

SYLLABUS*

BIOL 2900, Sections A & B. Microbiology in Health and Disease (CRN 20706 & 20707) -- Spring 2008

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Office Hours: Tues. 3:00-3:50 pm; Wed. 8:00-8:50 am; or by appointment.
Class: Tues. & Thurs. 8:00-9:15 am, 1025 Bailey Science Center
Laboratory: Tues. & Thurs. 2900 Section A 9:30-10:55 am, 2068 Bailey Science Center
Tues. & Thurs. 2900 Section B 11:00 am-12:25 pm, 2068 Bailey Science Center

Textbook: **MICROBIOLOGY, A HUMAN PERSPECTIVE, Fifth Edition**
by Eugene W. Nester, Denise G. Anderson, C. Evans Roberts Jr.,
and Martha T. Nester
McGraw-Hill 2007

Laboratory Manual: **BENSON'S MICROBIOLOGICAL APPLICATIONS, LABORATORY MANUAL
IN GENERAL MICROBIOLOGY (short version), Tenth Edition**
by Alfred E. Brown
McGraw-Hill, Inc. 2007

Other Materials: calculator
permanent, medium- or fine-tip marking pen (Sharpie) for labeling cultures in lab
one CD for oral presentation
one file folder (or other type of thin, light-weight folder) for handing in assignments
paper clips or stapler/staples for organizing references and assignments

The **OBJECTIVES** of this course are:

1. To help students acquire a basic knowledge of bacteriology, immunology, mycology, parasitology, and virology, with an emphasis on health and disease.
 2. To allow students to gain experience with some basic techniques used for studying microorganisms in the laboratory.
 3. To provide opportunities for students to improve their skills in oral communication.
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SPECIAL NOTES TO STUDENTS:

1. In order to respect the privacy of each student, exam scores and grades will not be posted, given out by telephone, or sent to students by email.
 2. Students are advised to consult the VSU Student Handbook, Undergraduate Catalog, Spring Semester Calendar, Schedule of Classes, & Registration Guide for information about VSU policies and procedures regarding registration, drop/add, and withdrawal. February 28 is midterm. Students are not permitted to withdraw after midterm except in cases of hardship.
 3. Students requesting classroom accommodations or modifications because of a documented disability should discuss this need with the instructor at the beginning of the semester. These students must contact the Access Office for Students with Disabilities, 1115 Nevins Hall. The phone numbers are 245-2498 (voice) and 210-1348 (tty).
 4. Cell phones may not be used during examinations or at any time in class or lab.
 5. Students are responsible for reading and following the Biology Department policy on plagiarism (available online through the departmental web site). Each student must be particularly careful to do his/her own writing on the lab reports that are to be completed individually. Plagiarism will result in a failing grade for the course.
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***This is a tentative syllabus. Changes to this syllabus will be announced during class or laboratory periods.**

