

---

**Biology Department, College of Science & Mathematics, Valdosta State University  
SPRING 2024---COURSE SYLLABUS\***

---

**BIOL 4010, Section A Topics in Biology II, Human Pathogens: Biology & History (CRN 26752) -- 4 credit hours**  
**BIOL 6010, Section A Topics in Biology II, Human Pathogens: Biology & History (CRN 26753) – 4 credit hours**

**Class:** MW BIOL 4010/6010 Section A 2:00-3:15 pm, 2022 Bailey Science Center  
**Laboratory:** TR BIOL 4010/6010 Section A 2:00-3:25 pm, 2068 Bailey Science Center

---

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

---

**Office Hours:** Mon. & Wed., 12:00 – 1:30 pm; Tues. & Thurs., 4:30 – 5:30 pm; or by appointment.

---

**Course Description:** **BIOL 4010 Topics in Biology II, Human Pathogens: Biology & History 3-3-4 (4 credit hours)**  
Prerequisites: BIOL 1107, BIOL 1107L, BIOL 1108, BIOL 1108L, BIOL 3200, CHEM 1212, and CHEM 1212L; or permission of instructor. **BIOL 6010 Topics in Biology II, Human Pathogens: Biology & History 3-3-4 (4 credit hours)**  
Prerequisite: Admission into the graduate program or permission of the instructor.  
Current knowledge about the interactions between selected human pathogens and their hosts, along with relevant historical information, will be emphasized. Biosafety, biosecurity, and proper handling of pathogens at biosafety level 2 will also be covered. Two 1.5 - hour laboratory periods per week.

---

**Recommended 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 recommended 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.

**Additional recommended book available online through the VSU Odum library:**

**THE POWER OF PLAGUES, Second Edition; by Irwin W. Sherman. ASM Press, Washington, D.C., 2017.**  
<https://ebookcentral.proquest.com/lib/valdosta/detail.action?docID=5042345>

**Required Lab Manual:**

**LAB MANUAL FOR BIOL 3100 MICROBIOLOGY, Valdosta State University, Biology**  
McGraw-Hill, 2014. (ISBN 9781308191034)  
The lab manual is required and assignments will be given from the lab manual.

**Other items or abilities that are (or may be) required for BIOL 4010 & 6010:** (i) a calculator, (ii) ability to access BlazeView to obtain/make use of course materials, handouts, class PowerPoint files, etc.; (iii) ability to complete assignments (typewritten) and/or assessments and submit them online via BlazeView; (iv) ability to complete assignments and/or assessments and submit them during in-person classes/labs; (v) ability to participate in discussions via BlazeView; (vi) ability to give an oral presentation that uses PowerPoint software; (vii) 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; (viii) proper attire for lab, including **close-toed shoes and NO shorts**; (ix) a permanent, fine-tip marking pen (“Sharpie”) for labeling cultures in lab; (x) a notebook for organizing and recording lab results (this may be a loose-leaf folder).

---

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

---

**Special notes to students:**

1. **Please do not come to the classroom or my office if you are sick.** If you must be absent due to illness or a serious emergency, please report your absence through the Division of Student Affairs (Dean of Students Office)  
<https://www.valdosta.edu/administration/student-affairs/absentee-notification-form.php>  
Please also notify me through VSU Email.
2. If you are experiencing symptoms of COVID-19, use the testing available at the Student Health Center; you may also obtain a test at many other locations around town. If you must self-isolate or quarantine, follow the directions provided by Student Health. For additional information, please see the guidance at the following link:  
<https://www.valdosta.edu/administration/student-affairs/student-health/covid-19-health.php>
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. Cell phones, laptop computers, tablets, and other electronic devices may not be used for non- course-related activity at any time in class. 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.  
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. Grades and feedback will be given to students in person or in BlazeView.
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. **Feb 29** is midterm, and the last day to withdraw is **March 7**. Students are not permitted to withdraw after midterm except in cases of hardship.
7. **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) and 229-375-5871. For more information, please visit VSU's Access Office or email: [access@valdosta.edu](mailto:access@valdosta.edu). To request reasonable accommodations for pregnancy and childbirth, please contact Ms. Myia Miller Title IX Compliance officer, at [maburden@valdosta.edu](mailto:maburden@valdosta.edu). Please note, you will be required to provide documentation from an appropriately licensed medical professional indicating the requested accommodations are medically necessary.
8. **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 Ms. Selenseia Holmes. To view the full policy or to report an incident visit: <https://www.valdosta.edu/administration/student-affairs/title-ix/>
9. **Academic Integrity.** Students are expected to read and adhere to the following: (i) the **VSU Student Code of Conduct** (<https://www.valdosta.edu/administration/student-affairs/student-conduct-office/student-handbook.php>) and (ii) the **Biology Department Policy on Plagiarism** (available online through the departmental Web site at <http://www.valdosta.edu/colleges/arts-sciences/biology/documents/resources/PlagiarismPolicy.pdf>). The instructor may use a variety of methods for detecting cheating and plagiarism. One method that will be used to check extended papers submitted by graduate students will be **Turnitin**. For more information on the use of Turnitin at VSU see **Turnitin for Students** (<https://www.valdosta.edu/academics/academic-affairs/turnitin-for-students.php>). Cheating or plagiarism will result in a grade of "0" for the assignment and a grade of unsatisfactory ("U") for the course. In addition, the instructor may complete a Report of Academic Dishonesty and submit it to the VSU Student Conduct Office.

