



Microbiology

BIOL-3310

Fall 2023 Section 01 4 Credits 08/09/2023 to 12/08/2023 Modified 08/10/2023

Description

Microbiology is the study of biological organisms and agents too small to be seen with the unaided eye. This course will introduce students to the diversity, physiology, anatomy, and genetics of microorganisms, with particular emphasis on the bacteria. It will also introduce students to key areas of microbiology, including medical microbiology, microbial ecology, food microbiology, and biotechnology.

Requisites

Prerequisites:

(BIOL 1107 or BIOL 2107 Minimum Grade: C) and (BIOL 1107L or BIOL 2107L Minimum Grade: C) and (BIOL 1108 or BIOL 2108 Minimum Grade: C) and (BIOL 1108L or BIOL 2108L Minimum Grade: C) and CHEM 1211K or (CHEM 1211 and CHEM 1211L) and CHEM 1212K or (CHEM 1212 and CHEM 1212L)

Corequisites:

Contact Information

Dr. William Kenyon

Biology 283

wkenyon@westga.edu

678-839-4033

Meeting Times

Section 01 Tuesday & Thursday 9-10.50 am

Section 02 Monday & Wednesday 9-10.50 am

Materials

Good news: your textbook for this class is available for free online, in web view and PDF format! You can also purchase a print version, if you prefer, via the campus bookstore or from OpenStax on Amazon.com.

You can use whichever formats you want. Web view is recommended -- the responsive design works seamlessly on any device. If you buy on Amazon, make sure you use the link on your book page on openstax.org so you get the official OpenStax print version. (Simple printouts sold by third parties on Amazon are not verifiable and not as high-quality.)

Microbiology from OpenStax, Print ISBN 1938168143, Digital ISBN 1947172239,
www.openstax.org/details/microbiology

Outcomes

Academic Goals for the Course

- It is the goal of this course to provide students with a fundamental knowledge of microbiology.
- Students will complete this course with an understanding of the diversity of microbes and the role that they play in our environment.
- Both the history of the subject and new advances in microbial techniques will be covered.
- Students will graduate with knowledge of how microbes may be controlled through an understanding of their metabolism, genetics and growth conditions.

Evaluation

Criteria

Comprehension of lecture material will be assessed through in-class assignments completed as workshops.

- 8 workshops total of 400 pts

Lab material will be assessed with take home assignments.

- 4 lab assignments total of 100pts

A comprehensive final using previous assignment questions will be taken at the end of the semester

- 1 final total 200 pts

Breakdown

Final letter grades are based on the following standard scale without exception

- A = 90-100%,
- B = 80-89.9%,
- C = 70-79.9%,
- D = 55-69.9%,

- F = below 55%

Assignments

Printed copies of all assignments will be provided in class. You must use a large pink scantron #229633, to submit your answers for grading,

Assignments may include multiple choice, matching, word bank and annotation style questions.

Schedule

	Section 02		Section 01	FALL 2023	Proposed schedule for BIOL 3310, FALL 2023	Pages
				MODULE 1		
W	8-9	H	8-10	Chapter 1	An Invisible World	31
M	8-14	T	8-15			
W	8-16	H	8-17		Workshop in class assignment	50 pts
M	8-21	T	8-22	Chapter 2	How We See the Invisible world	52
W	8-23	H	8-24			
M	8-28	T	8-29		Workshop in class assignment	50 pts
LAB 1 Unseen Microbes						
W	8-30	H	8-31	Independent study prior to lab: Video demos and Protocol mini lectures <ul style="list-style-type: none"> · Safety in the micro lab, · Aseptic technique 	Experiential learning Lab: Activities and experiments <ul style="list-style-type: none"> · Ubiquity · Aseptic technique · Contamination Take home Assignment 25 pts	

				MODULE 2		
W	9-6	T	9-5	Chapter 3	The Cell	40
M	9-11	H	9-7			
W	9-13	T	9-12		Workshop in class assignment	50 pts
M	9-18	H	9-14	Chapter 6	Acellular pathogens	34
W	9-20	T	9-19			
M	9-25	H	9-21		Workshop in class assignment	50 pts
Lab 2 Staining and Microscopy						
W	9-27	T	9-26	Independent study prior to lab: Video demos and Protocol mini lectures · Heat fixed smear · Gram stain · Wet mount	Experiential learning Lab: Activities and experiments · Gram stain · Microbial pond life Take home Assignment 25 pts	
				MODULE 3		
M	10-2	H	9-28	Chapter 8	Microbial Metabolism	35
W	10-4	T	10-3			
M	10-9	T	10-10			
W	10-11	H	10-12		Workshop in class assignment	50 pts
M	10-16	T	10-17	Chapter 9	Microbial Growth	32

