Nashville State Community College
STEM Division
Biology Program

2018 Master Course Syllabus

BIOL 2230 Microbiology

(This master course syllabus template is a general guide for providing an overview of each course offered at Nashville State. Each instructor will further clarify specific criteria for grading, classroom procedures, attendance, exams and dates, etc. on his/her individual course syllabus. Prompts for individual adaptations are italicized and in parentheses; faculty should remove or replace these prompts when creating master syllabi and their own individual syllabi if they have not been removed previously.)

Course Information:

Course Title: BIOL 2230 Microbiology
Credits: 4
Class Hours: 3 lecture and 3 lab hours

Course Description:

This is a comprehensive course that stresses applied microbiology and the roles of microbes in health and disease. Topics include microbial structure, growth, metabolism, genetics, ecology, and systematics with emphasis on the pathology of bacteria, viruses, fungi, and protozoa.

Prerequisite: Level 2 placement in English, Math and Reading.

Instructor Information:

Name:
Email:
Office Phone:
Office Location:
Office Hours:

Required Textbook(s) & Other Materials:

Textbook ISBN: 9780134261928
Laboratory Atlas (optional)
Laboratory Notebook
A hardcover composition book such as National Blank Book Co. #53-008 is required. Be sure the book is a bound book and not a spiral notebook, 3-ring binder, etc.

Black Sharpie Marker
This permanent marker will be used to label all of your lab materials (plates, slides, etc.). Sharpies can be purchased at any office supply store. These cannot be provided for you.

Once enrolled, all students should verify that they have the correct textbook and materials information by consulting the D2L/NS Online shell for the course. If you are registered with the Access Center and require an alternate format for the textbook and other course materials, please contact the Access Center at 615-353-3721, 615-353-3741, or accesscenter@nscc.edu.

Course Outcomes:
Upon successful completion of this course, students should be able to:

- Explain the biochemical composition of microbes, historical advancements in microbiology, how microbes reproduce and carry out essential life processes, and environmental requirements needed for their survival.
- Discuss epidemiology, how diseases spread and other factors contributing to emerging and reemerging diseases.
- Categorize human-microbe interactions, in the context of both pathogenic and non-pathogenic organisms and mechanisms by which microbial growth can be detected and controlled.
- Demonstrate a basic understanding of immunology and host defense, including the key cellular components and their functions.
- Explain various diseases and mechanisms by which each specific microbe causes disease and assess how it can be controlled.
- Apply information on microbes in food, industry, evolution, etc. to current topics in microbiology.
- Arrange and record experimental purposes, materials and methods (procedures), synthesize an experimental hypothesis, organize and collect observed experimental data (results), and analyze data and synthesize scientific conclusions in a laboratory notebook.

Topics to Be Covered:
Lecture topics:

- History of Microbiology
- Microscopy
- Macromolecules
- Replication, transcription, translation
- Cell wall and staining
- Bacterial growth
- Environmental effects on microbial growth
- Virology, mycology and protozoa
- Epidemiology
- Nosocomial infections including Staphylococcus aureus
- Microbial growth and its control
• Human-microbe interactions
• Immunology
• HIV/AIDS
• Bioweapons
• Diagnostic techniques
• Person-to-person diseases
• Animal and arthropod-transmitted diseases
• Other diseases (not in textbook)
• Food and dairy Microbiology
• Systematics

Lab Topics
• Lab Safety
• Microbes are Everywhere
• Use of Microscopes and Observation of Pond Water
• CD-ROM from DNA to Protein
• Observation of Prepared Slides
• Gram Staining
• Pure Culture Technique: Streak Plate
• Effects of Environment on Microbial Growth
• Handwashing Lab
• Typhoid Mary Lab
• Mutagenesis Lab
• Microbial Control Lab (effectiveness of antibiotics, antiseptics and disinfectants)
• Isolation of Antibiotic Producer
• Normal Flora Lab
• Susceptibility to Dental Cavities Lab
• Biochemical Lab #1
• Biochemical Lab #2
• Food and Dairy Lab
• Enterotube Lab

Course Assessments:
The following performance assessments will be used to demonstrate students’ understanding, knowledge, and skills:

Tests (50% of total grade) and Quizzes (15% of total grade)
There will be a quiz or test almost every week. Each quiz will be worth 20 points and you will be allowed to drop your lowest quiz grade. Therefore, if you miss a quiz, then that will be counted as your dropped score. There will be five tests during the term and each test will be worth 100 points. The final test will be cumulative and will cover all of the course material.

Student Presentation (5% of total grade)
Each student will pick one disease to present from a list of diseases that are to be covered during the course. This will be a short 10-12 minute presentation and will include information addressing 8 predetermined criteria. The main reference for the presentation will be the textbook, but supplemental
material from other sources will be encouraged. More details will follow when we get closer to that section of the course. These presentations will be worth 50 points. In addition to my critique of your presentation, the other students in the class will provide you feedback and evaluation of your presentation.

**Report (5% of total grade)**
You will be required to write a short report about “Microbiology in the News” that will be worth 50 points in which you will write about an article concerning microbiology in a newspaper, magazine, etc. You will discuss in your report how the article applies to microbiology class, why you found it interesting and how microbiology class helped you to understand the article. The report should be about 2-3 pages in length (12 point font). You must attach the original article or a copy of the article to the back of your report. SCIENTIFIC JOURNAL ARTICLES WILL NOT BE ACCEPTED! As with all assignments and assessments in microbiology class, your report will be graded for proper English and grammar as well as content.

**Other grades**
There will be two other main sources of grades in the class, these include the lab notebook (20% of total grade) and a lab practical exam (5% of total grade). Notebooks will be collected for grading twice during the semester and will be worth 100 points at each time. The lab practical exam will be worth 50 points. You will sign up for a specific 10-minute timeslot during finals to come in and take your practical. Altogether, these grades are worth a significant amount of your final grade. Therefore, if you keep up with your work and practice good lab skills, you will earn easy points.