Please note that content generated by an Artificial Intelligence third-party service or site (AI-generated content) may not be used in writing your paper (graduate student) or preparing your oral presentation(all students) in this course. Use of such content will be considered cheating.

10. **SOI Statement:** 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 through SmartEvals. Students will receive an email notification through their VSU email address when the SOI is available (generally at least one week before the end of the term). SOI responses are anonymous to instructors/administrators, and they will be able to access results only after they have submitted final grades. Before final grade submission, instructors will not be able to see any responses, but they can see the percentage of students who have or have not completed their SOIs. While instructors will not be able to see student names, an automated system will send a reminder email to those who have yet to complete their SOIs. Students who withdraw or drop a course will also be sent invitations to complete the Dropped Course Survey. Complete information about the SOIs, including how to access the survey, is available on the [SOI Procedures webpage](#).

11. **Basic Mental Health Statement:** As a student, you may experience a range of challenges that can interfere with learning, such as strained or violent relationships, death and loss, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities. VSU services are available and treatment does work. You can learn more about confidential mental health services available on campus at <https://www.valdosta.edu/hopeconnect>

12. Materials in this course are presented to students in an educational context for their personal use and study only and should not be shared, distributed, or sold in print, or digital formats, outside the course without the express written permission of the instructor.

-----

-----

### **Course Objectives:**

**After successful completion of BIOL 4010/6010, 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 and describe a variety of methods and approaches that are used to detect and identify various microorganisms and noncellular infectious agents.
  - D. Explain how physical methods and chemical agents (antiseptics and disinfectants) are used for controlling microbes.
  - E. State the mechanisms of action of various antibacterial, antifungal, and antiviral medications.
  - F. Discuss the problem of antimicrobial drug resistance, and explain several ways in which the emergence of drug resistant bacteria can be minimized.
  - G. Describe: (i) the innate defenses of humans and (ii) the adaptive immune response of a human to a foreign antigen.
  - H. For each pathogen covered, describe the microbe and explain how it is transmitted, its pathogenesis, virulence factors, treatments, prevention, whether a vaccine(s) is available, and relevant historical information.
  - I. List and describe the different biosafety levels (1-4). State the importance of biosecurity in work with pathogens.
  - J. Use library and electronic resources to obtain formal, peer-reviewed scientific/historical articles related to a particular course-related topic.
  - K. Read, understand, and discuss formal, peer-reviewed, scientific and historical articles (primary sources and review articles). Summarize the articles and give an oral presentation based on the references.
  - L. Properly handle microorganisms in a biosafety level 2 laboratory.
  - M. Use a compound light microscope to examine various types of microorganisms.
  - N. Use culture media to grow bacteria and fungi in the laboratory.
  - O. Keep accurate and complete records of laboratory work.
  - P. 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.
  - Q. Read, understand, and discuss scientific/historical articles (primary sources and review articles). Summarize the articles.
  - R. For BIOL 6010, write an extended paper on selected, scientific/historical articles on a course-related topic.
-

**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/](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 for this course are aligned with the following USG, VSU, and Biology Department Learning Goals/Educational Outcomes: Core Areas A1, A2, B, D, and E Learning Goals; VSU A1, A2, B, D, and E Learning Goals; Biology B1, B2, B3, B4, & B5 Educational Outcomes, and Graduate Biology GB1& GB 2 Educational Outcomes.