BIOLOGY 2900 Microbiology in Health and Disease - Class and Lab Schedule

Date	Topics/Lab Exercises (Additional notes for lab exercises)	Related material in text
Tues. Jan. 8	General course information Introduction to microbiology	Chap. 1
Tues. Jan. 8L	>LAB ORIENTATION >LABORATORY SAFETY, READ HANDOUT & P. IX-XIV LAB MANUAL > <i>Program #1: The Microbial Universe</i> >MICROSCOPE CARE AND USE & MICROSCOPE CHECKLIST (Read before next lab) >EX. 1, MICROSCOPY (Read before next lab; answer questions on p. 9-11) >SUPPL. EX., HANDWASHING Wash your hands before leaving lab!	
Thurs. Jan. 10	Introduction to microbiology Biochemistry for understanding microbiology (Review Chapter 2 on your own)	Chap. 1 Chap. 2
Thurs. Jan. 10L	>LAB ORIENTATION >LABORATORY SAFETY, READ HANDOUT & P. IX-XIV IN LAB MANUAL >MICROSCOPE CARE AND USE & MICROSCOPE CHECKLIST >EX. 5, PROTOZOA, ALGAE, & CYANOBACTERIA Prepare wet mounts of swamp water. Draw examples of protozoa, algae, & cyanobacteria.) Answer questions on pages 44-45, <u>except</u> question 4 on page 44.	
Tues. Jan. 15	Structure of prokaryotic and eukaryotic cells	Chap. 3
Tues. Jan. 15L	>EX. 8, ASEPTIC TECHNIQUE >SUPPL. EX., Examination of stained slides and wet mounts of the yeast <i>Saccharomyces cerevisiae</i> (a fungus) and the bacterium <i>Escherichia coli</i> (Hand in your drawings for this exercise at the end of lab.--10 points)	
Thurs. Jan. 17	QUIZ #1 Structure of prokaryotic and eukaryotic cells	Chap. 3
Thurs. Jan 17L	>FINISH EX. 8, ASEPTIC TECHNIQUE (Complete results/questions, p. 71-72.) >EX. 6, UBIQUITY OF BACTERIA Complete steps 1-7, but omit step 6. >EX. 7, FUNGI (Page 56, Mold Study. You will prepare the plates we will use next week. Work in groups of 4 & expose 2 plates of Sabouraud dextrose agar to air for one hour. Expose one plate inside the building & the other plate outside. Incubate the plates at room temperature for one week.)	
Tues. Jan 22	Eukaryotic microorganisms Multicellular parasites	Chap. 12

Date	Topics/Lab Exercises	Related material in text
Tues. Jan. 22L	<p>>EX. 12, NEGATIVE STAINING (We will use the method in Fig. 12.1. Omit step 4.)</p> <p>>EX. 10, SMEAR PREPARATION (for positive staining)</p> <p>>EX. 11, SIMPLE STAINING (Prepare smears as described on p. 88 of lab manual.) (Complete drawings/questions for these exercises, p. 97-99.)</p> <p>>ADDITIONAL SIMPLE STAIN - MOUTH SWAB (Directions: Use a sterile swab, swab gums, inside of cheek, and teeth. Deposit collected sample onto a dry slide. Allow slide to air dry. Then gently heat fix. Stain with methylene blue for 1 min. Wash gently and blot dry. Examine the slide using the low, high dry, and oil immersion objectives. Look for epithelial cells and oral bacteria. Using the extra space on p. 97, make a drawing of the specimen as it appears with the oil immersion objective.)</p>	
Thurs. Jan. 24	<p>Eukaryotic microorganisms</p> <p>Multicellular parasites</p> <p>Dynamics of microbial growth</p>	<p>Chap. 12</p> <p>Chap. 4</p>
Thurs. Jan. 24L	<p>><i>Program #3: Metabolism</i> (1st section)</p> <p>>FINISH EX. 6, BACTERIA (Complete results/questions, p. 49-51) (Prepare smears from 3 different bacterial colonies from Ex. 6 plates. Use the technique for preparing smears from solid media [see Ex. 10], & stain [see Ex. 11].) Draw the organisms as they appear with the oil immersion objective on the bottom of p. 51.</p> <p>>EX. 7, FUNGI [Mold Study - Do NOT open mold cultures in the lab. Open them only in the biological safety cabinet. You will use transparent tape to prepare slides of two or more different molds. The instructor will describe this procedure. Examine the slides using the low power (10x) objective and the high dry (40x) objective. Draw the specimens at both magnifications on the lab report. Also record a description of the appearance of the fungal colonies. Complete drawings/questions, p. 59-60.]</p>	
Tues. Jan. 29	<p>QUIZ #2</p> <p>Dynamics of microbial growth</p> <p>Microbial metabolism (selected topics)</p>	<p>Chap. 4</p> <p>Chap. 6</p>
Tues. Jan. 29L	<p>>EX. 9, PURE CULTURE TECHNIQUES, STREAK-PLATE METHOD ONLY (We will use Method B, the Quadrant streak)</p> <p>>EX. 14, GRAM STAINING (Prepare smears from nutrient agar slant cultures as described on p.88 of lab manual. Complete drawings/questions, p. 111-114; omit questions 1 & 2 on p. 114.)</p> <p>>DISTRIBUTION OF GENERAL UNKNOWN CULTURES (RECORD THE GENERAL UNKNOWN #) (Prepare subcultures & gram stain. Record dates, work done, drawings, etc. on your own unknown record sheet.)</p>	
Thurs. Jan. 31	<p>Microbial metabolism (selected topics)</p> <p>Prokaryotic Diversity (selected tables)</p>	<p>Chap. 6</p> <p>Chap. 11</p>
Thurs. Jan. 31L	<p><i>Program #3: Metabolism</i> (2nd section)</p> <p>>CONTINUE EX. 9, STREAK-PLATE (Complete results, part 1, page 81; answer questions 1, 3, 6 & 8, pages 82-83.)</p> <p>>EX. 16, ACID-FAST STAINING (Ziehl-Neelsen method) You may also perform this stain on your unknown. (Complete drawings/questions, p. 112-114; omit questions 1 & 2 on p. 114.) Record results for unknown on record sheet.</p>	

