
Biology Department, College of Science & Mathematics, Valdosta State University
FALL 2022----COURSE SYLLABUS*

BIOL 3100, Sections A & B. Microbiology (CRN 81996 & 81997) -- 4 credit hours
BIOL 5100, Sections A & B Microbiology (CRN 82019 & 83798) – 4 credit hours

Class:	**TR**		**8:00-9:15 am, 2022 Bailey Science Center**
Laboratory:	**TR**	**3100/5100 Section A**	**10:00-11:25 am, 2068 Bailey Science Center**
	TR	**3100/5100 Section B**	**2:00-3:25 pm, 2068 Bailey Science Center**

Instructor:	**Dr. Jenifer Turco**	**Email:**	jturco@valdosta.edu
Telephone:	**229-249-4845**	**Office:**	**2091 Bailey Science Center**

Class and Office Hours: Due to a personal matter, I regret that I will most likely not be available in person for class or office hours during the first few weeks of the semester. In addition, my availability by phone and email will be very limited during the first few weeks. Recordings of lectures have been prepared and posted in BlazeView for your use. Please check BlazeView for updates on my availabiliy. Once I have returned to work, my office hours will be: Tues. & Thurs., 4:15-5:15 pm, and Monday, 12:30 – 1:30 pm. I will also be available for office hours by appointment . Thank you for your understanding during this time.

Laboratory: The laboratory will follow the schedule outlined in the course syllabus. The first week's labs are online (see Lab Module #1), because some students may register late. Dr. James Nienow will be working with you during the first few weeks of lab. Please be flexible and realize that some of the lab work described in the lab modules for the first few weeks may need to be modified.

Course Description: BIOL 3100 Microbiology 3-3-**4 (4 credit hours)** Prerequisites: BIOL 1107K, BIOL 1108K, BIOL 3200, CHEM 1211/CHEM 1211L, CHEM 1212/1212L. Recommended: CHEM 3402. **BIOL 5100 Microbiology** 3-3-**4 (4 credit hours)** Prerequisite: Admission into the graduate program or permission of the instructor. Survey of microbiology covering eubacteria, archaebacteria, protozoa, fungi, algae, and viruses. Includes fundamental techniques, microbial physiology and genetics, biotechnology, medical applications, and applied microbiology. Two 1.5-hour laboratory periods per week.

Required Textbook:

BROCK BIOLOGY OF MICROORGANISMS, Sixteenth Edition
by Michael T. Madigan, Kelly S. Bender, Daniel H. Buckley, W. Matthew Sattley, and David A. Stahl.
Pearson Education, Inc. 2021. PLEASE see below for important details:

The required textbook (see above) is being offered to students as an etextbook (ISBN 9780135845554) via the DAY ONE program developed by Pearson Education, the Bookstore, and VSU. Students may also opt-out of the DAY ONE program and select one of the following alternate options for the textbook (select one): (1) traditional, hard-cover book (ISBN 9780134874401; if available**);** (2) unbound loose-leaf book (if available); (3) "Mastering Microbiology" with Etext for BrockBiology of Microorganisms (if available). Please note that "Mastering Microbiology" is an online resource that is included with the eText in this option. Access to "Mastering Microbiology" is NOT required for the course (although it is included with this particular option), and students may use it if they wish. For additional information about the textbook options, please see the VSU Bookstore Web site.

Special emphasis: **The textbook is required and assignments will be given from the textbook.**

Required Lab Manual: **LAB MANUAL FOR BIOL 3100 MICROBIOLOGY, Valdosta State University, Biology**
McGraw-Hill, 2014. (ISBN 9781308191034)

Other items or abilities that are (or may be) required: (i) proper attire for lab, including close-toed shoes and NO shorts; (ii) a calculator; (iii) a permanent, fine-tip marking pen ("Sharpie") for labeling cultures in lab; (iv) a notebook for organizing and recording lab results (this may be a loose-leaf folder); (v) ability to access BlazeView to obtain/make use of course and lab materials, handouts, recorded lectures, etc.; (vi) ability to complete assignments (typewritten) and/or assessments and submit them online via BlazeView; (vii) ability to complete assignments and/or assessments during in-person classes; (viii) ability to participate in discussions via BlazeView; (ix) ability to give an oral presentation that incorporates the use of PowerPoint software; (x) ability to use VSU Email, Microsoft Word, PowerPoint, and Excel, as well as the ability to save files from these applications in regular and PDF format.

***This is a tentative syllabus. Changes to this syllabus may be announced during class or laboratory periods; alternatively, changes may be posted in BlazeView.**

Additional notes to students:

1. **Please do not come to the classroom or the lab or my office if you are sick.** Also, please note that, if you must be absent due to a quarantine or isolation requirement for COVID-19, you should report this situation via the COVID-19 Self Reporting Link in MyVSU and through the Office of Student Affairs (229-333-5941). You may report other absences through this office as well.