**Additional requirements for BIOL 6010:**

Students who are taking BIOL 6010 will have additional assignments. For this semester, these students will be able to complete an additional, extended paper based on the formal scientific /historical literature. Details about the requirements for the paper are given on the last page of the syllabus. **Grading information for BIOL 6010 is also given on the last page of the syllabus.**

**BIOLOGY 4010/6010. Human Pathogens: Biology & History – 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. **PowerPoint slides will be posted in BlazeView.** The lab modules are also listed in this schedule. Some modifications may be necessary in the lab schedule.

**Day/Date            Topics**

**Mon/Jan 8 & Wed/Jan 10**

- General course information; special considerations
- Introduction to Microbiology & Infectious Agents
- Cellular and non-cellular infectious agents
- An overview of microbial life

**Review (on your own) the following topics that you covered in introductory biology:**

**Basics of chemistry and biochemistry**

**DNA structure & replication**

**Transcription & translation**

**Tues/Jan 9 & Thurs/Jan 11**

**Lab Module 1 – Week of Jan 8 (Safety, Handwashing, Preparation of Culture Media)-  
Online**

Day/Date	Topics
Mon/Jan 15	<b>Martin Luther King Jr. Day (holiday)</b>
Wed/Jan 17	Microscopes & brief history of microbiology Cell structure/function Nutrition & culture of microorganisms (in part) <b><u>Determine order of selecting topics for oral presentations(number lottery)</u></b>
Tues/Jan 16 & Thurs/Jan 18	<b><u>Lab Module 2 – Week of Jan 15</u></b> (Safety, Aseptic Tech, Streak Plate, rRNA, Simple Staining) (rRNA exercise is optional for BIOL 4010/6010)
Mon/Jan 22 & Wed/Jan 24	Cell structure/function Nutrition & culture of microorganisms (in part) Eukaryotic microorganisms
Tues/Jan 23 & Thurs/Jan 25	<b><u>Lab Module 3 – Week of Jan 22</u></b> (Fungal Culture, Microscope, Yeast/bacteria, Negative Stain, Winogradsky)
Mon/Jan 29	Eukaryotic microorganisms <i>Histoplasma capsulatum</i> and <i>Candida auris</i> <b><u>Alexander Fleming &amp; the Discovery of Penicillin (assigned reading)</u></b>
Wed/Jan 31	<b>Exam 1</b>
Tues/Jan 30 & Thurs/Jan 1	<b><u>Lab Module 4 – Week of Jan 29</u></b> (Fungi-microscopic observation; Gram Staining)
Mon/Jan 5 & Wed/Jan 7	Introduction to infectious diseases & the immune system How viruses replicate <b><u>Select topics for oral presentation on Monday, Feb. 5</u></b>
Tues/Jan 6 & Thurs/Jan 8	<b><u>Lab Module 5 – Week of Feb 5</u></b> ( <i>Candida albicans</i> lab; <b>Plaque assay of a phage suspension (tentative)</b> ; Use of mammalian cell culture for studying host-pathogen interactions) <b><i>Please pick up two sterile, 50-ml, plastic tubes for collecting natural water sample to be used in lab on Tues, Feb. 13.</i></b>
Mon/Jan 12	Microbial identification & clinical microbiology <i>Staphylococcus aureus</i> & <i>Streptococcus mutans</i>
Wed/Jan 14	<i>Vibrio cholerae</i> & cholera
Tues/Jan 13 & Thurs/Jan 15	<b><u>Lab Module 6 – Week of Feb 12</u></b> (MPN; <i>Staphylococcus aureus</i> & <i>Streptococcus mutans</i> ) <b><i>Please bring the natural water sample you collected in two sterile, 50-ml, plastic tubes to lab on Tues., Feb. 13)</i></b>
Mons/Jan 19	<i>Shigella</i> species (shigellosis & bacillary dysentery)
Wed/Jan 21	<i>Salmonella</i> species and serotypes (salmonellosis, enteric fevers, & typhoid fever)
Tues/Jan 20 & Thurs/Jan 22	<b><u>Lab Module 7 – Week of Feb 19</u></b> ( <i>Salmonella</i> & <i>Shigella</i> , Gram negative intestinal pathogens)

