

BIOLOGY 2420

APPLIED MICROBIOLOGY

4 CREDIT HOURS

SPRING 2018

Section: 01 Lecture

Time: 9:30-10:50am TTr

Bldg: LDB

Room: 214

Course Coordinator and Lecturer:

Dr. Jordan Clark

Office in LDB 148, phone (936) 294-2656

Email jmc124@shsu.edu

Office hours: TBA

Head Lab Instructor:

Kallie Davis

Prerequisites: A minimal grade of C or better in Human Anatomy (BIO 2401), Human Physiology (BIO 2402) and a course in introductory chemistry are required. This course may not be applied for biology major credit and is open only to students pursuing degrees in nursing, physical therapy, physical education, or other related health fields.

NOTE: A minimum GPA of 3.0 (B average) in science courses is required to even apply to Nursing School. Students admitted to Nursing School have an average GPA of 3.4. So, if you want to get into Nursing School, obtain no less than a B in all of your pre-nursing courses. In addition, nursing schools tend to look more favorably on applicants who do not retake any single course more than once, or have more than two different courses retaken.

Course Description: This course provides broad exposure to the field of microbiology, focusing mainly on bacteriology (with a brief introduction to virology, parasitology, and mycology). The major topics include growth of microorganisms, bacterial structure, physiology, and diseases of body systems. The laboratory component will teach the basics of culture and identification of bacteria, and microbial ecology, with an exploratory format. Since the course is primarily directed at pre-nursing and other preallied health majors, while covering the basics of microbiology, we will focus on medical microbiology, infectious disease prevention, and public health.

Course learning objectives Students in microbiology will:

1. learn the major terms and concepts of microbiology

2. understand the major structures in bacteria and their functions
3. gain a working understanding of bacterial physiology and morphology
4. understand the basics of medical microbiology
5. acquire basic laboratory skills in microbiology, especially bacterial identification
6. understand how microbiology applies to diseases of specific body systems
7. develop critical thinking skills related to experimental design, interpretation of scientific data and theories, and published medical studies

My approach to science education is concept based learning. You'll be required to know some basic facts in order to understand connections, but it's most important for me to teach you how to **learn** microbiology. To better help you make lasting connections, class time will be spent both with lecture and active learning exercises.

Required Course Texts:

Nester's Microbiology: A Human Perspective 8th Ed., by Anderson et al, pub by McGraw Hill.
McGraw Hill Connect Code will provide an E Text and LearnSmart

General Microbiology and Applied Microbiology Biology 3470 and 2420 Laboratory Manual (2016) is available only from Eagle Graphics, at 1304 Sam Houston Avenue. This is a loose-leaf version, so purchase a three-ring binder to hold it (1.5 or 2 inch diameter suggested). This custom manual is produced for this course, so is not available elsewhere. Proceeds from the sale of this manual go to student scholarship funds.

Squarecap.com subscription.

COURSE POLICIES AND ASSESSMENTS

As students at SHSU you are expected to behave in a professional and respectful manner. Please review the ***Student Professionalism Guide*** for more detail on policies and expectations for this course.

Lecture Attendance: Lecture attendance is required for this semester. You may not leave during the lecture without advance notice. Leaving during the lecture will result in a zero for that chapter/week's quiz and homework.

Lecture Material: You are required to register for all required material. The Connect course site registration will remain open for a limit time. Once Connect registration has closed a second registration period will open in three weeks. You will not be allowed to make up any missed assignment during the closed registration period. The second registration period will be the final opportunity to register. If you miss the second registration period you will not be allowed access to any of the Connect assignments.

Course Assessment: This course has two components, lecture and lab, combined into one overall four-hour course grade. Your course grade will be determined by the following:

Assessment	Weight(%)
Exams	35
HW	15
Case Studies	05
Quizzes	10
Lab	35

Lecture Exams: Lecture exams will cover material from lectures, readings, homework, and case studies. All exams will be 50 multiple choice questions. You are allowed the entire class time to complete the exam. During the exam, all electronic devices must be secured and out of sight. All watches must be removed and secured out of sight. All hats must be removed or turned backwards. You must notify the instructor before the exam or **no later than 8hrs** after the missed exam. You must provide verification by means of official university or medical documentation. Failure to abide by any one of these attendance policies will result in a zero for the missed exam without the opportunity to take a make-up. If the excused absence is verified to be official you will be allowed to take a make-up exam. The date, time and form of the make-up exam will be decided by the instructor.