2. Due to the ongoing pandemic, I am requesting that you kindly wear a mask in the classroom and laboratory.

3. **Food and drink may not be consumed in the classroom or in the laboratory.** If you carry a bottle of water or other beverage with you, please be sure that it is sealed and put away **before** you enter the classroom or laboratory.

4. No disruptive behavior will be tolerated during class or lab. A student who engages in disruptive behavior will be asked to leave.

5. In order to respect the privacy of each student, grades will not be physically posted or given out by telephone or email.

6. Students should consult the VSU Student Handbook, Catalog, Semester Calendar, Schedule of Classes, & Registration Guide (all available online) for information about VSU policies and procedures regarding registration, drop/add, and withdrawal. October 6 is midterm, and the last day to withdraw is October 13. Students are not permitted to withdraw after midterm except in cases of hardship.

7. Students with disabilities who are experiencing barriers in this course may contact the Access Office for assistance in determining and implementing reasonable accommodations. The Access Office is located in Farbar Hall. The phone numbers are 229-245-2498 (V), 229-375-5871 (VP) and 229-219-1348 (TTY). For more information, please visit VSU's Access Office or email: access@valdosta.edu.

8. Valdosta State University (VSU) is committed to creating a diverse and inclusive work and learning environment free from discrimination and harassment. VSU is dedicated to creating an environment where all campus community members feel valued, respected, and included. Valdosta State University prohibits discrimination on the basis of race, color, ethnicity, national origin, sex (including pregnancy status, sexual harassment and sexual violence), sexual orientation, gender identity, religion, age, national origin, disability, genetic information, or veteran status, in the University's programs an d activities as required by applicable laws and regulations such as Title IX. The individuals designated with responsibility for coordination of compliance efforts and receipt of inquiries concerning nondiscrimination policies are the University's Title IX Coordinators. The names and contact information for the Title IX Coordinators at VSU are given at the following link: https://www.valdosta.edu/administration/finance-admin/human-resources/employee-matters/sexual-misconduct-title-ix/title-ix-coordinators.php

9. Students are expected to read and adhere to the following: (i) the VSU Student Code of Conduct as d escribed in the VSU Student Handbook and (ii) the Biology Department policy on plagiarism (available online through the departmental Web site). The instructor may use a variety of methods for detecting cheating and plagiarism. Cheating or plagiarism will result in a grade of "0" for the assignment. In addition, the instructor may complete a Report of Academic Dishonesty and submit it to the VSU Student Conduct Office. A student who cheats or plagiarizes on more than one assignment will receive a grade of "F" in the course.

10. At the end of the term, all students will be expected to complete an online Student Opinion of Instruction survey (SOI) that will be available on BANNER. Students will receive an email notification through their VSU email addr ess when the SOI is available (generally at least one week before the end of the term). SOI responses are anonymous to instructors/administrators. Instructors will be able to view only a summary of all responses after they have submitted final grades. While instructors will not be able to view individual responses or to access any of the data until after final grade submission, they will be able to see which students have or have not completed their SOIs. These compliance and non - compliance reports will not be available once instructors are able to access the results. Complete information about the SOIs, including how to access the survey and a timetable for this term is available at SOI Procedures and Timelines (located at http://www.valdosta.edu/academics/academic-affairs/sois/welcome.php).

11. Cell phones, laptop computers, tablets, and other electronic devices may not be used for non-course-related activity at any time in class or lab. Students who wish to use a laptop computer, tablet, or cell phone during class as an aid to following the material being covered must take care not to distract others.

Course Objectives:

After successful completion of this course, the student should be able to:

A. List and describe the three domains of living organisms.
B. List and describe the three types of noncellular infectious agents.
C. List several activities of microorganisms that are beneficial to humans and the environment.
D. List and briefly explain several current challenges in medical microbiology and infectious diseases.
E. Compare and contrast the structure and function of the microorganisms in the domains *Bacteria, Archaea*, and *Eukarya*.
F. List and describe the various strageties used by microorganisms to obtain carbon and e nergy.
G1. Describe the growth (including the growth phases) of a pure culture of bacteria in a closed system, and perform mathematical calculations related to the exponential growth phase. Explain several ways in which bacterial growth can be measured.
G2. Define and describe a biofilm. Discuss the importance and roles of biofilms.
H. Compare and contrast the following processes as they occur in *Bacteria, Archaea*, and *Eukarya*: DNA replication, transcription, and translation.
I. Describe several mechanisms through which gene expression is regulated in bacteria.
J. Describe in detail how viruses replicate.
K. Describe the causes and consequences of mutations.
L. Describe the three mechanisms of horizontal gene transfer in bacteria, and explain their significance.
M. Give examples of the use of microorganisms in genetic engineering and biotechnology.
N. Briefly describe the role of microorganisms in the evolutionary history of life on earth.
O. List and describe a variety of methods and approaches th at are used to detect and identify various microorganisms and noncellular infectious agents.
P. Explain how physical methods and chemical agents (antiseptics and disinfectants) are used for controlling microbes.
Q. State the mechanisms of action of various antibacterial, antifungal, and antiviral medications.
R. Discuss the problem of antimicrobial drug resistance, and explain several ways in which the emergence of drug resistant bacteria can be minimized.
S. Explain what is meant by the human micro biome. Discuss its importance and roles.
T. Briefly describe the role of microorganisms in the cycling of nutrients, using examples from the carbon cycle, the nitrogen cycle, and the sulfur cycle.
U. Describe in detail: (i) the innate defenses of humans a nd (ii) the adaptive immune response of a human to a foreign antigen.
V. Explain how infectious diseases are transmitted, giving specific examples.
W. List the major types of virulence factors observed in pathogenic bacteria, giving specific, detailed exa mples.
X. List and describe several human diseases that are due to specific bacteria, viruses, protozoa, and fungi.
Y. Describe the general course of the disease caused by human immunodeficiency virus (HIV).
Z. Describe the features of the diseases caused by influenza viruses and SARS-Coronavirus-2 in humans.
ZA. Properly handle microorganisms in a biosafety level 2 laboratory.
ZB. Use a compound light microscope to examine various types of microorganisms.
ZC. Keep accurate and complete records of microscopic observations, as well as other laboratory and field work.
ZD. Use culture media to grow bacteria and fungi in the laboratory, and maintain stock cultures.
ZE. Use staining techniques, physiological tests, and rRNA sequences as aids in bacterial identification.
ZF. Use dilutions to solve problems such as determining the colony-forming units per milliliter in a bacterial suspension and the plaque-forming units per milliliter in a viral suspension.
ZG. Formulate an answerable question; develop a hypothesis; design and conduct an experiment; collect, organize and analyze data; and prepare a report with emphasis on the results and discussion.
ZH. Use library and electronic resources to obtain formal scientific articles related to a particular topic in microbiology.
ZI. Read, understand, and be able to discuss scientific articles (primary sources and review articles). Summarize the articles and/or and write a report and/or give a brief oral presentation on a scientific article that is a primary source.

Alignment of Assignments with Course Objectives:
The course objective(s) aligned with each assignment are given on the last page of this syllabus.

Alignment of Course Objectives with Learning Goals/Educational Outcomes:
The **Student Learning Goals for the Core Curriculum in the University System of Georgia (USG)** are available online at http://www.usg.edu/academic_affairs_handbook/section2/C738/. The application of these learning goals in VSU's Core Curriculum is explained at http://www.valdosta.edu/academics/academic-affairs/vp-office/vsu-core-curriculum.php . Each Core Area (A1, A2, B, C, D, and E) has one or more learning goals. In this syllabus they are referred to as VSUA1, VSUA2, VSUB, VSUC, VSUD, and VSUE.

The **Biology Undergraduate Educational Outcomes** (numbered 1-5) are available in the VSU Undergraduate Catalog, and the **Biology Graduate Educational Outcomes** are available in the VSU Graduate Catalog and are numbered 1 through 4. Both catalogs are available online at http://catalog.valdosta.edu/ . In this syllabus the Biology Undergraduate and Graduate Educational Outcomes are designated as B1-B5 (http://catalog.valdosta.edu/undergraduate/academic-programs/sciences-mathematics/biology/) and GB1-GB4 (http://catalog.valdosta.edu/archive/2021-2022/graduate/graduate-degree-programs/sciences-mathematics/biology/ms-biology/), respectively.
The course objectives that are aligned with the USG, VSU and Biology Department Learning Goals/Educational Outcomes are listed next.

USG, VSU or Biology Objective	**Course Objective(s)**
Core Area A1Learning Goal	ZG, ZH, ZI
Core Area A2 Learning Goal	G, ZE, ZF
Core Area B Learning Goal	C, D, M, R, U, V, X, Y, Z
Core Area D Learning Goal	all course objectives
VSUA1	ZG, ZH, ZI
USG, VSU or Biology Objective	**Course Objective(s) (continued from preceding page)**
VSUA2	G, ZF, ZG
VSUB	C, D, M, R, U, V, X, Y, Z
VSUD	all course objectives
B1	ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI
B2	A, B, D, E, H, J, K, L, N, O, R, U, X, Y, Z
B3	A, B, D, E, F, G, H, I, J, K, L, O, P, Q, U, W, X, Y, Z
B4	B, D, H, I, J, K, L, M, O, R, X, Y, Z
B5	C, D, F, R, S, T, V
GB1	all course objectives
GB2	G, ZC, ZF, ZG, ZH, ZI

