instructor will then review exams based on your scored responses provided by the Testing Center. An e-mail or phone call asking for more points will **NOT BE CONSIDERED** by the instructor for review. **If any of the above directions are not followed, the instructor will not honor your request.**

**QUESTIONS ABOUT LAB GRADES:** PLEASE CONTACT YOUR **LAB INSTRUCTOR** when you have questions about the lab component of the course. It is imperative that you communicate with the instructor of *your lab section* for queries about the lab quizzes, assignments and material. If you believe your quiz or assignment was not graded correctly or entered into the Gradebook on D2L incorrectly, you must notify the LAB instructor in writing **within 1 week of the exam key was made available at the Halsey Resource Center or having taken a quiz or turned in an assignment**. Word-process your query, print it, place it in an envelope and put it in the Lab

Instructor's Dept. Mailbox located in the Biology Department. All queries must contain the following to be considered:

1. Your First and Last Name
2. Course # (BIO 233)
3. LAB SECTION number
4. The quiz number or assignment in the query.
5. Query

An e-mail or phone call asking for more points will NOT BE CONSIDERED by the instructor for review. **If any of the above directions are not followed, the instructor will not honor your request.**

**EXAM POLICY** Bring and have ready a PHOTO ID to each exam. The exams will not be handed out until your Instructor is satisfied with the seating arrangement and the room is quiet. **You will be present for every scheduled exam.** No one should even think about missing an exam for any but the most extreme emergencies (e.g., grievous illness or injury, death of a loved one). If such an emergency should arise, if you notify me of your intended absence before the start of the exam, and *if* your excuse is then and only then will you be allowed to take the a make-up exam representing the missed material at the Testing Center located in the basement of Polk library. The score earned on the make-up will only be allowed if the above conditions are met. If you miss an exam and these conditions are not met, you will receive a zero for that exam. **Provide the instructor with the Request to Makeup a Missed Exam Form (located on D2L → Content → Forms).**

**GRADING BREAKDOWN**

**There will be three 100 point lecture exams and a 200 point comprehensive final exam.** The format of the exams will be multiple choice (scantron). Grading breakdown for the laboratory component of the course is found on the laboratory syllabus.

**Course Grading Rubric\***

3 Lecture Exams	300 points (100 points each)
1 Final COMPREHENSIVE Exam	200 points
Laboratory Points	420 points
<b>TOTAL Points</b>	<b>920 points</b>

**GRADING:**

<b>A</b>	<b>100% - 94%</b>	<b>4.00</b>
A-	93%-88%	3.67
B+	87%-86%	3.33
B	85%-81%	3.00
B-	80%-78%	2.67
C+	77%-76%	2.33
C	75%-71%	2.00
C-	70%-69%	1.67
D+	68%-66%	1.33
D	65-63%	1.00
D-	62-60%	0.67
F	<60%	0.00

\*Instructor reserves the right to adjust grades of the entire class if necessary (e.g. curve).

### Attendance

While there is no formal requirement, attendance in the lecture is highly recommended. Lectures will include some information not included in the textbook. The instructor may pick and choose parts of chapters that are more relevant for the course. Being at class and asking questions is highly encouraged. Earning a high grade in the class will be difficult, if not impossible, without regular attendance.

**Information from lectures, films, or articles distributed in class are all "fair game" for exam questions.** If you miss a class period, **it is your responsibility to obtain notes from a fellow student.** Punctuality is encouraged; if late arrival is unavoidable, the student should enter the class in a manner that creates as little disruption as possible. This is a one-hour lecture. Getting up in the middle of class to get a drink of water or some other activity is distracting. Please DO NOT do this.

### Course Objectives

- To introduce the student to the relationship between microbes and our lives.
- To familiarize the student with the diversity, structure, and metabolic processes of microorganisms.
- To understand microbial populations and how unwanted microbial growth can be controlled (e.g. microbes that cause food spoilage or disease).
- To understand the role of microbial genetics in grasping such concepts as antibiotic resistance and the development of vaccines.
- To learn how microbes are classified and identified in the laboratory.
- To gain an understanding of how the human body and various microorganisms interact in terms of health and disease (e.g. defense mechanisms, microbial pathogenicity).