**Grading Policy:**
Your course grade will be calculated based on your tests, quizzes, presentation, report, lab notebook and lab practical exam.

**Late Work Policy & Make-up Procedures for Missed Assignments and Work:**
*(Each instructor will provide policy)*

**Attendance Policy**
Students are expected to attend all scheduled classes and laboratories. Absences in a course may affect a student’s final grade. The student is responsible for all assigned work in the course regardless of excused or unexcused absences. Tardiness may also affect a student’s final grade.

In online courses, attendance is signaled by logging on to the D2L/NS Online shell, participating as prompted (e.g., responding to an instructor’s email, posting to a discussion board) and/or completing and submitting assignments. Campus closures do not affect attendance and assignment completion in online courses.
*(Each instructor will provide policy, especially how attendance influences student assessment and grading.)*
Grading Scale:
Your overall grade will be determined using the following scale:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage Range</th>
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<tbody>
<tr>
<td>A</td>
<td>90-100%</td>
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<tr>
<td>B</td>
<td>80-89%</td>
</tr>
<tr>
<td>C</td>
<td>70-79%</td>
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<tr>
<td>D</td>
<td>60-69%</td>
</tr>
<tr>
<td>F</td>
<td>59%</td>
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FA
According to NSCC policy, if a student fails a course, but has not officially withdrawn from the course, and her/his last date of attendance is before the last date to withdraw (use date appropriate to your section), the student will receive a grade of FA (i.e., “Failure for Attendance Reasons”).

FN
An FN is awarded to students who never attended class.

Technology Statement
Nashville State’s classes are considered to be web-enhanced. Faculty have an expectation that students will use a computer and the Internet to complete assignments, engage in online discussions, and access various course materials through D2L/NS Online course shells. Computers are available for student use at each campus during campus open hours.

D2L/NS Online and myNSCC
It is students’ responsibility to check D2L/NS Online course shells for all enrolled courses and myNSCC, including student email, on a regular basis. These are the official communication channels between the college and students, who are responsible for the information communicated through those channels. D2L/NS Online contains specific course information and myNSCC contains information important for other purposes.

ADA Compliance Statement
Nashville State complies with the Americans with Disabilities Act (ADA). If you require accommodations for any courses in which you are enrolled, contact the Access Center at 615.353.3741 or 615.353.3721, or e-mail accesscenter@nscc.edu. If you are registered with the Access Center and require an alternate format for the textbook and other course materials, please contact the Access Center.

Classroom Misconduct
Nashville State Community College has a zero-tolerance policy for disruptive conduct in the classroom. Students whose behavior disrupts the classroom will be subject to disciplinary measures. Please review the Nashville State Student Code of Conduct policy. Please be aware that children are not allowed in class or to be left unattended on campus.

Academic Misconduct
Any form of academic dishonesty, cheating, plagiarizing, or other academic misconduct is prohibited. Students are responsible for understanding and abiding by the Academic Misconduct Policy in the
Nashville State Student Code of Conduct. In addition to other possible disciplinary measures that may be applied through regular college procedures as a result of academic dishonesty, the instructor has the authority to assign an “F” or a “zero” for the exercise, paper, or examination, or to assign an “F” for the course. Students may appeal through the appropriate college grade appeal procedures. Cheating is not tolerated and this rule is non-negotiable. Students are not allowed to leave the classroom once the tests have started. Students are not allowed to touch personal belongs such as cell phone, backpack, note books, book etc. If you violate any of them you will receive a Zero for the test.

**Academic Early Alert System**
Nashville State Community College uses an Early Alert System to let students know of a faculty member’s concern in one or more of these academic areas: lack of attendance, lack of classroom participation, late or missing assignments, and/or poor performance on assignments/tests. *Please note that Early Alerts do not affect a student’s academic standing. If you receive an Early Alert email, please see your instructor and your academic advisor as soon as possible.

**RAVE Emergency Alert System**
Emergency events can happen at any time and Nashville State Community College wants to be able notify students if and when they occur. For this reason, all students have been enrolled in the free RAVE alert system. If you have not already done so, please log in at [https://www.getrave.com/login/nscc](https://www.getrave.com/login/nscc) to confirm and update your contact information and notification preferences. It is critical that your information be correct so that you will receive any emergency notifications. Your RAVE Username is your NSCC email address. If you've never received an email from RAVE with your password, or if you need to reset your password, select “Forgot your password?” and a new password will be emailed to you. Should the RAVE system indicate “user not found”, select Register and create your own RAVE account.

**Inclement Weather & Campus Closings**
Nashville State will use the RAVE alert system to send a text message to students, staff, and faculty about adjusted hours of operation and/or closings at individual campuses. All students should check the Nashville State web site home page at www.nscc.edu for announcements on campus closures, which may vary from campus to campus. Campus closures will also be announced on local television stations. Students should use their own best judgment in determining whether to report to campus during inclement weather when classes are not cancelled.

Even when campuses are closed, students are still responsible for completing all assigned work. When classes are cancelled, faculty will post online assignments and any additional instructions in the D2L/NS Online course shell. Check D2L/NS Online for a message from your instructor regarding your online assignment requirements. Faculty have discretion over adjusting deadlines or due date for assignments, but students are responsible for completing all assigned work by the due date established by the instructor.

**Class Cancellation Policy**
If the class is cancelled, the instructor will notify all students by posting in the D2L/NS Online course, e-mailing through D2L/NS Online, and/or by posting a sign on the classroom door. In the event of class cancellation, students must access D2L/NS Online to complete classwork and the assignment that will be posted in the course D2L site.