Additional requirement s for BIOL 5100:
Students who are taking BIOL 5100 Microbiology will have additional assignments. For this semester, it is hoped that these students will be able to complete an additional, extended paper based on the formal scientific literature. Details about the requirements for the paper will be provided by the instructor. **Grading information for BIOL 5100 is given on the last page of the syllabus.**

BIOLOGY 3100/5100. Microbiology – Plans and Class Topics

Note about the order in which course topics will be covered.
The next pages show the topics that will be covered during the lecture portion of the course, along with a general schedule for class meetings and exams. The topics are listed in the general order in which they will be covered. However, the instructor may occasionally need to adjust the order of some topics to facilitate students' understanding of the lab material. The location of related material in the textbook for each topic is also given. **PowerPoint slides will be posted in BlazeView. In addition, links to recordings of in-person lectures will be posted—this will generally be done on a weekly basis.**
However, please realize that technical problems sometimes occur with the lecture recordings.

BIOLOGY 3100/5100. Microbiology – Plans and Class Topics

TOPICS:	**Related material in textbook**
Aug 16, 18, 23, 25, 30; Sept 1, 6 (7 classes)	
General course information; special considerations	
Introduction to Microbiology	
Microorganisms and microbiology	**Chap. 1; Chap. 30 & 33 (selected figs/tables)**
An overview of microbial life	
Microscopes	

Review (on your own) the following topics that you covered in introductor biology & genetics:
Basics of chemistry and biochemistry
DNA structure & replication
Transcription & translation

Cell structure/function	**Chap. 1 (selected fig) , 2, 7 (p. 210-213);** **Chap. 8, 14, 15, 16 (selected figs)** **Chap. 6, 13, 18 (selected figs)**

Please note that, when selected figures are used, page numbers or figure numbers are generally noted in the PowerPoint to make it easier for you to locatethe related information in the textbook.

Nutrition & culture of microorganisms	**Chap. 4**
Eukaryotic microorganisms	**Chap. 18 & 34; Chap. 13 (selected fig)**

Exam (Quiz) 2-Thurs. Sept. 8 (We may not finish all of the information on eukaryotic microorganisms before this exam date.)

Sept 13, 15, 20, 22, 27, 29; Oct 4 (7 classes)
Microbial systematics & Microbial evolution (selected topics)

Microbial systematics; Strategies for identification of microorganisms (with emphasis on prokaryotes)	**Chap. 13**
Microbial identification & clinical microbiology	**Chap. 29 (Fig. 29.4)**
Bacterial diversity	**Chap. 16**
Molecular microbiology	**Chap. 6; Chap. 12 (PCR, p. 355-358)**
Microbial metabolism	**Chap. 3, 14, 15, 16 & 17 (selected topics)**
Microbial growth (includes assigned reading on biofilms)	**Chap. 4, 8, & 20**
Regulation	**Chap. 7**

Exam (Quiz) 3-Thurs. Oct. 6

Oct 13, 18, 20, 25, 27; Nov 1, 3 (7 classes)

Introduction to Viruses	**Chap. 5**
Viruses: Additional information	**Chap. 5; 10 (p. 307); 11; 13 (origin)**

Microbial Genetics

Genetics of *Bacteria & Archaea*	**Chap. 9**
Microbial genomics and other omics	**Chap. 10 & Chap. 19 (p. 625-637)**
Biotechnology & synthetic biology (selected topics)	**Chap. 12**

(We will most likely not have time to cover all of the topics of interest related to microbial genetics.)

BIOLOGY 3100/5100. Microbiology – Plans and Class Topics

RNA Interference & more — **Chap. 9 & 12; Please note that some information in this PowerPoint is not included in the textbook**

Microbial growth control (Assigned reading) — **Chap. 4, 28, & 8**

Microbial symbioses with humans; human microbiome (Assigned reading) — **Chap. 24 is assigned reading; this information is listed as a submodule with the other PowerPointsubmodules; however, there is no specific PowerPoint file because the entire chapter is assigned reading.**

Immunology

Innate immunity (broadly specific)	**Chap. 26**
Adaptive immunity	**Chap. 27-28**
Practical applications of immunology (including vaccines)	**Chap. 28-29**
Microbial identification & clinical microbiology	**Chap. 29 (Fig. 29.4)**

Some online resources are also listed in BlazeView.

Please note that, at the time this syllabus was prepared, myPowerPoint files on immunology had not been revised to incorporate the figures in the 16th edition of the textbook. It is unlikely this will cause a major problem. However, please be aware of this matter when you are reading the16th edition of the textbook and using the PowerPoint files.

Exam (Quiz) 4-Tues. Nov. 8 (We may not finish all of the information on immunology before this exam date.)