**Microbial Survey and Promoting the Liberal Arts:** A liberal arts education refers to studies in a college or university intended to provide general knowledge and develop intellectual capacities. A liberal arts education prepares students to work in a variety of jobs. This is different from other types of education where students develop professional or vocational skills for a specific job. The Pre-Nursing and Science Education Majors are offered courses at UW-Oshkosh within the College of Letters and Sciences (COLS). The COLS emphasizes a liberal arts education. It promotes a liberal arts education model proposed by Carol Geary Schneider, president of the Association of American Colleges and Universities since 1998. Schneider stresses the idea **that ALL students receive an education of lasting value, relevant for the 21st century.** In her model learning should be: 1) "analytical, contextual and holistic thinking;" 2) "effective communication using multiple literacies and forms of expression;" 3) "critical reflection/informed action as citizens, producers, human beings;" 4) "ethical action for local and global communities;" and 5) "integrative learning."

At UW-Oshkosh, you will have a broad exposure to the liberal arts, while focusing on a topic that you are particularly interested in such nursing or the sciences. BIO 233 (Microbial Survey), is a required course in the Nursing Program and an elective course in the Science Education Major. Microbial Survey is important in not only the study of infections and their treatment and prevention, **but also in the unraveling of the most fundamental aspects of biology.** This is because microbes have an intimate relationship with the basic machinery of their host cells. Thus, research on how microorganisms reproduce themselves and spread has given us many insights into the way in which the cells of our bodies function, **leading in turn to a better understanding of the whole organism and of how infective diseases may be prevented or cured.**

### **Behavior in Lecture:**

Class sizes for BIO 233 are quite large, and in order for everyone to hear the instructor and be able to ask questions (and hear the answers) there are some rules that must be followed.

1. **All iPods, cell phones, and other bluetooth devices must be turned off or be silenced. Please remove ear buds.**
2. Please do not talk while the instructor is speaking. Voices in large lecture rooms tend to carry great distances and can drown out the voice of the instructor. Those who sit in the back of the

lecture room often have a particularly difficult time hearing the instructor. As a courtesy to your fellow classmates, please do not talk during the lecture.

3. Please put your phones away so that you can focus on the course lecture.
4. Do not leave early. Do not get up and leave and come back at your leisure throughout the lecture period. By signing up for BIO 233, you are entering into an agreement with the instructor and the other students in the class that you will stay for the full lecture period. **Leaving early is rude to both the instructor and other students, often creates noise that prevents others from hearing the instructor and you may miss important information.**
5. **Please do not arrive late for class. Be prompt. Going to class is no different than going to work. You are expected to be present on time.**

### **Faculty/Student Responsibilities:**

1. As a college student, you are expected to schedule at least two hours of study time outside of class for **each** hour the class meets.
2. Each student is responsible for reading the text and **not** relying entirely on the instructor presenting every detail.
3. Any dishonesty involved with laboratory work or lecture exams will result in a grade of zero.
4. The student is expected to show good listening skills by focusing on the speaker and taking notes by restating in his/her words what is being said.
5. The student is expected to prepare for and take tests on schedule, and to keep a record of all grades to monitor progress (D2L).
6. The student is expected to exhibit a positive attitude by being considerate and polite, cooperating with the instructor and classmates to further their learning goals.

**Study effectively and intelligently.** In other words, don't cram! Plan your study sessions in advance and allow for enough time to adequately review the material. Form a study group with other students if that is an effective study technique for you. Study to understand rather than simply memorize. The greatest hurdle for any student in a microbiology course is the new vocabulary/names of microbes that must be learned. Repetition remains one of the more effective means of memorizing and understanding information, but it is important that you remember two key points. First, start early in the semester and study regularly. If you review continually and on a regular basis, then you will retain more information and improve your understanding. Second, take frequent breaks while studying. The human brain is not a sponge. We can only take in so much information at one time. After approximately 25 – 30 minutes take a break for about 10 minutes. Get up, stretch your legs and perhaps get a drink and then return to studying. Remember the key steps of **repeated review** and **short study intervals**.

