

Syllabus

Santa Rosa Campus Baker Hall, TTh 5–6:30 pm in 1801, 6:30–9:30 pm in 1885

Instructor

Keizen Li Qian

Email: kliqian@santarosa.edu[Remind](#): text @micro51457 to 81010**Office hours**By appointment or Weds 1–2* pm [Zoom](#)[link](#) Meeting ID: 986 5637 6532

Passcode: redox

When emailing me, please add to the Subject: MICRO 5 F22

Catalog description

Course covers the morphology, growth, metabolism, genetics, and control of microorganisms, with emphasis on bacteria and viruses. Includes principles of microbial pathogenicity, and the human immune response. Emphasis on laboratory techniques. Intended for allied health majors considering transfer to CSU or UC.

Prerequisites

- ENGL 1A (OR ESL 10)
- BIO 10 or higher (V7)
- CHEM 60, CHEM 3A (OR CHEM 1A), or higher (V6)

Important dates

See Course Schedule for holidays.

First day of class	T 8/16 5–9 pm
Last day to drop with no grade of record	9/4
Last day to withdraw with W	11/13
Final Exam	12/13 4–6:45 pm

* Please let me know if you will be more than 10 minutes late so I will wait for you.

Course level student learning outcomes (SLOs)

Upon completion of the course, students will be able to:

1. Integrate basic principles of microbial cell structures and processes with evolutionary and ecological concepts.
2. Explain the impact of microbiology on medical, public health and environmental concerns.
3. Demonstrate proficiency in a variety of standard laboratory techniques used for the routine culture, analysis and identification of microorganisms.

Objectives

In order to achieve these learning outcomes, during the course the students will:

1. Outline the history of major microbiological discoveries and describe their contributions to world civilization.
2. State Koch's postulates and apply them to different types of pathogens and to new diseases.
3. Relate basic principles of chemistry and cell biology to structure and function of microbes.
4. Explain how the unity of basic cell processes contributes to difficulties in treating infectious disease.
5. Describe the principles and mechanisms of microbial genetics and coevolution and apply them to the problem of increasing drug resistance in microorganisms.
6. Describe viruses and their relation to cells.
7. Compare and evaluate the various mechanisms of control and prevention of microbial disease.
8. Discuss the mechanisms of pathogenicity in microbes.
9. Compare and contrast the epidemiology of community acquired and hospital acquired infections.
10. Describe the functions of the human immune system, its relations to disease, and how vaccination contributes to immunity.
11. Describe the etiology, epidemiology, treatment and prevention of a variety of important infectious diseases.
12. Safely and aseptically perform a variety of microbiological laboratory techniques.
13. Collect and analyze data.

Required materials

Textbooks

1. *Microbiology: The Human Experience*, by Foster, Aliabadi, and Slonczewski. Norton. Any edition.
 - a. From the publisher: Go to <https://digital.wwnorton.com/michum2> to purchase the ebook for *Microbiology: The Human Perspective* 2nd ed. for \$50.

- b. If you prefer paper, you can buy a \$30 full-color loose-leaf book **after** you purchase the ebook from Norton (instructions for this option can be found [here](#)).
 - c. You do not need Smartwork5 and Inquizitive for my course.
2. SRJC College lab manual for this course is available at the bookstore. A hardcopy of the lab manual is required in class.

Course supplies

- Cotton lab coat or long-sleeved, cotton shirt
- Closed-toed shoes
- pen and pencil
- color pencils (optional)
- Lecture notebook: any style
- Optional organizer for handouts
- Lab notebook: stitch-bound or spiral bound
- Scientific calculator
- See **Technology**

Methodology

1. Students will develop a basic understanding of medical microbiology concepts through the following activities.
 - a. Reading the course textbook, online content, and articles shared on Canvas
 - b. Live in-person and pre-recorded lectures
 - c. Laboratory exercises
 - d. Homework assignments on Canvas, including discussion boards
 - e. A written report and an oral presentation on a communication project approved by the instructor
2. Complete reading assignments before lectures and laboratory exercises.
3. Slides and study guide questions will be made available on the Canvas site.
4. Refer to the attached schedules of lecture topics and laboratory exercises.
These may be revised during the semester.