Nov 10, 15, 17, 22, 29; Dec 1(6 classes)

Pathogenic microbiology

Human-microbe interactions; pathogenesis	**Chap. 24, 25**
Epidemiology & public health	**Chap. 30**
Microbial diseases (selected topics)	**Chap. 31-34**
HIV	**Chap. 11 & 31**
Influenza	**Chap. 11 & 31**
Human coronaviruses	**Chap. 11 & 31**

Some online resources are also listed in Blazeview.

Exam (Quiz) 5 (Final Exam)-Tues. Dec. 6 (8:00 am - 10:00 am)

A **tentative** schedule for the examinations (quizzes) is below: Please note that "Exam 1" is the short online quiz called "Quiz 1". The approximate relationship of the exams to the course material is indicated in the preceding list of topics.

Exam (Quiz) 2-Thurs. Sept. 8 – 130 points
Exam (Quiz) 3-Thurs. Oct. 6 – 130 points
Exam (Quiz) 4-Tues. Nov. 8 – 130 points
Exam (Quiz) 5 (Final Exam)-Tues. Dec. 6 (8:00 am - 10:00 am) – 190 points

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Important dates: **Sept. 5, Labor Day holiday**
Oct. 10-11, Fall Break
Nov. 23-25, Thanksgiving Break

BIOLOGY 3100/5100. Microbiology – Laboratory

Information for each week's labs will be posted in BlazeView. Students are responsible for printing out this information for the lab from BlazeView, organizing it in their lab notebooks, and bringing it to lab. The information generally will consist of a guide for the week's labs, and may also include supplemental exercises that are not in the lab manual. Students must bring their lab manuals and lab notebooks (including the lab information from BlazeView) to each lab meeting. The instructor may ask to see your lab notebook (with information from BlazeView) and lab manual during any lab meeting.

The lab work for the first week of class (Aug. 16 & 18) will be done independently (online). It includes introductory information, as well as information about handwashing, media preparation, and lab safety. There is a short quiz on lab safety that you will need to complete in BlazeView (Quiz 1). The quiz must be completed by Tuesday morning, Aug. 23 at 9:30 am. **Please see Lab Module 1 (under Lab Work in BlazeView) for details.**

The lab work to be done during the second week of class (Aug. 23 & 25) is extremely important and will be found in **Lab Module 2**. The work on Aug. 23 includes an introduction/orientation to the microbiology lab & lab safety, aseptic technique, and the streak-plate technique. Please be sure to attend this lab unless you are sick or have a serious emergency. On Aug. 25, you will complete the work begun on Aug. 23. In addition, you will learn how to prepare a smear of bacteria and stain the smear. Please see BlazeView for details about this lab work.

The tentative lab schedule is shown below. The labs are listed as modules. However, please be aware that sometimes, work begun in a given lab module will be continued later in the semester. Also, please be flexible and realize that Dr. Nienow may need to modify the lab work early in the semester, depending on his other responsibilities.

Tentative Lab Schedule (See BlazeView for details)

Lab Module 1 – Week of Aug 15 (Safety, Handwashing, Preparation of Culture Media)-Online
Lab Module 2 – Week of Aug 22 (Safety, Aseptic Tech, Streak Plate, rRNA, Simple Staining)
Lab Module 3 – Week of Aug. 29 (Fungi, Microscope, Yeast/bacteria, Negative Stain, Winogradsky)
Lab Module 4 – Week of Sept 5 (Ubiquity of Bacteria; Fungi (microscope work); Gram staining)
Lab Module 5 -- Week of Sept 12 (Bacteria & Produce; Dilutions & Problems; Produce Isolate Streak Plate; Gram Staining)
Lab Module 6 & 7 – Weeks of Sept 19 & 26 (Produce Isolate work; Pathogen oral presentation topic selection; Dilution problems; Bacteria in Yogurt; Work on isolates from yogurt exercise)
Lab Module 8 – Week of Oct 3 (Various Media; Cultural Characteristics/Motility; Hydrolytic & Degradative Reactions; Unknown Produce Isolate)
Lab Module 9 – Week of Oct 10 (Fall Break Week); Plaque Assay (Thurs.)
Lab Module 10 – Week of Oct 17 (Plaque Assay Results; Oxidation & Fermentation Tests; Unknown Produce Isolate)
Lab Modules 11 & 12 – Week of Oct 24 & 31 (Details will be in overview/guide)
Lab Module 13 – Week of Nov 7 (Effectiveness of Alcohol; Evaluation of Antiseptics & Disinfectants)
Nov. 15, 2022: Hand in lab notebook for scheduled lab notebook check.
Lab Weeks of Nov. 14, 21, & 28 - Oral Presentations on Pathogens

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ADDITIONAL INFORMATION:

1. LABORATORY, ETC.

--Please come to class & lab on time.

-- Safety is important in any science lab, and it is particularly important in a microbiology lab. Also, this semester presents special safety concerns due to the ongoing pandemic due to SARS-Coronavirus-2. You must read and follow the provided safety guidelines for the microbiology lab. These include washing your hands with soap and water before you leave the lab.