**Academic Dishonesty:** Policies are clearly defined at this institution and will be followed. Students are referred to the University of Wisconsin Oshkosh Student Discipline Code as detailed in specific provisions of Chapter 14 of the State of Wisconsin Administrative Code. Any student(s) found in violation of any aspect of the above Code (as defined in sections UWS 14.02 and 14.03) will receive a sanction as detailed in UWS 14.05 and 14.06. Examples of violations include: looking at another student's exam or answer sheet and copying the answers during an exam, talking or whispering to another student during an exam, receiving text messages during an exam on an electronic device, or listening to answers or information recorded on an electronic using earphones during an exam. Sanctions range from a grade of zero for the assignment in question to an oral reprimand to expulsion from the University of Wisconsin Oshkosh.

**Tentative Lecture Schedule, Spring, 2016. The Instructor reserves the right to make changes during the semester.**

Week	Lecture	Date/Weekday	Topic	Text Pages
1	1	Feb 1 M	Introduction to Course	
1	2	Feb 3 W	History: Civil War Medicine and the Birth of Nursing History of Microbiology	Instructor's notes
1	3	Feb 5 F	Emerging Diseases, Healthcare Today Part I: The Challenge: Identifying the Challenge	Instructor's notes and Chapter 1
2	4	Feb 8 M	BIO 233 LABS START THIS WEEK! Part I: The Challenge: Identifying the Challenge	Chapter 1
2	5	Feb 10 W	Identifying the Challenge Cont.	Chapter 1
2	6	Feb 12 F	Identifying the Challenge Cont.	Chapter 1
3	7	Feb 15 M	Identifying the Challenge Cont.	Chapter 1
3	8	Feb 17 W	The Microbial World	
3	9	Feb 19 F	The Microbial World	
4	10	Feb 22 M	Beneficial Aspects of Microbes: The Other Side	Chapter 2
4	11	Feb 24 W	Bacteria	Chapter 3
4	12	Feb 26 F	Bacteria	Chapter 3
5	13	Feb 29 M	Bacteria	Chapter 3
5	14	Mar 2 W	NOVA: Killer on Campus (Bacterial Meningitis)	
5	15	Mar 4 F	Part II Microbial Disease: Concepts of Microbial Disease	Chapter 7
6	16	Mar 7 M	Concepts of Microbial Disease	Chapter 7
6	17	Mar 9 W	<b>Exam 1</b>	
6	18	Mar 11 F	Epidemiology and Cycle of Microbial Disease Review Disease Triangle and Koch's Postulates	Chapter 8
7	19	Mar 14 M	Epidemiology and Cycle of Microbial Disease	Chapter 8
7	20	Mar 16 W	Bacterial Diseases and Current Plagues	Chapters 9 and 16
7	21	Mar 18 F	Bacterial Diseases and Current Plagues	Chapters 9 and 16
		March 20-26th	<b>Spring Break</b>	
8	22	Mar 28 M	Film: FRONTLINE: Hunting the Nightmare Bacteria OR NOVA: Typhoid Mary: The Most Dangerous Woman in America	Chapters 9 and 16
8	23	Mar 30 W	Bacterial Diseases and Current Plagues	Chapters 9 and 16
8	24	Apr 1 F	Bacterial Diseases and Current Plagues	Chapters 9 and 16
9	25	Apr 4 M	Film: PBS: Influenza, 1918 An American Experience (Intro to viruses, this material is on Exam 3)	
9	26	Apr 6 W	<b>Exam 2</b>	
9	27	Apr 8 F	Viral and Prion Diseases and Current Plagues	Chapters 10 and 16
10	28	Apr 11 M	Viral and Prion Diseases and Current Plagues	Chapters 10 and 16
10	29	Apr 13 W	Viral and Prion Diseases and Current Plagues	Chapters 10 and 16
10	30	Apr 15 F	Protozoan, Helminthic, and Fungal Diseases	Chapter 11
11	31	Apr 18 M	Protozoan, Helminthic, and Fungal Diseases	Chapter 11
11	32	Apr 20 W	Part III: Meeting the Challenge: The Immune Response	Chapter 12
11	33	Apr 22 F	Part III: Meeting the Challenge: The Immune Response	Chapter 12
12	34	Apr 25 M	Control of Microbial Diseases	Chapter 12
12	35	Apr 27 W	Control of Microbial Diseases	Chapter 13
12	36	Apr 29 F	Control of Microbial Diseases	Chapter 13
13	37	May 2 M	Partnerships in the Control of Infectious Diseases (new material on final exam)	Chapter 14
13	38	May 4 W	<b>Exam 3</b>	
13	39	May 6 F	Unfinished Business (new material on final exam)	Chapter 17
14	40	May 9 M	FILM: To be Announced (new material on final exam)	
14	41	May 11 W	Final COMPREHENSIVE Exam 5	
14	42	May 13 F	Final Exam Make Up	