Date	Topics/Lab Exercises	Related material in text
Tues. Feb. 5	EXAM 1	
Tues. Feb. 5L	<p>>CONTINUE EX. 9, STREAK PLATE : Repeat streak-plate, using your unknown culture.</p> <p>>EX. 17, MOTILITY DETERMINATION, TUBE METHOD ONLY (You will also test your unknown bacterial culture in this exercise.)</p> <p>>EX. 15, SPORE STAINING (Schaeffer-Fulton Method) You may also perform this stain on your unknown. (Complete drawings/questions, p. 111-114; omit questions 1 & 2 on p. 114.) Record results for unknown on record sheet.</p> <p>>EX. 30, ULTRAVIOLET LIGHT: LETHAL EFFECTS (This exercise will be slightly modified. Due to scheduling issues, we won't look at results until Feb. 14.)</p>	
Thurs. Feb. 7	DNA replication, transcription, & translation	Chap. 7
Thurs. Feb. 7L	<p>>COMPLETE EX. 9, STREAK-PLATE. Record date & description (including size) of colonies of unknown on unknown record sheet.</p> <p>>COMPLETE EX. 17, MOTILITY DETERMINATION, TUBE METHOD (Record results, p. 119. Answer questions 1, 2, 3, 5, & 6, p. 119-120.) Record results for unknown on unknown record sheet.</p> <p>>EX. 20, ENUMERATION OF BACTERIA, POUR-PLATE TECHNIQUE (Omit section entitled "Determination of growth by optical density")</p> <p>>WORK DILUTION PROBLEMS (SEE PAGES IN COURSE PACKET)</p>	
Tues. Feb. 12	DNA replication, transcription, & translation Viruses	Chap. 7 Chap. 13 & 14
Tues. Feb. 12L	<p>>SUPPL. EX., VARIOUS MEDIA (CULTURES FOR DESOXYCHOLATE AGAR AND PHENYL ETHYL ALCOHOL AGAR: <i>Escherichia coli</i>, <i>Staphylococcus aureus</i>, <i>Pseudomonas aeruginosa</i>, & unknown) (CULTURES FOR BLOOD AGAR: <i>E. coli</i>, <i>S. aureus</i>, <i>Bacillus cereus</i>, & unknown)</p> <p>>A throat culture will also be made on a blood agar plate.</p> <p>>FINISH EX. 20, POUR-PLATE (Record results on board & on p. 145. Answer question 1 on p. 146.)</p> <p>>WORK DILUTION PROBLEMS (SEE PAGES IN COURSE PACKET)</p> <p>><u>HAND IN 3 STAPLED ARTICLES IN A FOLDER (FORMAL ARTICLES FROM PEER-REVIEWED, PROFESSIONAL, SCIENTIFIC JOURNALS). These articles will be used to prepare your oral presentation (15 POINTS).</u></p>	
Thurs. Feb. 14	Viruses	Chap. 13 & 14
Thurs. Feb. 14L	<p>>FINISH SUPPL. EX., VARIOUS MEDIA (Complete table with exercise & answer questions.) Record results for unknown on unknown record sheet. Consider the following question: Is the pattern of growth of your unknown on the selective media consistent with the results you obtained in the Gram stain? If not, you will need to repeat the gram stain with a fresh culture.</p> <p>>FINISH EX. 30, ULTRAVIOLET LIGHT: LETHAL EFFECTS (Observe demonstration. Record results & answer questions on p. 201-202.)</p> <p>>WORK DILUTION PROBLEMS (SEE PAGES IN COURSE PACKET)</p>	