--Please print your own copy of the Microbiology Laboratory Safety Rules and keep it in your lab notebook. **As noted previously, you will need to complete Quiz 1 (a brief quiz) on these safety rules by Tuesday, Aug. 23, at 9:30 am.**

-- **Food and drink may not be consumed in the classroom or in the lab.** If you carry a bottle of water or other beverage with you, **please be sure that it is sealed and put away (OUT OF SIGHT) before** you enter the classroom or the lab.

--Please read the laboratory exercises for the day and any additional required readings (noted on BlazeView) before coming to the laboratory. Please print your own paper copies of these materials, and bring them, as well as your lab manual and lab notebook, to the lab.

--Please neatly draw and neatly write out your lab results; photographing your results using your cell phone is not advised because you may contaminate your phone. Calculators may be used in lecture or lab. However, you should disinfect your calculator before you leave the lab.Please be aware that calculators and other electronic devices may NOT be used during exams.

--Microscopes will be assigned in lab and spot checks will be made to ensure that they are clean and properly stored. Misuse or mishandling of the microscopes may result in the loss of points Specific directions for using the microscopes safely will be given in lab.

--Each student must record the results of the lab exercises and answer the related questions, as noted in BlazeView. Lab work will be covered on the exams. There may also be some lab assessments/assignments/reports. These will be noted and some will be submitted via BlazeView; whereas, others will be submitted in the laboratory.

--Each student must keep lab records in a well-organized lab notebook. All pages of the notebook must be numbered. The lab notebook must have a "Table of Contents" that includes the titles of all the lab exercises/experiments/work, the dates they were performed, and the pages in the notebook where they are located. The instructor will check lab notebooks at least once during the semester. She may also ask to view students' notebooks and/or lab manuals during any lab.

2. EXAMINATIONS (quizzes) 2-5 will cover material presented during both the class and laboratory portions of the course. The examinations will be given in the classroom and will begin promptly at the beginning of the indicated class periods. The final examination (Exam 5) will be comprehensive in that it will include material covered throughout the course. (However, there will be an emphasis on the more recently covered material.) Exams 3 and 4 will be comprehensive in that up to 25% of the points on the exam may cover material presented before any earlier examination. Exams may include questions of the multiple-choice, matching, true-false, and short-answer formats. Diagrams and occasional essay questions may also be included. 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 may not be given. Make-up examinations may consist entirely of questions of the short answer and essay formats and may be worth fewer points than the regularly-scheduled exams. (**Quiz 1** is a very brief quiz that focuses on safety in the microbiology lab. Each student must complete this quiz by Tuesday, Aug. 23, 2022, at 9:30 am.)

---Please use the rest room before you come to class to take an exam. Should a student need to leave the classroom during an exam, the student's exam will be terminated.

---During examinations, students will be asked to place their bags and books directly under their seats or in the front of the classroom. No hats may be worn during exams.

---Students are cautioned to be certain that cell phones, other electronic devices, and specialty watches are silenced and put away (**OUT OF SIGHT**) during examinatons. **Unless otherwise noted, calculators may not be used during examinations.** Should a cell phone, specialty watch, calculator or other electronic device be seen or heard during an exam, the student's exam will be terminated and the student will receive a score of "0" on the exam.

--Exams will not be returned to students, and students will not be permitted to photograph exams. After grading has been completed, the instructor may bring the exams to one of the lab periods for students to view. **Students must be certa in to put away (OUT OF SIGHT) their cell phones, other electronic devices, pencils, and pens while viewing exams.** An attempt to photograph or modify an exam will be considered cheating, and will result in a grade of "0" on the exam. If a student needs additional time to view an exam, or if a student is absent from lab on the day a particular exam is viewed, the student must make an appointment with the instructor for viewing the exam within one week of the day the exam is viewed in lab.

--Grades on exams and quizzes and other course work will generally be posted in Blazeview for students to view. However, the instructor uses an Excel spreadsheet to calculate the final grades; therefore, final exam grades will not be posted in BlazeView, and final course grades will be posted only in Banner.