BIO 233: Spring 2016  
**Microbial Survey Laboratory Syllabus**  
Location: Halsey 174

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

**BE PREPARED FOR LAB! IF YOU DO NOT HAVE THE LISTED MATERIALS THE FIRST LAB PERIOD OF THE SEMESTER, YOU WILL LOSE 10 LAB POINTS.**

**LABS DO NOT MEET WEEK 1 AND WEEK 14 OF THE SEMESTER!**

BIO 233 Laboratory Instructor Information

Section	Weekday	Time	Instructor	e-mail
001	Monday	9:10-11:10 a.m.	Teri Shors	shors@uwosh.edu
002	Monday	1:50-3:50 p.m.	Mallory Janquart	janquarm@uwosh.edu
003	Wednesday	9:10-11:10 a.m.	Teri Shors	shors@uwosh.edu
004	Thursday	9:40-11:40 a.m.	Vicki Van Deurzen	verbrick@uwosh.edu
005	Thursday	1:20-3:20 p.m.	Vicki Van Deurzen	verbrick@uwosh.edu
006	Friday	9:10-11:10 a.m.	Teri Shors	shors@uwosh.edu
007	Wednesday	1:50-3:50 p.m.	Vicki Van Deurzen	verbrick@uwosh.edu

1. YOU WILL NEED TO PURCHASE THE FOLLOWING:

**Required Lab Guide** from the UW-Oshkosh Bookstore

Custom made for UW Oshkosh from Benson's Microbiological Applications:  
13th Edition, Short Version Special Edition for UW Oshkosh  
McGraw Hill Publishing

The UW Oshkosh Bookstore is the **ONLY** place you will find this. It is a **CUSTOM-MADE** manual.

**1 or 2 black sharpies**  
**personal hand sanitizer (optional)**

2. PRINT the **Laboratory Chalkboard (talk) Notes**. They are available without cost through the internet package, Desire to Learn (D2L). Log on to D2L via the web URL below. These notes will be available at the **BIO 233 lecture site** under the category "Course Content." It will be found as a topic listed under BIO 233 **laboratory documents**.

<http://www.uwosh.edu/d2l> (the server will redirect you to the correct secure page).

**Please print the chalkboard notes and bring it along with the lab manual to every lab period. If you do not have your notes, you will lose 5 points that day from lab. Preparation is key to lab success. By not bringing these notes, you will struggle in the lab. This will affect fellow students and may consume the instructor's time when time needs to be balanced equally among all students in the laboratory.**



## Other Laboratory Class Information:

**QUESTIONS ABOUT LAB GRADES:** Please contact the LAB INSTRUCTOR teaching the section you are in when you have questions about the lab component of the course. The lab instructor grades your quizzes and assignments. It is imperative that you communicate with the instructor of your lab for queries about the lab quizzes, assignments and material.

All lab grades will be posted to D2L by your instructor. If you believe your quiz or assignment was not graded correctly or entered into the Gradebook on D2L incorrectly, you must notify the LAB instructor in writing **within 1 week after grades have been posted to D2L by your lab instructor**. Word-process your query, print it, place it in an envelope and put it in the **Lab Instructor's Dept. Mailbox located in the Biology Department**. All queries must contain the following to be considered:

1. Your First and Last Name (include both names if you recently had a name change)
2. Course # (BIO 233)
3. **LAB SECTION number**
4. The quiz number or assignment in the query.
5. Query

An e-mail or phone call asking for more points will NOT BE CONSIDERED by the instructor for review.