W	10-18	H	10-19			
M	10-23	T	10-24		Workshop in class assignment	50 pts
Lab 3 Dilution techniques						
W	10-25	H	10-26	Independent study prior to lab: Video demos and Protocol mini lectures · Streak plate · Viable count	Experiential learning Lab: Activities and experiments · Streak plate · Serial dilution Take home Assignment 25 pts	
				MODULE 4		
M	10-30	T	10-31	Chapter 10	Biochemistry of the genome	32
W	11-1	H	11-2			
M	11-6	T	11-7		Workshop in class assignment	50 pts
W	11-8	H	11-9	Chapter 11	Mechanisms of Microbial Genetics	50
M	11-13	T	11-14			
W	11-15	H	11-16			
M	11-27	T	11-28		Workshop in class assignment	50 pts
Lab 4 Microbial testing						

W	11-29	H	11-30	Independent study prior to lab: Video demos and Protocol mini lectures · Selective and differential media · Differential biochemical tests · Kirby Bauer test	Experiential learning Lab: Activities and experiments · Diffusion in solid medium · Fermentation tubes Take home Assignment 25 pts Course survey 10 pts	
	Dec 6 th 8-10am		Dec 7 th 8-10am	Comprehensive final 200pts		710pts

* Course Policies and Resources

Examinations and Final Grades

- Late submission of any work will result in a grade penalty.
- If a student is absent on the day of an assignment, the work cannot be made up unless the student provides a valid written excuse within a period of one week.
- All grade queries are limited to one week from the date of release and MUST be made in person.

Attendance and Classroom Behavior

- Attendance is **mandatory** for lecture and lab.
- Failure to attend classes may result in your **removal** from the course.
- University policy states that an absence of more than one week must be reported by the student to the Patient Advocate (Tel: 678-839-6452)
- Cell phone use is **NOT** permitted during class or lab.
 - **No photography or filming of lectures is permitted.**
 - All cell phones, and other electronic devices that create disruptive noise, must be **silenced** during lecture.
 - Failure to comply may result in your **removal** from the class.
- Lectures will begin **promptly**, any late comers who cause disruption will be asked to leave.
- Please refrain from excessive chat during the lecture period is distracting to both me and other students.
- Use of laptops during class periods is at the discretion of the lecturer – abuse of laptop use for web surfing and e-mailing during lecture time will result in all electronics being **banned** from the classroom.

🎯 College/School Policies

The College of Arts, Culture, and Scientific Inquiry (CACSI) is dedicated to promoting excellence in teaching, scholarship/creative activity, and service. The College aims to provide students with an understanding of contemporary and historical aspects of the various disciplines within the social, physical, and natural sciences and the arts and humanities. It also aims to support the development of skills needed for professional preparation. CACSI is committed to interdisciplinary inquiry and recognizes the transformative power of education. We empower faculty, staff, students, and alumni to engage responsibly and creatively with the complex environment of the 21st century, relying on the rich knowledge and skills gained from the study of the sciences, the humanities, and the arts. CACSI teaches its students to research, think, write, communicate, and create, empowering them with adaptability, cultural literacy, and sensitivity, along with the critical thinking skills necessary to contribute to their communities and the public good in meaningful ways. CACSI faculty are committed to positively impacting the community at multiple levels via teacher education, public engagement, entertainment, and outreach.

Students are encouraged to practice the following Big Six college experiences to be successful in CACSI coursework and degree programs:

(A) Connect with professors, staff, coaches, etc. who care about you as a person:

1. Connect with a professor(s) who makes you excited to learn;
2. Connect with a mentor(s) who cares about you as a person;
3. Connect with a mentor(s) who pushes you to reach your goals;

(B) Participate in experiential learning opportunities:

4. Complete a long-term project such as a capstone project.
5. Participate in a high-impact practice such as study abroad or an internship
6. Get involved in extracurricular activities and groups.

Institutional Policies

Academic Support

UWG is committed to student success, and the following resources will help you be more successful in your classes.

Center for Academic Success: The [Center for Academic Success \(http://www.westga.edu/cas/\)](http://www.westga.edu/cas/) provides tutoring, academic coaching, and supplemental instruction to help all undergraduate students succeed academically. For more information, contact them: 678-839-6280 or cas@westga.edu.

University Writing Center: The [University Writing Center \(https://www.westga.edu/writing/\)](https://www.westga.edu/writing/) assists students with the writing process. For more information, contact them: 678-839-6513 or writing@westga.edu.

Accessibility Services: Students with a documented disability may work with UWG Accessibility Services to receive essential services specific to their disability. All entitlements to accommodations are based on documentation and USG Board of Regents standards. If a student needs course adaptations or accommodations because of a disability or chronic illness, or if the student needs to

make special arrangements in case the building must be evacuated, the student should notify their instructor in writing and provide a copy of his/her Student Accommodations Report (SAR), which is available only from Accessibility Services. Faculty cannot offer accommodations without timely receipt of the SAR; further, no retroactive accommodations will be given. For more information, please contact [Accessibility and Testing Services \(https://www.westga.edu/student-services/accessibility-testing/index.php\)](https://www.westga.edu/student-services/accessibility-testing/index.php).

Online Course Content

UWG takes students' privacy concerns seriously: technology-enhanced and partially and fully online courses use sites and entities beyond UWG and students have the right to know the privacy policies of these entities. For help with your online classes, additional online tutoring and other student success services, information on privacy and accessibility, and technology requirements, visit this [UWG Online \(https://uwgonline.service-now.com/kb/\)](https://uwgonline.service-now.com/kb/) Help site.