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3. JOURNAL ASSIGNMENT: One of the assignments will be to keep an electronic journal related to microbes and this microbiology course. In the journal, you should make at least one entry every few weeks; you should have at least 3 entries in your completed journal. Your first journal entry is due in BlazeView on **Sept. 9 by 7 pm .** After that date, you should regularly submit your updated journal in BlazeView so your latest version is available for the instructor to view. **The second entry is due by Oct 7 at 7 pm; and the third journal entry is due on Nov 4 by 7 pm.**

There are many possibilities for journal entries, and entries do not need to be excessively long. However they must be more than a few sentences in length. A reasonable length might be approximately one typewritten page. Next are some examples of possible journal entries. You could write a paragraph about a bacterium or virus that interests you and what you learned about it using reliable Internet resources (please be sure to provide links to the resources you used). Or you could briefly discuss an interesting article that you found about microorganisms, and provide a link to the article. Or you could write a reaction to some of the information presented in the textbook. Or perhaps, you might have had a question about microorganisms/microbiology, the articles suggested in class, or the class material, and you searched for and found the answer on your own. In this situation, your journal entry could document this work. Another possibility would be to find a news story or newspaper article related to microbiology and write a summary and reaction to the article. If you found errors in the article, you should note them. Or you could find and evaluate an Internet resource that has information about microbiology. Finally, you might locate information about the SARS-Coronavirus 2 pandemic--or another disease outbreak--and react to that information. Of course, there are other possibilities. My hope is that keeping this journal will help you to learn more about microbiology and be more involved with the material throughout the semester. **Journals must be typewritten, and they must include working links to any resources used. If you use the textbook as a resource, please simply note the pages used.** Two additional requirements are: (1) students must use a different topic for each journal entry, and (2) at least one journal entry must focus on a beneficial role(s) of certain microbe(s). Students should avoid selecting journal entry topics that are closely related to their pathogen report topics, or to specifically assigned readings given by the instructor.

4. ORAL PRESENTATION ON A MICROBIAL PATHOGEN:
Each student will prepare a report on a scientific article about a microbial pathogen. Additional information about the report is given in BlazeView. Students will present their reports orally during the specified lab periods; use of PowerPoint software is required for the presentations. Students will select their topics for these presentations by lottery during one of the lab periods. Once a topic is chosen, it may not generally be changed. Students should use the textbook as a starting point to obtain background information. Then they must locate **one formal, peer-reviewed, scientific journal article** about the pathogen. **This article must be a primary source (NOT a review article) that was published in a scientific journal between 2012 and 2022; it must also list references at the end, and the listed references must be cited within the article. The primary source must be between 4 and 20 pages in length. PLEASE NOTE THAT, IN A PRIMARY SOURCE, THE AUTHORS REPORT THE RESULTS OF THEIR OWN EXPERIMENTS, FIELD STUDIES, OR CASE STUDIES. For this assignment, systematic reviews and meta-analyses will not be acceptable as primary sources**. Some students might be able to locate a suitable primary source in "Emerging Infectious Diseases", which is available free online at www.cdc.gov . Additional peer - reviewed, scientific and medical journals are available in the Odum library and/or online (you may search online using GALILEO or PubMed, for example). The article may be obtained through interlibrary loan; however, this

process is not recommended because it takes additional time. **Please select a primary source that you will be able to read and understand. Approximately 2/3 of the report should focus on the primary source; the remaining 1/3 should consist of background information on thepathogen.** Students are required to show and explain at least some of the figures/tables from the paper. Therefore, when you select your reference, be sure that the figures/tables will be easy to present. In addition to your chosen primary source, you may use one or more peer-reviewed, scientific review articles as sources of background information. Web sites, Internet articles or fact sheets, newspaper articles, magazine articles, book reviews, and letters to the editor are NOT acceptable as primary sources for this assignment. Lengthy reports published by the Centers for Disease Control and Prevention, the World Health Organization, or similar agencies may be used as supplemental sources but they are not acceptable as the main reference (which must be a scientific journal article that is a primary source) on which the report will be focused. Students should make every effort to ensure the accuracy of the information in their reports. Questions may be asked if any inaccurate information is included.

5. Format of Assignments and Late Assignments:

Some lab work/reports will be submitted during lab or checked in students' lab notebooks & lab manuals during lab. Students are expected to have their lab notebooks & lab manuals available during each lab.

Some assignments, lab work/reports, and quizzes will be submitted via BlazeView. All assignments and reports to be submitted in BlazeView must be typed, and an assignment or report that consists of multiple pages must be submitted as a single file, unless otherwise specified. Assignments must be readable—please remember that readability may be a problem if you are planning to photograph your assignment, assemble the pages, and submit it via BlazeView. Please check your submitted file to be sure it is complete.

Completion of all assignments, the lab safety quiz (Quiz 1), and reports is required in order to pass the course. If you would like to earn the best possible score on an assignment or lab notebook/lab manual check, you should complete it and submit it on time. Substantial penalties may be imposed for late assignments, depending on the circumstances. For example, the maximum score for an assignment that is 2-4 calendar days late might be 75% of the originally possible points, and the maximum score for an assignment that is 5-7 calendar days late might be 50% of the possible points. Depending on the assignment and the circumstances, students might receive no points for an assignment that is more than 7 days late.

If you encounter difficulties during the semester that affect your ability to attend the class/lab and complete assignments, please be sure that you notify the Office of Student Affairs (see page 2) so they can send a report to the instructor. I will do my best to work with each of you so you can complete the course successfully.

