

**BIOL3380: Microbiology
Syllabus – Fall 2026**

Instructor: Marvin Whiteley, Ph.D.

Professor of Biological Sciences

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Office: Cherry Emerson 315

Office hours: M, 9:30 - 10:30 am or by appointment

Course description: This in-person course offers an in-depth introduction to microorganisms and their interactions with ecosystems. The course covers microbial structure and function, diversity, physiology, metabolism, genetics, ecology, evolution, and mechanisms of pathogenesis.

Textbook: None

Grading:

Exams (80% of your final grade) - Four exams will be conducted during the semester. Each exam is worth 20% of your final grade. Exams will consist of multiple-choice, short answer and/or essay questions. A comprehensive final exam will be given to anyone who wishes to replace one of the four exams administered during the semester. It should be noted that if the final exam is taken to replace an exam, the grade for the final exam will be used for final grade determination even if the score is lower than the replaced grade.

In class quizzes (20% of your final grade) – There will be 12 quizzes given throughout the semester, and the highest 10 scores will be used to calculate your quiz grade. Thus, each quiz will comprise 2% of your grade and you can miss two quizzes without a penalty. Quizzes will generally consist of 1-5 questions to be answered either alone or in consultation with your classmates (as directed by Dr. Whiteley).

Grading scale:

100-90% = A

89-80% = B

79-70% = C

69-60% = D

<60% = F

Extra credit: Stump the professor: Throughout the semester, Dr. Whiteley will announce a stump the professor competition. Students will ask RELEVANT microbiology questions to Dr. Whiteley at the end of class. If Dr. Whiteley does not know the answer to the question, all students present in class that day (or that have a validated excuse for their absence) will receive an extra point on the next exam. More information will be provided in class.

Expectations: Students are responsible for knowing the material covered in lectures. Students are expected to read the assigned readings/PowerPoints prior to class to aid in their understanding and participation during lectures. Lecture information will NOT come entirely from the readings and PowerPoints, instead this information is meant to stimulate broader discussion. Students are also expected to be proactive, meeting with their TA or instructor should they encounter difficulties in the class, require assistance, or have any unanswered questions. **Materials to review before each class will be posted on Canvas before the lecture.**

Classroom policies:

Policy of Classroom Learning Environment: Refrain from any behavior that can be a distraction to other students. This includes: casual conversation, whispering, laughing, note passing, cell-phone use, texting, and eating (beverages are fine). In order to create an environment where everyone can focus and learn, cell phones are strictly prohibited during class. Laptops can be used for classroom activities including note-taking and viewing classroom materials. You are not permitted to use your laptop for any other activity such as watching videos, surfing the internet, etc. The TA will be monitoring cell phone and laptop usage during class and if you are found to be in violation of this policy you will be asked to leave and will forfeit your quiz points for that day.

Lateness: Please be on time. If you are late and miss an exam/quiz or part of an exam/quiz, you will not be given an opportunity to make it up. You will not be allowed to stay past the end of class to finish exams, no matter how late you came in.

Excuses and Make-ups: Documentation of excused absence must be obtained through the Office of the Dean of Students (<https://studentlife.gatech.edu/dean-students/class-attendance>) and provided by the class period immediately following the quiz or exam missed.

Quizzes: There are no make-up quizzes since you are allowed to miss two quizzes without a penalty. If you miss more than 2 quizzes each with a valid excuse, you must inform Dr. Whiteley within 3 days of the missed quiz and you will be given an outside class assignment by Dr. Whiteley for each missed quiz. If you do not have a valid excuse, you will receive a 0 for that quiz.

Exams: If you miss an exam and have a valid excuse, you can make up the exam during the instructor's office hours (or at another pre-arranged time) within 3 days of the missed exam. If you do not have a valid excuse, you will receive a 0 for that exam.

Regrade requests: Any request for a reconsideration of the grading of a question on an exam or quiz must be submitted to Dr. Whiteley in writing within 1 week of receiving the graded exam. This request must include a clear explanation of why you think your answer should be considered correct. **The entire exam will be regraded.**

GT Honor Code: All students are expected to follow the Georgia Tech Academic Honor Code (www.honor.gatech.edu). Violations will be taken very seriously. Examples of academic honor violations from the policy statement include committing or attempting: 1) plagiarism, 2) cheating, 3) unauthorized group work, 4) fabrication, falsification and misrepresentation.

AI Use Policy: The use of generative artificial intelligence tools (including but not limited to ChatGPT, Gemini, Copilot, or similar systems) is not permitted on any exams, quizzes, or graded assignments in this course unless explicitly stated otherwise by the instructor. Submitting work that was produced in whole or in part by AI tools, without explicit instructor permission, is considered unauthorized assistance and may result in an Academic Honor Code violation.

Americans with Disabilities Act: Students with disabilities needing academic accommodation should:

- (1) register with and provide documentation to the ADAPTS Disability Services Program (<https://disabilityservices.gatech.edu/>); and
- (2) bring a letter to Dr. Whiteley indicating the need for accommodation and what type.

This should be done or discussed with Dr. Whiteley during the first two weeks of class or as soon as possible after registering. This syllabus and other class materials are available in alternative format upon request.

Syllabus change policy: Syllabus changes substantially affecting the grading of the course will not be made. Other syllabus changes may be made and will be announced.

Course Outline:

Topics Covered

Introduction: History/phylogeny
Cell structure
Cell structure/growth
Cell growth
Metabolism
DNA/RNA biosynthesis
Protein biosynthesis/structure
Cell Division
Antimicrobials
Bacteriophage
Microbial genetics
Transcriptional regulation
Phylogeny/microbiome
Microbiome
Genomics
Archaea
Quorum Sensing
Microbial Ecology
Microbial Ecology
Virology
Virology
Mycology
Immunology
Immunology