Date	Topics/Lab Exercises	Related material in text
Tues. Feb. 19	QUIZ #3 Viruses Bacterial genetics (selected topics)	Chap. 13 & 14 Chap. 8
Tues. Feb. 19L	>SUPPL. EX., ENUMERATION OF BACTERIA ASSOCIATED WITH FRESH PRODUCE (SPREAD-PLATE TECHNIQUE) >WORK DILUTION PROBLEMS >EX. 32, EFFECTIVENESS OF ALCOHOL > <i>Program #9: Microbial Control</i>	Chap. 5 (required reading)
Thurs. Feb. 21	Bacterial genetics (selected topics) Recombinant DNA & biotechnology Classification & Identification of Prokaryotes	Chap. 8 Chap. 9 Chap. 9, 10, & 11
Thurs. Feb. 21L	>FINISH SUPPL. EX., BACTERIA ASSOCIATED WITH FRESH PRODUCE (Record results on board and on your copy of exercise.) >WORK DILUTION PROBLEMS >FINISH EX. 32, EFFECTIVENESS OF ALCOHOL (Record results on board & on p. 209; answer questions on p. 210.)	
Tues. Feb. 26	Classification & Identification of Prokaryotes Control of microbial growth	Chap. 9, 10, & 11 Chap. 5 (required reading)
Tues. Feb. 26L	>VIDEO SEGMENTS ABOUT ANTIBIOTIC RESISTANCE >SUPPL. EX., PLAQUE ASSAY OF A PHAGE SUSPENSION >EX. 34, EVALUATION OF ANTISEPTICS (This exercise will be slightly modified.) >EX. 33, KIRBY-BAUER METHOD >WORK DILUTION PROBLEMS	
Thurs. Feb. 28	QUIZ #4 Antimicrobial medications	Chap. 21 (required reading)
Thurs. Feb. 28L	>VIDEO SEGMENTS ABOUT ANTIBIOTIC RESISTANCE (additional) >FINISH SUPPL. EX., PLAQUE ASSAY OF A PHAGE SUSPENSION (Complete results on board & on your copy of exercise.) >WORK DILUTION PROBLEMS. >FINISH EX. 34, ANTISEPTICS (Record results on board & in lab manual. Answer questions on p. 221.) >FINISH EX. 33, KIRBY-BAUER METHOD (Record results on board & on p.215; answer questions on p. 216.)	
Tues. Mar. 4	Antimicrobial medications Innate immunity	Chap. 21 (required reading) Chap. 15