Other information about the lab:

**1. Late Lab Reports will not be accepted. Please STAPLE lab reports. Points can be taken off for unstapled reports.**

**2. There are no make-up quizzes. If you miss a lab, you CANNOT attend another lab section.** There are fire codes to abide to. The labs are full. This lab meets once a week for two hours. Do NOT miss lab. *If you have an emergency and must miss lab, contact your lab instructor before the lab begins. They might be able to make some accommodations depending upon the exercises performed in the lab that day but you CANNOT attend other lab sections.*

**3. For questions regarding the lab, contact the lab instructor teaching the section you are in. Please do NOT contact the lecture instructor unless that instructor also serves as your lab section instructor. Communication is key in life. Communicate with the instructor that grades you regarding the lab component of this course.**

**4. Quizzes:** At the beginning of each laboratory period (with the exception of the first week), there will be short, timed (no more than 10 minutes will be allotted to do this), in-class, **quiz**. **The quizzes are focused on reading the chalktalk notes and briefly reviewing the pages referred to in the laboratory manual regarding the lab exercises. You will be quizzed on laboratory work for that day or work being completed from the prior laboratory. Being prepared for the laboratory is the only way to do well in this class. Quizzes cannot be made up. *Quizzes may be cumulative-- they may ask relevant questions from any previous laboratory.***

**5. Case Studies:** Nearly every lab period has a case study applied to the main concepts used in that lab period. While you do not get credit for working on the case studies, they are good practice for the lab final exam. The lab final exam will include questions of case study format. Work together in groups or on your own on these case studies. Your instructor may choose or not choose to review these in the lab. *Effort should be put into the case studies before the instructors review them.*

**6. Attendance:** You are expected to attend every period and to participate fully in each laboratory experiment. Students unable to attend lab *must notify the lab instructor prior to the laboratory* (phone message to instructor's office or Biology Dept. Office, E-mail). **Labs CANNOT be made up, due to logistical problems.** "Section jumping" will not be allowed.



7. **Lab Reports and Final Project:** This laboratory will be using the scientific method or hypothesis approach. **We will expect that students are proficient in the modest use of statistics and graphical presentation of data.** Certain laboratory reports and the final project will require this skill in order to do well in the class. **For tips on creating bar graphs, printing PowerPoint presentations, and lab reports tips, download and read documents available at Desire To Learn: <http://www.uwosh.edu/d2l>** (the server will redirect you to the correct secure page)

8. **Grading:** The point breakdown for quizzes, lab reports, a final project and exam is listed in the table below.

233 Laboratory Point Breakdown

Specific Date or Week Due	Activity	Total Points
Quizzes	In class quiz (Weeks 2-10) 10 pts. each 1 additional “pop” or unannounced quiz (can occur any time within the first 10 weeks of the semester)	90 pts.
Week 7	Clinical Sample Unknown: API 20E Antibiotic Sensitivity Table	5 pts. 5 pts.
Week 9	Synthetic Epidemic Pet Microbe report due	5 pts. 100 pts.
Week 10	Lab Report: Bacterial Diversity Group Report	15 pts.
<b>Week 13</b>	Final Lab Exam Group Project Poster/Presentation	100 pts. 100 pts.
POINTS LOST	Microscope Maintenance Points lost (5 points per lab period may be lost if microscopes are not cared for properly) If students do not have lab manual, chalktalk notes, or sharpie---5 points per lab may be lost. If students have their cell phone at their bench—5 pts. will be removed from their grade each time they are caught with their cell phone (this behavior breaks safety guidelines).	

TOTAL LAB POINTS.....420 pts.

8. **Academic Dishonesty Policy:** Cheating on an exam, plagiarizing, or any other form of academic dishonesty will be dealt with in accordance with the current UWO Student Discipline Code. The instructor reserves the right to assign a grade of "F" for the course should circumstances warrant.

9. **Common courtesy:** Do NOT bring your cell phone to the lab bench. Please remove earbuds. You will be handling microbes. **There is no need for these items at your bench. Extraneous items could become contaminated at the lab bench while handling microbes. All you need at your bench is your chalktalk notes, a pen or pencil, sharpie and the lab manual.**

10. **100 Point Final lab exam:** This will be a **comprehensive** exam. It is of multiple choice format, **however some questions will have multiple answers.** For full credit, each correct answer must be shaded on the scantron to be scored as a correct answer. A study guide will be provided later in the semester for the lab exam.