Workload

- MICRO 5 is a 5-unit course with several prerequisites. **In addition** to 3 hours of lecture and 6 hours of lab on campus, students are expected to spend a **minimum of 7.5 hours per week** to study course materials and complete assigned reading, homework, and projects.
 - If you are not able to devote the required time, I strongly urge you to consider taking it in a future semester when your own schedule fits the demands of this course.
 - The single greatest factor in student success is the amount of time and active engagement spent preparing for the course.
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Grading

Grading in this course is based upon a point system. Students will earn points with quizzes, homework and in-class assignments, lecture exams, a pathogen report, and the final exam. In addition, students will earn points with their participation in classroom discussions and laboratory activities. Each of these items is described below.

Quizzes

1. Quizzes are an opportunity to assess your understanding of the material.
2. They make up 20%, or two letter grades, of your course grade.
 - a. They are solo activities, so do not share answers or discuss questions with others. See Exam policies below.
 - b. Quizzes are usually given in the first 15 minutes of class and **students who are late will have less time or miss the quiz.**
 - i. Stay through the end of lecture after a quiz. Students who leave after a quiz receive a zero on the quiz.
 - ii. There are no make-up quizzes, so please check in with me as soon as you realize you may miss a scheduled quiz.

Homework

1. A variety of homework assignments are designed to help prepare you to get the most out of class and for quizzes and exams, or to cover material that is otherwise difficult to assess by exam.
2. **Homework quizzes: due before every class is a timed Canvas assignment** with one or two questions adapted from recorded lecture questions. These will be worth up to 8 points each and add up to 100 points, or a whole letter grade for the course.
3. Submissions will not be accepted after the due date and submissions showing a rushed attempt or minimal effort will receive a zero.
4. In addition, ungraded assignments including Canvas practice "Quizzes" will be offered for practice.

Canvas Discussions

In addition to lecture homework, there will be approximately 8 graded discussions.

- These discussion assignments are intended to develop scholarship and communication skills.
- A rubric will be provided with instructions for each discussion.
- Completion of each discussion topic is worth 5 or 10 points.
- Write in your own words.
- You will usually be required to respond to other students' responses for full credit.
- The Class Notes Discussion has no posted due date, but individual notetakers will be assigned each day of class. Each notetaker will post their notes **by noon after each class for points**. You will be required to post notes for three classes

and any additional notes and helpful resources you post will be considered for extra credit.

Lecture exams

There will be 3 lecture exams (50 points each) with mostly free response questions. Please see the schedule below for the dates of these important exams.

Lab notebook

Keeping an updated record of planned, ongoing, and completed lab activities is essential in science. Please see Lab, Preparation for labs below.

Exam policies

- Exams are solo activities; answer **in your own words** and do not share answers or discuss questions with others, as some students may not have completed the test.
- Plagiarized answers are a violation of academic honesty (see Course Policies) and earn you no points.
- There are no make-up exams or dropped scores. Do not take an exam if you are unprepared. Instead, make an appointment with me to discuss your circumstances and how best to continue.
- Please see the course schedule for exam dates. Check your personal calendars to see if you have any conflicts with the exam schedule. If you must miss an exam, contact me as soon as possible.

Lab exams and skills demonstrations

- There will be 3 lab exams (50 points each) to assess understanding of lab activities.
- In addition, there will be skills demonstrations worth a total of 20 points. Detailed instructions and rubrics for each skills test will be given in lab and on Canvas.

Final exam

- A comprehensive (cumulative) written exam will be given at the time assigned by the College (p. 1 and Course Schedule). The exam will cover the lecture topics after Lecture Exam 3 and test your cumulative understanding.
- Students who have an A average on quizzes and lecture exams may opt out of the final exam without penalty. That means I will not include the final in the course grade calculation (course total out of approximately 900 points).