UWG's online virtual tutoring service is Tutor.com, which replaces Smarthinking. Tutor.com provides 24/7, on-demand, 1-to-1 tutoring and homework help in more than 250 subjects. The expert tutors at Tutor.com can help students work through tough homework problems, improve their writing skills, study for a test, review difficult concepts, and so much more! Tutor.com can be accessed in CourseDen under the Resources dropdown menu and is available to all UWG students, regardless of course modality. More information can be found on UWG Online's Tutor.com: [Tutoring Service Knowledge Base article \(https://www.google.com/url?q=https://uwgonline.service-now.com/kb/?id%3Dkb_article_view%26sysparm_article%3DKB0010788&sa=D&source=docs&ust=1689091469862762&usg=AOvVaw2vbm-Y9CAGpzHoFZpHngPF\)](https://www.google.com/url?q=https://uwgonline.service-now.com/kb/?id%3Dkb_article_view%26sysparm_article%3DKB0010788&sa=D&source=docs&ust=1689091469862762&usg=AOvVaw2vbm-Y9CAGpzHoFZpHngPF).

Students enrolled in online courses can find answers to many of their questions in the [Online/Off-Campus Student Guide \(http://uwgonline.westga.edu/online-student-guide.php\)](http://uwgonline.westga.edu/online-student-guide.php).

Honor Code

At the University of West Georgia, we believe that academic and personal integrity are based upon honesty, trust, fairness, respect, and responsibility. Students at West Georgia assume responsibility for upholding the Honor Code. West Georgia students pledge to refrain from engaging in acts that do not maintain academic and personal integrity. These include, but are not limited to plagiarism*, cheating*, fabrications*, aid of academic dishonesty, lying, bribery or threats, and stealing. When a student chooses to enroll at the University of West Georgia students pledge the following:

Having read the honor code of UWG, I understand and accept my responsibility to uphold the values and beliefs described, and to conduct myself in a manner that will reflect the values of the institution in such a way as to respect the rights of all UWG community members. As a UWG student, I will represent myself truthfully and complete all academic assignments honestly.

I understand that if I violate this code, I will accept the penalties imposed, should I be found responsible for violations through the processes due to me as a University community member. These penalties may include expulsion from the University. I also recognize that my responsibility

includes willingness to confront members of the University community, if I feel there has been a violation of the Honor Code.

For more information on the University of West Georgia Honor Code, please visit the [Office of Community Standards \(https://www.westga.edu/administration/vpsa/ocs/index.php\)](https://www.westga.edu/administration/vpsa/ocs/index.php) site.

UWG Email Policy

University of West Georgia students are provided a MyUWG e-mail account. The University considers this account to be an official means of communication between the University and the student. The purpose of the official use of the student e-mail account is to provide an effective means of communicating important university related information to UWG students in a timely manner. It is the student's responsibility to check their email.

Mental Health Support

If you or another student find that you are experiencing a mental health issue, free confidential services are available on campus in the [Counseling Center. \(https://www.westga.edu/student-services/counseling/\)](https://www.westga.edu/student-services/counseling/). Students who have experienced sexual or domestic violence may receive confidential medical and advocacy services with the Patient Advocates in [Health Services \(https://www.westga.edu/student-services/health/\)](https://www.westga.edu/student-services/health/). To report a concern anonymously, please go to [UWGcares \(https://www.westga.edu/uwgcares/\)](https://www.westga.edu/uwgcares/).

[Online counseling \(https://www.westga.edu/student-services/counseling/index.php\)](https://www.westga.edu/student-services/counseling/index.php) is also available for online students.

ELL Resources

If you are a student having difficulty with English language skills, and / or U.S. culture is not your home culture, specialized resources are available to help you succeed. Please visit the [E.L.L. resource page \(https://www.westga.edu/isap/ell-resources.php\)](https://www.westga.edu/isap/ell-resources.php) for more information.

Credit Hour Policy

The University of West Georgia grants one semester hour of credit for work equivalent to a minimum of one hour (50 minutes) of in-class or other direct faculty instruction AND two hours of student work outside of class per week for approximately fifteen weeks. For each course, the course syllabus will document the amount of in-class (or other direct faculty instruction) and out-of-class work required to earn the credit hour(s) assigned to the course. Out-of-class work will include all forms of credit-bearing activity, including but not limited to assignments, readings, observations, and musical practice. Where available, the university grants academic credit for students who verify via competency-based testing, that they have accomplished the learning outcomes associated with a course that would normally meet the requirements outlined above (e.g. AP credit, CLEP, and departmental exams).

HB 280 (Campus Carry)

UWG follows University System of Georgia (USG)

guidance: <https://www.usg.edu/policymanual/section6/C2675>
(<https://www.usg.edu/policymanual/section6/C2675>).

You may also visit our website for help with USG Guidance: <https://www.westga.edu/police/campus-carry.php> (<https://www.westga.edu/police/campus-carry.php>).

Additional Items