Day/Date	Topics
Mon/Feb 26	<i>Proteus mirabilis</i> & <i>Escherichia coli</i> Pathogenic strains of <i>Escherichia coli</i> Enterohemorrhagic <i>Escherichia coli</i> Enterotoxigenic <i>Escherichia coli</i>
Wed/Feb 28	<i>Klebsiella pneumoniae</i> <i>Streptococcus pneumoniae</i>
Tues/Feb 27 & Thurs/ Feb 29	Lab Module 8 – Week of Feb 26 (Urinary tract infection; capsule stain)
Mon/Mar 4	<b>Exam 2</b>
Wed/Mar 6	<i>Rickettsia prowazekii</i> (epidemic typhus, Brill-Zinsser disease, & sylvatic typhus) <i>Rickettsia akari</i> <b><u>List of references for oral presentation is due in BlazeView by 9 pm</u></b>
Tues/Mar 5 & Thurs/Mar 7	Lab Module 9 – Week of Mar 4 (Kirby-Bauer Technique; discussion of case studies)
SPRING BREAK	
Mon/Mar 18	<i>Mycobacterium leprae</i> (leprosy or Hansen’s disease) <i>Mycobacterium tuberculosis</i> (tuberculosis)
Wed/Mar 20	Student oral presentation-- Edward Livingston Trudeau (tentative) Student oral presentation--Howard T. Ricketts (tentative) Student oral presentation-- Selman A. Waksman, Albert Schatz, and streptomycin (tentative) Student oral presentation-- <i>Coxiella burnetii</i> —outbreak in the Netherlands (tentative)
Tues/Mar 19 & Thurs Mar 21	Lab Module 10 –Week of Mar 18 (Acid fast stain; discussion of practical applications of immunology)
Mon/Mar 25	<i>Treponema pallidum</i> & syphilis / Paul Ehrlich and salvarsan
Wed/Mar 27	<i>Bacillus anthracis</i> & anthrax
Tues/Mar 26 & Thurs/Mar 28	Lab Module 11-- Week of Mar 25 (Endospore stain; UV and heat sensitivity tests; discussion of practical applications of immunology (continued))
Mon/April 1	<i>Yersinia pestis</i> (plague)
Wed/April 3	<i>Plasmodium</i> species (malaria) Yellow fever virus & yellow fever <b><u>Mosquito-borne diseases and the Panama Canal—assigned reading</u></b>  Student oral presentation--Brief history of the Centers for Disease Control and Prevention (tentative) Student oral presentation--Carlos Finlay (tentative) Student oral presentation--U.S. Army Yellow Fever Commission (tentative)
<b>Continued on next page.....</b>	

---

**Day/Date**      **Topics**

---

.....continued from preceding page

**Tues/April 2 & Thurs/April 4**    Lab Module 12 – (Week of April 1) (Activity of disinfectants/antiseptics against microbes; to be announced)

**April 4: Hand in lab notebook (& manual if you have records & information in it) for scheduled lab notebook check.**

---

**Mon/April 8**      **Exam 3**

**Wed/April 10**    Polioviruses & poliomyelitis  
Influenza viruses  
Student oral presentation—[The influenza pandemic of 1918 \(tentative\)](#)

**Tues/April 9 & Thurs/April 11**    Lab Module 13 – Week of April 8 (Activity of disinfectants/antiseptics against microbes; to be announced)

---

**Mon/April 15**    Rabies virus & rabies  
Measles virus & measles  
Student oral presentation—[Louis Pasteur and development of a rabies vaccine \(tentative\)](#)

**Wed/April 17**    History of biological warfare & bioterrorism (assigned reading will be given)  
Human immunodeficiency virus & AIDS (acquired immunodeficiency syndrome)  
  
Student oral presentation -- [Randy Shilts \(author of the book, “And the Band Played On: Politics, People, and the AIDS Epidemic”\)](#) -- (tentative)  
Student oral presentation—[Francisella tularensis:history & transmission \(tentative\)](#)