Outreach Communication Project

Student groups will share a 10–12 minute presentation on a microbiology topic of their choosing. Students will also write a group summary of their research and reflections on communication with the public. Detailed instructions for this important assignment will be given later.

Participation

1. One of my goals in this course is to help you to value and to invest in your own learning. To support this, students complete a weekly journaling activity worth 35 of your participation points from Week 4 to the end of the course.
2. To earn additional points, speak up regularly in class, organize a group office hour with other students, post study guide questions and answers, and get appreciations from classmates you helped.
3. Students are expected to participate in class and to keep up with the course schedule by completing assignments, including the readings, **before** they are due.
4. Show respect for your own learning by prioritizing class requirements and communicating early with me and groupmates about emerging access needs.
5. Students who are not prepared for class, miss all or part of class, or behave unprofessionally toward instructors or classmates will lose points.
6. I will announce additional opportunities to earn participation points throughout the semester.

Summary

Item	Number	Points each	Item Total
Quizzes	9	20–30	200
Homework assignments	Approximately 30	1–8	Approximately 100
Lecture exams	3	50	150
Discussion Post & Response	8	5 or 10	70
Lab Notebook Checks	3	20	60
Lab exams	3	50	150
Lab skills tests	1	20	20
Final exam	1	100	100
Outreach project	1	100	100
Participation	N/A	N/A	50
		Course Total	Approximately 1000

Letter grades are based upon the percentage of possible points using the following scale:

90 – 100% = A 80 – 89% = B 70 – 79% = C 60 – 69% = D 0 – 59% = F

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School & Course Policies

We all share responsibility to make this course a positive learning environment for everyone. Be professional in communications with your classmates and with me. Please observe the policies in the [Academic Integrity policy](#) and the related [Student Conduct](#) and listed below.

Academic honesty

- In science even more so than other academic disciplines, honesty, including in representation of authorship, is required. I will explain this in more detail in a lesson on citation and plagiarism. I am required to report evidence of academic dishonesty or student conduct that does not contribute to a positive learning environment.
- “Santa Rosa Junior College holds that its primary function is the development of intellectual curiosity, integrity, and accomplishment in an atmosphere that upholds the principles of academic freedom.... Examples of academic dishonesty include cheating, plagiarism, impersonation, misrepresentation of idea or fact for the purpose of defrauding, use of unauthorized aids or devices, falsifying attendance records, violation of testing protocol, inappropriate course assignment collaboration, and any other acts that are prohibited by the instructor of record.” *SRJC Student Rights & Responsibilities: Academic Integrity*
- “It is a student's responsibility to both be aware, and informed, of the [Academic Integrity policy](#) and the related [Student Conduct](#) process for academic integrity incidents.” *SRJC Academic Dishonesty Reporting Form*

Attendance and lateness

- Everyone is expected to arrive on time to class having completed previous assigned readings and prepared for activities. Quizzes are given in the first 15 minutes of class -- see Quizzes above.
- Attendance is taken after the first 5 minutes and you are expected to stay until the end of lab, unless otherwise instructed. If you missed any part of class for any reason, email me to be sure I recorded your attendance.
- I may drop a student who misses 4 total days of class.
- All graded assignments, quizzes, and exams have due dates and times. Late assignments are not accepted, but I will consider exceptional circumstances. Take responsibility to contact me as soon as you know you cannot make or already missed a due date.

COVID-19 prevention

- Getting COVID-19 has caused disrupted learning for many of my students. We have to continue to work together to attend class in person.
- As of this printing, masks are strongly recommended in the classroom.

- You must inform your professors right away if you have any symptoms or a positive test result.
- Please go to <https://covid.santarosa.edu/> for the most up-to-date policies.

Devices

- You are invited to have your laptop or tablet in class to work on assignments and access digital resources in class and lab.
- If you must use your device for anything unrelated to class, leave the room or you may lose participation points (see Participation above).

Labs

Safety

Students will receive an orientation to laboratory safety.

- No food or beverage is allowed in sight in the lab classroom at any time.
- Some lab sessions begin with an additional safety orientation. Students who arrive late and miss the daily lab orientation will be asked to leave and will be marked absent.