Date	Topics/Lab Exercises	Related material in text
Tues. Mar. 4L	<p>>EX. 37, CULTURAL CHARACTERISTICS (Fluid thioglycollate medium and gelatin stab only; you will use your unknown for these tests.)</p> <p>>EX. 38, OXIDATION & FERMENTATION TESTS (Omit O/F glucose & VP tests.)</p> <p>>EX. 39, HYDROLYTIC REACTIONS (In this exercise you will use tributyrin agar instead of spirit blue agar. A clear zone around the bacterial growth indicates a positive reaction for lipid hydrolysis on tributyrin agar.)</p> <p>>EX. 40, MULTIPLE TEST MEDIA (We will do <u>ONLY</u> the test for hydrogen sulfide production using SIM medium.)</p> <p>><u>DISCUSSION ABOUT EX. 41 AND THE USE OF BERGEY'S MANUAL</u></p> <p>BERGEY'S MANUAL OF DETERMINATIVE BACTERIOLOGY is on reserve in the library. You may wish to consult it to find out which additional tests would allow you to more specifically identify your unknown.</p> <p>>YOUR LAB REPORT ON THIS GENERAL UNKNOWN (which is due on April 1) should be organized in a thin folder that contains the following: (i) a well-organized and complete copy of your unknown record sheets, including your drawings, (ii) a neat and complete copy of the descriptive sheet (p. 237 in lab manual) with the results of all of the tests performed (do not make your own table—use the one in the lab manual or a photocopy of it), (iii) a statement of your conclusion about the identity of the unknown bacterium (based on EX. 41 and/or <i>Bergey's Manual of Determinative Bacteriology</i>, and (iv) a paragraph explaining & discussing the following: how you arrived at your conclusion, any test results that are inconsistent with your conclusion, & any additional tests that would allow you to more specifically identify your unknown. <u>Do NOT describe the methods used for performing the various tests in your report.</u></p>	
Thurs. Mar. 6	EXAM 2	
Thurs. Mar. 6L	<p>>FINISH EX. 37 (Record results on unknown record sheet.)</p> <p>>FINISH EX. 38, OXIDATION AND FERMENTATION TESTS</p> <p>>FINISH EX. 39, HYDROLYTIC REACTIONS</p> <p>>FINISH EX. 40. (SIM medium only)</p> <p>Record results for unknown on record sheet. Be sure that you understand the chemical basis for each test performed, as well as how each test is interpreted.</p> <p>><u>DISCUSSION ABOUT EX. 41 AND THE USE OF BERGEY'S MANUAL</u></p>	
SPRING BREAK		
Tues. Mar. 18	Adaptive immunity	Chap. 16
Tues. Mar. 18L	<p>><i>Program #12, Microbes and Human Diseases</i></p> <p>STUDENT ORAL PRESENTATIONS</p>	
Thurs. Mar. 20	<p>SUPPL. EX., <i>Staphylococcus aureus</i> experiment</p> <p>Adaptive immunity</p>	Chap. 16
Thurs. Mar. 20L	<p>>SUPPL. EX., <i>Staphylococcus aureus</i> experiment</p> <p>***Lab Exam 1*** (This exam will be based on material covered through Feb. 28)</p>	

Date	Topics/Lab Exercises	Related material in text
Tues. Mar. 25	Applications of immune responses Immunologic Disorders	Chap. 17 Chap. 18 (required reading)
Tues. Mar. 25L	>CONTINUE SUPPL.EX., <i>S. aureus</i> experiment (Record results on board. Set up Kirby-Bauer antibiotic sensitivity tests. Also remember to inoculate plate of tryptic soy agar with presumptive <i>S. aureus</i> isolate for Wednesday's EX. 56.) >WORK ELISA AND IMMUNOFLUORESCENCE PROBLEMS (COURSE PACKET) STUDENT ORAL PRESENTATIONS	
Thurs. Mar. 27	Host-Microbe Interactions Epidemiology	Chap. 19 (required reading) Chap. 20 (required reading)
Thurs. Mar. 27L	>FINISH SUPPL. EX., <i>S. aureus</i> >EX. 56, SLIDE AGGLUTINATION (LATEX) TEST: FOR <i>S. aureus</i> IDENTIFICATION PLEASE NOTE: We will use reagents from a different manufacturer than those described in the lab manual. The instructor will give directions for this test at the beginning of the lab. RECORD RESULTS from <i>S. aureus</i> EX. & latex test on board & in chart. >EX. 54, GRAM NEGATIVE INTESTINAL PATHOGENS (RECORD INTESTINAL UNKNOWN #) >QUESTIONS ABOUT ELISA AND IMMUNOFLUORESCENCE PROBLEMS (COURSE PACKET) STUDENT ORAL PRESENTATIONS	
Tues. April 1	QUIZ #5 Host-Microbe Interactions Epidemiology Skin infections	Chap. 19 (required reading) Chap. 20 (required reading) Chap. 22 (required reading)
Tues. April 1L	>CONTINUE EX. 54, GRAM NEGATIVE INTESTINAL PATHOGENS (triple sugar iron agar & phenol red glucose broth) <u>GENERAL UNKNOWN LAB REPORT DUE</u> STUDENT ORAL PRESENTATIONS	
Thurs. April 3	Skin infections Wound infections Respiratory system infections	Chap. 22 (required reading) Chap. 12, section 12.5 (required reading) Chap. 23 (required reading) Chap. 24 (required reading)
Thurs. April 3L	>CONTINUE EX. 54, GRAM NEGATIVE INTESTINAL PATHOGENS (remaining inoculations) STUDENT ORAL PRESENTATIONS	
Tues. April 8	Respiratory system infections Digestive system infections	Chap. 24 (required reading) (For required reading, see April 15)
Tues. April 8L	>FINISH EX. 54, GRAM NEGATIVE INTESTINAL PATHOGENS (Record results & complete lab report.) <u>Turn in lab report at end of lab.</u> STUDENT ORAL PRESENTATIONS	