**Laboratory Schedule: Microbial Survey BIO 233 Spring 2016**

Week	Date	Title of Experiment	Lab Manual
1	February 1 <sup>st</sup> -5 <sup>th</sup>	NO LABS	
2	February 8 <sup>th</sup> -12 <sup>th</sup>	Orientation to the Microbiology Laboratory Go over SAMPLE QUIZ 1 The Microscope Smear Prep and Simple Stains Aseptic Technique <i>Work on Case Study 1: Meningitis in the Military Barracks</i>	pp. x-xiii pp. 1-19
3	February 15 <sup>th</sup> -19 <sup>th</sup>	<b>IN CLASS: QUIZ 2</b> Handling and Examining Cultures Gram Stain Pet Microbes (this on an ongoing lab and will continue through week 8) <i>Work on Case Study 2: The Wounded Child</i>	pp. 13-25
4	February 22 <sup>nd</sup> -26 <sup>th</sup>	<b>IN CLASS: QUIZ 3</b> Pure Culture Techniques (T-Streak) Diagnostic Microbiology in Action Respiratory Microorganisms (Blood agar plates) Urine Culture Techniques (MAC agar plates) <i>Work on Case Study 3: Katherine the Distracted Medical Technologist</i>	pp. 33-56
5	February 29 <sup>th</sup> -March 4 <sup>th</sup>	<b>IN CLASS: QUIZ 4</b> Biochemical testing: Catalase and Oxidase Mannitol Salts Plates (Salt tolerance and staphylococci) Use of Enzyme-linked immunoassay (ELISA) Test for Group A Rapid <i>Streptococcus pyogenes</i> Identification Start Gas Pak Jars (Effects of Oxygen on Growth) <i>Work on Case Study 4: Mama Mia, Papa Pia, Boy's Got the Diarrhea!</i>	pp. 73-74 pp. 89-90 pp. 77-79 pp. 59-61
6	March 7 <sup>th</sup> - 11 <sup>th</sup>	<b>IN CLASS: QUIZ 5</b> <i>Enterobacteriaceae</i> Identification: The API 20 E System (Clinical Unknown) Biochemical Testing of pets: Fermentations: lactose and mannitol broths Antibiotic Susceptibility Testing on Mueller Hinton Agar ( <i>Serratia marcescens</i> ) Biochemical testing of pets: Pigment production using Mueller Hinton Agar <i>Work on Case Study 5: Diarrhea at the Carnival</i>	pp. 85-88 Figure 13.7 p. 71 pp. 97-100
7	March 14 <sup>th</sup> - 18 <sup>th</sup>	<b>IN CLASS: QUIZ 6</b> Finish API20E—turn in clinical unknown score sheet Finish Antibiotic susceptibility Testing (Measure zones of inhibition) Killing Microbes: Boiling ( <i>Bacillus megaterium</i> ) and Autoclaving ( <i>Bacillus megaterium</i> ) No Case Study this week	pp. 107-111
	March 21-25 <sup>th</sup>	<b>SPRING BREAK</b>	
8	March 28 <sup>th</sup> - April 1 <sup>st</sup>	<b>IN CLASS: QUIZ 7</b> Synthetic Epidemic BEGIN Bacterial Diversity <b>FINISH PET MICROBES</b> <i>Work on Case Study 6: It's in the Dirt!</i>	pp. 113-114
9	April 4 <sup>th</sup> -8 <sup>th</sup>	<b>IN CLASS: QUIZ 8</b> Parasitology: Protozoa and Helminths: Fecal Float/Fecalyzer Fungi: Yeasts and Molds Pet Microbe Report Due Collect Bacterial Diversity Data	pp. 125-153

		<b>Group PROJECT APPROVAL; (Order supplies)</b> <i>Work on Case Study 7: Beaver Fever in Rocky Mountain National Park</i> <i>(LAST CASE STUDY)</i>	
10	April 11 <sup>th</sup> -15 <sup>th</sup>	<b>IN CLASS: QUIZ 9</b> Bacterial Diversity Report Due Group Project <b>EXPERIMENTS Begin</b>	
11	April 18 <sup>th</sup> - 22 <sup>nd</sup>	Group Projects: Collect Data from Experiments	
12	April 25 <sup>th</sup> - 29 <sup>th</sup>	Group Projects Cont.	
13	May 2 <sup>nd</sup> - 6 <sup>th</sup>	<b>Lab EXAM (75 minutes, in class)</b> Group Project Presentations: <b>POSTER SESSIONS</b>	
14	May 9 <sup>th</sup> - 13 <sup>th</sup>	NO LABS Meet	