Class Quizzes: Quizzes will be administered during lecture through the online application *Squarecap*. If you arrive to class after the quiz has started, you will not be allowed to participate. If you experience any technical issues during the quiz, you must notify the instructor immediately. Once the instructor has verified the technical issue, you will be allowed a make-up quiz at a different date and time. If you do not immediately notify the instructor of the technical issue or wait until the quiz has finished to notify the instructor, you will not be allowed to take a make-up quiz.

Connect Chapter HW: Chapter homework and case studies are assigned through your McGraw Hill Connect course site. You are responsible for noting the due date and time for all Connect work. You must document and notify your instructor of any technical issues before the assignment due date. Your instructor will review assignment policies each week as they may differ for select assignments.

Laboratory: Please review your laboratory syllabus for policies. Your lab instructor will give you a complete description of policies on the first day of lab. Be aware that you must attend the lab for which you are registered and may NOT switch sections.

UNIVERSITY POLICIES

ACADEMIC DISHONESTY:

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

Cell phones must be put on vibrate and put away during class, and absolutely during exams. If your cell phone is out during testing days, then your exam will be taken up and you will receive a “0” for the test, and face possible additional disciplinary action.

STUDENT ABSENCES ON RELIGIOUS HOLY DAYS POLICY:

Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Section 51.911 (a) (2) defines a religious holy day as: “a holy day observed by a religion whose places of worship are exempt from property taxation under Section 11.20...” A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence.

University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). The instructor will complete a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed. For a complete listing of the university policy, see:

http://www.shsu.edu/~vaf_www/aps/documents/861001.pdf

STUDENTS WITH DISABILITIES POLICY:

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see:

<http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf>

VISITORS IN THE CLASSROOM:

Only registered students may attend class. Exceptions can be made on a case-by-case basis by the professor. In all cases, visitors must not present a disruption to the class by their attendance. Students wishing to audit a class must apply to do so through the Registrar's Office.

Classroom Rules of Conduct: Cell telephones must be turned off and put away before class begins. Students are prohibited from reading, sleeping, texting, talking at inappropriate times, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive may be reported to the Dean of Students for disciplinary action in accordance with university policy. No audio or visual recording of the lecture may take place without the express written consent form signed by both

Tentative Schedule

The following is **tentative**. Weeks for the exams will be followed as closely as possible, but they are **subject to change**. It is **YOUR** responsibility to attend class, check Blackboard often, and be aware of schedule changes.

Week	Lecture
1 Jan 17	Introduction and Registration
2 Jan 22	Ch 3: Microscopy and Cell Structure
3 Jan 29	Ch 4: Dynamics of Microbial Growth
4 Feb 5	Ch 5: CTR of Microbial growth
5 Feb 12	Exam 1 Ch 10: ID and Classify Microbes
6 Feb 19	Ch 10: ID and Classify Microbes Ch 11: Diversity of Bacteria and Archaea
7 Feb 26	Ch 11: Diversity of Bacteria and Archaea Ch 12: Eukaryotic Members

8 Mar 5	Ch 13. Viruses, Viroids, Prions
9 Mar 12	Spring Break
10 Mar 19	Ch 14/15 Exam II
11 Mar 26	Ch 21: Respiratory System Infections
12 Apr 2	Ch 22: Skin Infections
13 Apr 9	Ch 24. Digestive System Infections
14 Apr 16	Exam III Ch 25. Blood and Lymphatic System Infection
15 Apr 23	Ch 25. Blood and Lymphatic System Infection Ch 26: Nervous System Infections
16 Apr 30	Ch 26: Nervous System Infections
17 May 7	Finals TBA