**Tues/April 16 & Thurs/April 18**    Lab Module 14 -- Week of April 15 (Activity of disinfectants/antiseptics against microbes; to be announced)

---

**Mon/April 22 & Wed/April 24**

Variola viruses & smallpox  
Student oral presentation--[History of variolation \(Asia, Europe, and the U.S.\) \(tentative\)](#)  
Student oral presentation--[Edward Jenner: Vaccination with cowpox for prevention of smallpox \(tentative\)](#)  
Student oral presentation--[Donald A. Henderson and how smallpox was eradicated \(tentative\)](#)

Spongiform encephalopathies  
Student oral presentation-- [D. Carlton Gajdusek and kuru \(tentative\)](#)  
Student oral presentation-- [Scrapie \(tentative\)](#)

Student oral presentation—[Brief history of the World Health Organization \(WHO\)](#)

**Tues/April 23 & Thurs/April 25**    Lab Module 15 -- Week of April 22 (Activity of disinfectants/antiseptics against microbes; to be announced)

---

**Exam 4 (Final Exam)-Tues. April 30 (2:45 pm – 4:45 pm)**

---

---

## **BIOLOGY 4010/6010. 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 to check your lab work/records during any lab meeting.

The lab work for the first week of class (**Jan 9 & 11**) will be done independently (online). It includes introductory information, as well as information about handwashing, media preparation, and lab safety. **Please see Lab Module 1 (under Lab Work in BlazeView) for details.**

The lab work to be done during the second week of class (**Jan 16 & 18**) is extremely important and will be found in **Lab Module 2** in BlazeView. The work on **Jan 16** 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 **Jan 18**, you will complete the work begun on **Jan 16**. 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. The lab modules are also listed along with the lecture topics (see p. 4-7).

---

### **Tentative Lab Schedule (See BlazeView for details)**

**Lab Module 1 – Week of Jan 8** (Safety, Handwashing, Preparation of Culture Media)-**Online**

**Lab Module 2 – Week of Jan 15** (Safety, Aseptic Tech, Streak Plate, rRNA, Simple Staining) (rRNA exercise is optional for BIOL 4010/6010)

**Lab Module 3 – Week of Jan 22** (Fungal Culture, Microscope, Yeast/bacteria, Negative Stain, Winogradsky)

**Lab Module 4 – Week of Jan 29** (Fungi-microscopic observation; Gram Staining)

**Lab Module 5 – Week of Feb 5** (*Candida albicans* lab; **Plaque assay of a phage suspension (tentative)**; Use of mammalian cell culture for studying host-pathogen interactions)

**Lab Module 6 – Week of Feb 12** (MPN; *Staphylococcus aureus* & *Streptococcus mutans*)

**Lab Module 7 – Week of Feb 19** (*Salmonella* & *Shigella*, Gram negative intestinal pathogens)

**Lab Module 8 – Week of Feb 26** (Urinary tract infection; capsule stain)

**Lab Module 9 – Week of Mar 4** (Kirby-Bauer Technique; discussion of case studies)

**SPRING BREAK**

**Lab Module 10 – Week of Mar 18** (Acid fast stain; discussion of practical applications of immunology)

**Lab Module 11 – Week of Mar 25** (Endospore stain; UV and heat sensitivity tests; discussion of practical applications of immunology (continued))

**Lab Module 12 – Week of April 1** (Activity of disinfectants/antiseptics against microbes; to be announced)

**April 4: Hand in lab notebook (& manual if you have records & information in it) for scheduled lab notebook check.**

**Lab Module 13 – Week of April 8** (Activity of disinfectants/antiseptics against microbes; to be announced)

**Lab Module 14 – Week of April 15** (Activity of disinfectants/antiseptics against microbes; to be announced)

**Lab Module 15 – Week of April 22** (Activity of disinfectants/antiseptics against microbes; to be announced)

---

### **ADDITIONAL INFORMATION:**

1. **LABORATORY.** Safety is important in any science lab, and it is particularly important in a microbiology lab. You must read and follow the provided safety guidelines. These include washing your hands with soap and water before you



leave the lab. Please keep a copy of the Microbiology Laboratory Safety Rules in your lab notebook. Food or drink may not be consumed in the microbiology lab, and should not be brought into the lab. If you are carrying a drink with you, please make sure it is closed and put away (out of sight) before you enter the microbiology lab. .