Preparation for labs

- Required preparation for each lab is posted on weekly Lab Pages on Canvas.
- Complete the prelab assignment, including reading the assigned sections of the lab manual, before each lab.
- Record changes to protocols and results, and complete the postlab assignment in your notebook during lab or for homework if you need more time.
- Bring your lab notebook to every lab. **Random notebook checks worth 20 points for up-to-date entries can happen any class.**
- See Course supplies for required attire for labs.

Technology

1. The course will make heavy use of Canvas, a web-based learning management system. See Resources below for support. I will demonstrate how to access assignments, and please refer to this [guide to using the Canvas Inbox](#) to message classmates and me.
2. Office hours will be on Zoom as listed at the top of this document. [Support for Zoom](#)
3. [Laptops and hotspots are available for checkout through the College](#). Click on [SRJC Library Curbside Services](#) for laptops, calculators and hotspots. A hardcopy of our textbook is also available on reserve.

4. While we are planning to be in person, safety may require us to meet virtually on short notice. To support last-minute communications, join Remind using instructions at the top of the Syllabus.

Resources

I can only try to meet your access needs if you make them known to me (or to campus staff below). Please keep me up-to-date on your access needs so we make best use of time to help you succeed.

Student health

From Student Health Services:

Should you experience any physical or mental health issues, know that all of us at SRJC care about your well-being. Did you know that you have free access to nurses, counseling, and certain testing and medications because you pay a student health fee? SHS offers confidential, in-person or secure remote services for all SRJC students, and some providers can converse with you in Spanish if you prefer. They also have on-site COVID rapid testing and vaccinations available, all at no cost.

To start the process for any type of physical or mental health appointment contact **Student Health** at 707-527-4445 or email studenthealthservices@santarosa.edu

Sonoma County Crisis hotline: (707) 576-8181

National Lifeline: 9-8-8

Disability Resources Department (DRD)

From <https://drd.santarosa.edu/>:

The Disability Resources Department facilitates equity and access to a community college education for qualified students. We provide academic accommodations and educational assistance in courses in accordance with state and federal law. Services include specialized academic advising focusing on individual abilities and limitations, disability management, and access technology. Students can receive accommodations including extra time for exams, mobility assistance, sign language interpreters, and access to classroom notes.

Any student whose disability qualifies her or him for testing accommodations is encouraged to present a disability accommodation letter to the instructor as soon as possible. Last-minute requests may not be considered reasonable.

Canvas

Study guides, grades, and important announcements will be communicated to students via Canvas. Support for Canvas can be found here:

<https://de.santarosa.edu/student-help-for-canvas>

How to succeed in this course

- Go to Orientation Module > Advice from former students. Find 2 pieces of advice to keep in mind. Revisit this page of wisdom often -- my students put it better than I.
- Try different ways of organizing and managing your time. Checklists, calendar reminders, and apps can benefit different students for different courses, and the only way to find ways that work for you is to try it.
- Review learning objectives before and after each reading or lab unit. Know how well you understand each topic and take “not sure” as a positive signal that you are taking control of your own learning. Follow up appropriately.
- Complete the study guides on Canvas. Form a study group with other students. Divide up the study guides and present the answers to your study group.
- Write down questions as you read and do homework and ask them in class.
- Use memory devices such as creating a mind palace to remember sequences or flashcards to help memorize the meaning of unfamiliar terms. Practice explaining the terms to your friends, classmates, study-group members, siblings, parents, pets, or stuffed animals.
- Write test-style questions for each important concept and quiz your study-group members. Engaging with the material creatively and actively is the best way to learn it -- and to notice when you don't fully understand something!
- **Ask questions as soon as you find you do not understand something.** I celebrate awareness of your own learning needs. I also welcome general questions related to navigating school, work-life balance, and career options. Ultimately clarity around these topics can motivate you as a scholar and professional and prevent burnout.
- Ask questions when you feel unsure about instructions, especially in lab.