Date	Topics/Lab Exercises	Related material in text
Thurs. April 10	EXAM 3	
Thurs. April 10L	>SUPPL. EX., BACTERIOLOGICAL ANALYSIS OF URINE (RECORD URINE UNKNOWN #) STUDENT ORAL PRESENTATIONS	
Tues. April 15	Digestive system infections & foodborne/waterborne illness HIV disease	Chap. 25 (required reading) Chap. 32, p. 795-798; 805-810, req. reading) Chap. 31, p. 786-788; 792-793, req. reading) Chap. 12, section 12.5 (required reading) Chap. 29 (required reading)
Tues. April 15L	>CONTINUE SUPPL. EX., BACTERIOLOGICAL ANALYSIS OF URINE (Set up Kirby-Bauer and inoculate Enterotube.) >EX. 43, ENTEROTUBE II SYSTEM >SUPPL. EX., PROTOZOA AND ANIMAL PARASITES	
Thurs. April 17	QUIZ #6 HIV disease Genitourinary infections Nervous system infections	Chap. 29 (required reading) Chap. 26 (required reading) Chap. 27 (required reading)
Thurs. April 17L	>FINISH SUPPL. EX., BACTERIOLOGICAL ANALYSIS OF URINE & EX. 43, ENTEROTUBE II (Record results on board & complete lab report. Hand in lab report at end of lab.) >FINISH SUPPL. EX., PROTOZOA AND ANIMAL PARASITES STUDENT ORAL PRESENTATIONS	
Tues. April 22	Nervous system infections Blood and Lymphatic infections	Chap. 27 (required reading) Chap. 28 (required reading) Chap. 12, section 12.5 (required reading)
Tues. April 22L	***Lab Exam #2*** (This exam will be based on material covered through April 22.)	
Thurs. April 24	Blood and Lymphatic infections	Chap. 28 (required reading) Chap. 12, section 12.5 (required reading)
Thurs. April 24L	STUDENT ORAL PRESENTATIONS	
Wed. April 30	COMPREHENSIVE FINAL EXAM (10:15 am -12:15 pm)	

ADDITIONAL INFORMATION

Course content: We will not be covering all of the material in the textbook and lab manual. Students are encouraged to read those sections of the textbook and lab manual that pertain to the topics covered. In addition, students are especially encouraged to make use of the illustrations, tables, review questions, and chapter summaries. **Reading of some chapters in the textbook is required, as noted in the schedule. In addition, special assigned readings from the textbook, lab manual or other sources may be announced in class or lab.**

Laboratory:

1. Students are expected to attend ALL laboratory sessions, to be on time at the beginning of the period, and to complete all assigned laboratory exercises. There will be no makeups for the laboratory exercises.
2. Microscopes will be assigned and spot checks will be made to ensure that they are clean and properly stored. Misuse or mishandling of the microscopes will result in the loss of points (20 points per occurrence). After you have finished using your microscope, please consult the "microscope checklist" to be certain that you have followed the proper procedures.
3. Students must prepare for each day's lab work **before** coming to the laboratory. Preparation includes reading the laboratory exercises for the day, as well as any additional materials in the course packet and comments in the syllabus concerning the day's labs. Proper preparation will allow students to complete the exercises in an efficient and informed manner.
4. Each student is expected to record the results of the lab exercises and to answer the related questions, as noted in the syllabus. In some cases, **lab reports** are to be handed in as indicated in the course schedule. If a student misses a portion of the lab work relating to a required lab report, the student's report will be worth a maximum of 85% of the points allotted for the report. **For the drawings (Jan. 15) and the general unknown (April 1), each student must prepare and turn in his/her own work/report.** **For the other reports [intestinal unknown (April 8) and urine unknown (April 17)], students may prepare their lab reports individually, or they may work with their lab partners and turn in joint reports.**
5. Two **lab exams** will be given. They will include dilution problems, material covered during the lab, and assigned questions in the lab manual or course packet. The second lab exam will include lab material covered throughout the course. If a student misses a lab exam, the instructor should be notified promptly. Arrangements for a make-up lab exam must be made within one week after a student misses the lab exam; otherwise, a make-up exam will not be given. The make-up exam will be worth 85% of the points allotted for the regularly-scheduled exam.
6. **Oral presentations:** During the laboratory portion of the course, each student will be required to give an 8- to 9-minute **oral report** on a topic selected from a list provided by the instructor. Two additional minutes will be allotted for answering questions from the audience. Students will draw numbers to indicate the order in which they will select articles and give their presentations. Once a topic is chosen it may not be changed. Students should search databases in GALILEO to find related articles in the scientific literature. Some peer-reviewed, scientific and medical journals are available in the Odum library and/or online. Additional articles may be obtained through interlibrary loan; however, this process takes time. At least three formal articles (including the original article chosen) from PEER-REVIEWED, PROFESSIONAL JOURNALS must be used to prepare the presentation. Only one of these articles may be a review article; the remaining two articles must be primary articles or case studies. Complete, stapled (or paper-clipped) copies of these articles must be placed in a folder & handed in on Feb. 12. These copies will be returned to the student in a timely manner; however, the folder with the articles must again be provided to the instructor on the day of the presentation. Articles must list references at the end, and these references must be cited within the article. Informal articles, Web sites, internet articles or fact sheets, newspaper articles, magazine articles, book reviews, and letters to the editor are NOT acceptable. Students should make every effort to ensure the accuracy of the information in their reports. Should a report contain inaccurate information, the presenter should expect to be questioned about it as well as about the source of the information.

For their presentations, students are encouraged to use Powerpoint software. Students using Powerpoint must use a version that is compatible with the version available in the microbiology lab. If you are in doubt, please bring your Powerpoint presentation to the lab at least one week before the day of your presentation to verify that it will run. If you do not check your presentation ahead of time, you are responsible for having a backup method for showing your illustrations. Full-size print-outs of your Powerpoint slides are useful as backups, since they may be shown using the ELMO projector. Students electing not to use Powerpoint should use other illustrations. Illustrations may be placed on a large poster or they may be shown on the ELMO projector. Transparencies and handouts may also be used.

There will be no makeups for the oral presentations. **On the day of the presentation, the student must turn in a copy of any illustrations (including text) used during the presentation, as well as copies of the three references used.**

ADDITIONAL NOTE: IF YOU WANT A GOOD SCORE ON YOUR PRESENTATION, YOU MUST FOLLOW THE GUIDELINES ON THE PROVIDED EVALUATION FORM (see course packet).

Attendance, participation, and tardiness: In accordance with VSU policy, attendance and participation will be checked in the laboratory and in class. The remainder of this paragraph outlines the lab/oral report attendance policy. Attendance is required during ALL labs and oral report periods. A student who has perfect attendance during laboratory/oral report periods will receive 20 bonus points. A student who misses (or fails to complete) only one laboratory/oral report period will receive 10 bonus points. Missing (or failing to complete) additional laboratory/oral report periods will result in the **loss of points** as follows. Ten points will be deducted for the fourth missed (or incomplete) laboratory/oral report period; 20 additional points will be deducted for the fifth missed (or incomplete) laboratory/oral report period; 40 additional points will be deducted for the sixth missed/incomplete laboratory/oral presentation period, and 50 additional points will be deducted for each subsequent missed/incomplete period. Students who are habitually late for lab or oral report periods will be marked late. Coming late to lab or oral report periods three times will be counted as one absence. A student with more than 6 absences (or a student who fails to complete more than 6 laboratory or oral report periods) will not pass the course. **There will be no makeups for the laboratory exercises or student presentations.**