--Please read the laboratory exercises for the day and any additional required readings (noted in 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.

--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 keep lab records in a well-organized lab notebook. In addition, students must incorporate class data into their lab notebooks as soon as it is available. 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 number of the lab module is not sufficient for a title), 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' lab records, notebooks and/or lab manuals during any lab.

--Please neatly draw and write out your lab results. Photographing your results using your cell phone is possible, but 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.

-- Lab work will be covered on the regular class exams. There may also be a few lab assessments/assignments/reports. Some of these may be submitted via BlazeView; whereas, others may be submitted or checked in the laboratory.

2. **EXAMINATIONS** 1-3 (140 points each) will cover material presented during both class and lab. The examinations will be given in the classroom and will begin promptly at the beginning of the indicated class periods. The final examination (Exam 4-180 points) 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 2 and 3 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. Short-answer questions may be a very common type of question on the exams. 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.

---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 examinations. **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 class periods for students to view. **Students must be certain 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 class 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 class.

--Grades on exams 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.

---

3. **ORAL PRESENTATION DURING CLASS:** Each student will give an oral presentation on a topic related to this course. The format and length of the report will be determined once the class enrollment is finalized. To prepare their reports, students must use reliable sources. Peer-reviewed articles in the scientific and historical literature must be used. These articles must cite references within the text, and they may include primary sources and review articles. In addition, books and reliable Web sites may be used.

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.

**There are three graded items associated with the oral presentation:** (1) A list of references with working links to Web sites, books, or the full text of each article, must be uploaded into BlazeView. The list must include at least the title and authors of each article, book, or Web site that will be used in preparing the presentation. If you are using references from GALILEO, you must use the permalink for each reference. (Other links from GALILEO will not work for the instructor.) This reference list is worth 25 points, and it must be submitted in BlazeView by **March 6 by 9 pm**. This list must be updated if you add additional references between your first submission and the day you give your presentation. (2) On the day you give your oral presentation, you must submit your **PowerPoint slides**, as well as **any notes used** during the presentation, to the appropriate discussion in BlazeView. The PowerPoint slides and notes are worth an additional 25 points. (3) The oral presentation itself will be worth an additional 80 points. Please be aware that you may not read notes from a cell phone, tablet, or laptop computer during your presentation—your notes must be on index cards or a few sheets of paper. **Special emphasis: you may NOT read your presentation from one or more of your sources/references.**  
**An Evaluation form for the oral presentation will be posted in BlazeView.**

4. **Format of Assignments and Late Assignments:**

Some assignments and lab work/reports may 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. In addition, please promptly check any feedback given in BlazeView by the instructor. This will help you to know if there might have been a problem with your assignment or its submission.

Completion of all assignments is required in order to pass the course. If you would like to earn the best possible score on an assignment or lab work/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.

**There will be no makeups for the oral presentations except in the event of a documented, serious emergency.**

---

**ADDITIONAL COMMENTS**

1. Assigned reading may be given from the scientific/historical literature, lab manual, or other resources. Specific assignments may be announced in class or lab, or they may be posted on BlazeView.

2. **Hardships & Difficulties.** If you encounter hardships/difficulties during the semester that affect your ability to attend the class and complete assignments, please be sure that you notify the Office of Student Affairs (229-333-5941) so they can send a report to the instructor. I realize that some of you may have challenges, and I will do my best to work with each of you so you can complete the course successfully. However, please realize that I will expect you to do your best as well. Also, please be aware that, if hardships or other factors interfere with your ability to attend class/lab and complete assignments, you might need to retake this course during a future semester. Please be sure you read the information about class attendance and late assignments.

3. **Attendance, Participation & Tardiness.** **Attendance and participation** are important for success in the course. In accordance with VSU policy, attendance and participation will be checked. The VSU Undergraduate Catalog states:

“Whether online or face-to-face, a student who misses or does not participate in more than 20% of the scheduled course activities could be subject to receiving a failing grade in the course.” Tardiness for lab and leaving lab early will be noted during lab. Students who habitually arrive late for lab or leave lab early may be marked absent the fourth and subsequent times they arrive late or leave early. **Please note that the highest possible grade for a student who misses or fails to complete more than 6 laboratory periods will be a grade of “D”.**

**4. As the instructor, I want you to enjoy learning 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 4010:**

**Points for the course are allocated as follows:**

Introduce yourself (online, discussion).....	20 points
Exams 1-4 (all course objectives).....	600 points
Oral report during class (objectives J & K).....	130 points
Lab work/notebook/manual (all course objectives) (due in lab).....	250 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, exam, 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 6 lab periods is a grade of “D”.