ADDITIONAL COMMENTS

1. We will not be covering all of the material in the textbook and lab manual. Please read the pertinent sections of the textbook and lab manual, and make use of the tables and illustrations. Specific assignments on particular topics in these books may be announced in class or lab, or they may be posted on BlazeView.

2. **Attendance and participation** are important for success in the course. This is particularly true for the laboratory. In accordance with VSU policy, attendance and participation will be checked both in class and in the laboratory. Th e VSU Undergraduate Catalog states, "A student who misses more than 20% of the scheduled classes of a course will be subject to receiving a failing grade in the course." **Please note that the highest possible grade for a student who misses more than 7 laboratory/oral presentation periods will be a grade of "D".**

3. As the instructor, I want you to enjoy learning about microbes during this course! Therefore, I will do my best to work with each of you so you can accomplish your goals in the course. Please feel free to schedule an appointment to meet with me, or to drop by during my office hours.

Grading for BIOL 3100:

Points for the course are allocated as follows:

Introduce yourself…….……..	20 points
Quiz 1 (online)…….	20 points
rRNA assignment…….……..	20 points
Exams 2-5 (quizzes) (both class & lab material) (all course objectives)……..…….……....	580 points
Journal assignment (all course objectives) ...…….…….……....	90 points
Lab notebook/manual (all course objectives)...…….	100 points
Lab & other assignments (all course objectives)…….……	60 points
Report on pathogen (including primary source and PowerPoint) (objectives ZH & ZI)…….….	110 points
TOTAL FOR COURSE	1000 points

There are FOUR REQUIREMENTS TO PASS the course:

1. Complete and turn in all required assignments, lab work, notebook, etc.
2. Participate in class, lab, and discussions.
3. Obtain at least 30% of the points for each assignment, quiz, and 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). Please note that the highest possible grade for a student who misses more than 7 lab/oral report periods is a grade of "D".

GRADING SCALE for BIOL 3100: 900-1000, A; 800-899, B; 700-799, C; 600-699, D; < 600, F

Grading for BIOL 5100:

Points for the course are allocated as follows:

Introduce yourself…….……..	20 points
Quiz 1 (online)…….. .	20 points
rRNA assignment…….……..	20 points
Exams 2-5 (quizzes) (both class & lab material) (all course objectives)……..…….……....	580 points
Journal assignment (all course objectives) ...…….…….……..	90 points
Lab notebook/manual (all course objectives)...…….…….	100 points
Lab & other assignments (all course objectives)…….……	60 points
Report on pathogen (including primary source and PowerPoint) (objectives ZH & ZI)…….	110 points
Extended paper based on formal scientific literature……..……..	200 points
TOTAL FOR COURSE	1200 points

The requirements to pass the BIOL 5100 course are the same as those for BIOL 3100, except that the extended paper is included in Item #1. Please note that the highest possible grade for a student who misses more than 7 lab/oral report periods is a grade of "D".

GRADING SCALE for BIOL 5100: 90-100%, A; 80-89%, B; 70-79%, C; 60-69%, D; <60%, F

The information below was received after the syllabus for BIOL 3100/5100 for Fall 2022 had already been finalized and copies made. It is being made available here for your convenience.

Updated Information for the Course Syllabus

Non-Discrimination and Title IX Statement
Valdosta State University (VSU) upholds all applicable laws and policies regarding discrimination on the basis of race, color, sex (including sexual harassment and pregnancy), sexual orientation, gender identity or expression, national origin, religion, age, veteran status, political affiliation, or disability. The University prohibits specific forms of behavior that violate Title IX of the Education Amendments of 1972. Title IX of the Education Amendments of 1972 prohibits discrimination on the basis of sex in education programs and activities that receive federal funding. VSU considers sex discrimination in any form to be a serious offense. Title IX refers to all forms of sex discrimination committed against others, including but not limited to: sexual harassment, sexual assault, sexual misconduct, and sexual violence by other employees, students or third parties and gender inequity or unfair treatment based on an individual's sex/gender. The designated Title IX Coordinator for VSU is Mr. Darius Thomas. To view the full policy or to report an incident visit: https://www.valdosta.edu/administration/student-affairs/title-ix/

Accommodations Statement:
Students with disabilities who are experiencing barriers in this course may contact the Access Office (https://www.valdosta.edu/student/disability/) for assistance in determining and implementing reasonable accommodations. The Access Office is located in University Center Room 4136 Entrance 5. The phone numbers are 229-245-2498 (V), 229-375-5871. For more information, please visit VSU's Access Office or email: access@valdosta.edu. To request reasonable accommodations for pregnancy and childbirth, contact Christina Kidd, Student Conduct Coordinator at chkidd@valdosta.edu. Please note, you will be required to provide documentation from an appropriately licensed medical professional indicating the requested accommodations are medically necessary.