Examinations and quizzes given during class periods:

1. Examinations 1-4 will cover material presented during both the class and laboratory portions of the course. The first three exams will be worth 150 points each. The final exam will be worth 190 points. Examinations will begin promptly on the times and dates indicated on the class schedule. The final examination will be comprehensive in that it will include material covered throughout the course. Exams 2 and 3 will be comprehensive in that up to 25% of the questions on the exam may cover material presented before any earlier examination. Exams may include questions of the multiple-choice, matching, true-false, short-answer, and essay formats. A student who misses an examination should notify the instructor promptly. Arrangements for a make-up exam must be made within one week after the exam date; otherwise, a make-up exam will not be given. Make-up examinations may consist entirely of questions of the short answer and essay formats. Make-up examinations for exams 1, 2, and 3 will be worth 125 points rather than 150 points each.
2. **STUDENTS ARE REQUIRED TO BRING TWO #2 PENCILS AND ERASERS TO ALL EXAMINATIONS. THE INSTRUCTOR WILL NOT PROVIDE PENCILS.**
3. In addition to the examinations, six short quizzes will be given. Each quiz will be worth 20 points, and the lowest quiz score (which could be a 0 if a student misses a quiz) will be dropped. Thus a student may earn up to 100 points on the quizzes. **STUDENTS MUST BE ON TIME FOR CLASS IN ORDER TO TAKE THE QUIZZES. THERE WILL BE NO MAKE-UPS FOR MISSED QUIZZES.**

Late assignments & failure to turn in assignments:

Please make a calendar noting when assignments and lab reports are due. Turning in an assignment/report 1-4 days late will result in a deduction of 20% of the points for that assignment. Turning in an assignment 5-9 days late will result in a deduction of 50% of the points for that assignment. **No points will be awarded for an assignment that is late by more than 9 days.** Students will not be notified by the instructor for failing to turn in course assignments. Late assignments must be given **DIRECTLY** to the instructor. They may **NOT** be placed in the instructor's mailbox. It is also **NOT ACCEPTABLE** to slide late assignments under the instructor's office door.

Grading: Points for the course are allocated as follows:

<u>EXAM 1</u> (Feb. 5)	150	POINTS
<u>EXAM 2</u> (Mar. 6)	150	POINTS
<u>EXAM 3</u> (April 10)	150	POINTS
<u>EXAM 4</u> (FINAL EXAM-April 30)	190	POINTS
QUIZZES (Jan. 17 & 29; Feb. 19 & 28; April 1 & 17)	100	POINTS
LAB REPORT (Drawings) (Jan. 15)	10	POINTS
REFERENCES FOR ORAL PRESENTATION (Feb. 12)	15	POINTS
LAB EXAM 1 (Mar. 20)	40	POINTS
LAB EXAM 2 (April 22)	45	POINTS
LAB REPORT ON GENERAL UNKNOWN (April 1)	30	POINTS
LAB REPORT ON INTESTINAL UNKNOWN (April 8)	15	POINTS
LAB REPORT ON URINE UNKNOWN (April 17)	15	POINTS
ORAL PRESENTATION (Mar. 18-April 24)	90	POINTS

TOTAL FOR COURSE	1000	POINTS

Students should carefully read the “Attendance, Participation, and Tardiness” and the “Late Assignments and Failure To Turn in Assignments” sections of the syllabus.

There are FOUR REQUIREMENTS TO PASS the course:

1. Do not miss (or fail to complete) any more than 6 laboratories or oral report periods.
2. Complete and turn in all lab assignments and lab reports.
3. Obtain at least 40% of the points for **EACH** lab assignment and lab report.
4. Have a total of 600 or more points for the course.

The grade is "F" for a student who obtains less than 600 total points **or** fails to meet one of the other requirements for passing the course (see above list).

GRADING SCALE: **900-1000, A** **800-899, B** **700-799, C**
 600-699, D **< 600, F**