**GRADING SCALE for BIOL 4010: 900-1000, A; 800-899, B; 700-799, C; 600-699, D; < 600, F**

**Grading for BIOL 6010:**

**Points for the course are allocated as follows:**

Introduce yourself (online, discussion).....	20 points
Exams 1-4 (all course objectives).....	600 points
Oral report during class (objectives J & K).....	130 points
Lab work/notebook/manual (all course objectives) (due in lab).....	250 points
<u>Extended paper (objective R).....</u>	<u>200 points</u>
TOTAL FOR COURSE	1200 points

The requirements to pass the BIOL 6010 course are the same as those for BIOL 4010, except that the extended paper is included in Item #1 (see above). Please note that the highest possible grade for a student who misses more than 6 lab periods is a grade of “D”.

**GRADING SCALE for BIOL 6010: 90-100%, A; 80-89%, B; 70-79%, C; 60-69%, D; <60%, F**

**BIOL 6010 students only--Extended paper:**

Each student in BIOL 6010 will select a course-related topic for an extended paper in consultation with the instructor. The topic chosen for the paper must be submitted in BlazeView and it must not be closely related to the topic chosen for the oral report. The paper must be typed in a 12- point font, double-spaced, and be approximately 7 pages in

length. A separate title page (an 8<sup>th</sup> page) that has the topic, the student's name, the date, and a summary (approximately 300 words), must also be included. Please check the line spacing in Word (or other word processing program) and be sure that extra space is not inserted below each line. Margins must be set at 1 inch on all sides of the page. The last (9<sup>th</sup>) page should be the "Literature Cited" (References) section.

Three peer-reviewed, primary sources from the formal scientific/historical literature (published between 2010 and 2024) must be used in writing the paper. These articles may not include the article(s) being used for the student's oral presentation. Up to 4 review articles may also be used in addition to the primary sources; however, the review article(s) should be used for background information and must not be the main focus of the paper. **PLEASE NOTE THAT, IN A PRIMARY SOURCE, THE AUTHORS REPORT THE RESULTS OF THEIR OWN EXPERIMENTS, FIELD STUDIES, CASE STUDIES, OR OTHER RESEARCH.** A primary source will often have a Materials and Methods section. **For this particular assignment, systematic reviews and meta-analyses will not be acceptable as primary sources.** If you are in doubt about what constitutes a primary source, please consult the instructor. Complete PDF copies of the chosen articles must be submitted in BlazeView, and each PDF file must be labeled as a primary source or a review article. You must also prepare a list of your references with working links to the full text or PDF of each article; this list must include at least the title of each article and it must label each article as a primary source or a review article. If you are inserting a link from GALILEO, you must use the permalink; other links from GALILEO will not work for the instructor. The main focus of the paper should be the three primary sources. It is expected that the student will critically discuss the three primary references.

Turnitin will be used to assess plagiarism. (Plagiarized papers will receive a score of 0.) No direct quotations, tables or figures from the sources are permitted in the paper. Your sources must be cited within the text using the Council of Science Editors "Name-Year" format, and a "Literature Cited" section must be prepared and added as a ninth page. Guidelines for citations are available online at <https://writing.wisc.edu/handbook/documentation/doccse/nameyear/> . This resource is part of the University of Wisconsin-Madison Writer's Handbook. Please add the digital object identifier (DOI; <https://www.doi.org/> ) at the end of each reference in the "Literature Cited" section whenever possible.

Below are the "due dates" for the different parts of this assignment:

Topic submission in BlazeView: Thurs. Jan 18, 2 pm

Submission of references (PDF files) in BlazeView: Thurs. Feb. 8, 9 pm

Submission of list of references with working links: Thurs. Feb. 8, 9 pm

Submission of extended paper in BlazeView: Thurs. Mar. 21, 9 pm