COURSE SYLLABUS
BIOS 4418/BIOL 6418 MICROBIAL PHYSIOLOGY
SPRING SEMESTER 2027
PROFESSOR DICHRISTINA

I. COURSE INFORMATION

Scheduled class time: MW 2:00-3:15 PM
Required class material: Hard copies of PowerPoint slides will be provided at each lecture
Prerequisite: Permission from Instructor
Office hours: By appointment
E-mail address: thomas.dichristina@biology.gatech.edu

II. COURSE FORMAT

In addition to the Monday and Wednesday lectures, Tuesday classes will also include 15-minute presentations on current hot topics in microbiology (2026 and 2027 microbiology papers published in Science or Nature). According to student preference, Dr. DiChristina will meet each student either remotely or in-person to discuss quiz results. Final grades will be based on one Tuesday presentation, two mid-term quizzes, and a final exam (weighted values below)

III. COURSE DESCRIPTION

Microbial Physiology examines the metabolic strategies by which microorganisms obtain the energy and nutrients required to propagate on Earth and potentially other planets. Microorganisms employ a myriad of metabolic strategies and individual microbial species may be differentiated based on metabolic characteristics. Specific microbial metabolic properties determine microbial ecological niches in nature (and vice versa), drive industrial processes, and catalyze the biogeochemical cycling of elements, which impact crucial global processes such as climate change.

IV. COURSE MATERIALS

Recommended Textbook:
Brock Biology of Microorganisms
Authors: Madigan, Martinko, Bender, Buckley, Stahl, and Brock
ISBN-13: 978-0-321-89739-8
Publisher: Pearson

V. GRADING SCALE (CURVED):

Graduate Students:
Two midterm exams: 25% each
Final Exam (Semi-cumulative): 40%
Tuesday 15-minute summary of 2026 and 2027 Science or Nature paper: 10%

Undergraduate Students:
Two midterm exams: 25% each
Final Exam (Semi-cumulative): 50%
Curved separate from graduate students

VI. EXPECTATIONS:

Students are responsible for understanding the material covered in lectures. Students may (but are not required) to read the assigned chapters prior to class to aid in their understanding and participation during lectures. Lecture information will not come entirely from the textbook. Students are also responsible for

understanding the material covered in the lectures, even if it has not been covered in the textbook, *Brock Biology of Microorganisms*. Students are responsible for obtaining any missed information, instructions or materials that result from a missed lecture. Students are also expected to be proactive, meeting with Dr. DiChristina if they encounter difficulties in class, require assistance, or have any unanswered questions.

VII. CLASS POLICIES

Consideration: We will look up information on cell phones during class, but silence cell phone ringers.

Lateness: I will finish class at 3:15 PM, so be sure to arrive on-time at 2:00 PM.

Excuses and make-up quizzes: Documentation of excused absence must be obtained through the Office of the Dean of Students (http://deanofstudents.gatech.edu) and provided by the class period immediately following the quiz missed. Valid excuses include personal emergencies such as being hospitalized, or being in a car accident, excused absence due to official school event, family event over which you do not have control, such as a funeral. If you have a valid excuse, you can make up the quiz during the instructor's office hours (or at another pre-arranged time). If you do not have a valid excuse, you will not receive any credit for that exam.

Regrade requests: Any request for a reconsideration of the grading of a question on a quiz should be submitted to Dr. DiChristina via email. This request must include a clear explanation of why you think your answer should be corrected.

Academic integrity: Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For information on Georgia Tech's Academic Honor Code, please visit http://www.catalog.gatech.edu/policies/honor-code/ or http://www.catalog.gatech.edu/rules/18/. Students suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Accommodations for students with disabilities: If you are a student with learning needs and require special accommodation, contact the Office of Disability Services at **404-894-2563** or http://disabilityservices.gatech.edu/, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail Dr. DiChristina as soon as possible in order to set up a time to discuss your learning needs.

VIII. CAMPUS RESOURCES FOR STUDENTS

In your time at Georgia Tech, you may find yourself in need of academic and personal support. Below you will find some resources to support you both as a student and as a person.

ACADEMIC SUPPORT

- Center for Academic Success http://success.gatech.edu
    - 1-to-1 tutoring http://success.gatech.edu/1-1-tutoring
    - Peer-Led Undergraduate Study (PLUS) http://success.gatech.edu/tutoring/plus
    - Academic coaching http://success.gatech.edu/coaching
- Residence Life Learning Assistance Program https://housing.gatech.edu/learning-assistance-program
    - Drop-in tutoring for many 1000 level courses
- OMED: Educational Services (http://omed.gatech.edu/programs/academic-support)
    - Group study sessions and tutoring programs
- Communication Center (http://www.communicationcenter.gatech.edu)
    - Individualized help with writing and multimedia projects

- Academic advisors for your major
  http://advising.gatech.edu/

PERSONAL SUPPORT:

Georgia Tech Resources

- The Office of the Dean of Students: http://studentlife.gatech.edu/content/services; **404-894-6367**; Smithgall Student Services Building 2nd floor
  - You also may request assistance at https://gatech-advocate.symplicity.com/care_report/index.php/pid383662?
- Counseling Center: http://counseling.gatech.edu; **404-894-2575**; Smithgall Student Services Building 2nd floor
  - Services include short-term individual counseling, group counseling, couples counseling, testing and assessment, referral services, and crisis intervention. Their website also includes links to state and national resources.
  - Students in crisis may walk in during business hours (8am-5pm, Monday through Friday) or contact the counselor on call after hours at **404-894-2204**.
- Students' Temporary Assistance and Resources (STAR): http://studentlife.gatech.edu/content/need-help
  - Can assist with clothing, food, and housing needs.
- Stamps Health Services: https://health.gatech.edu; **404-894-1420**
  - Primary care, pharmacy, women's health, psychiatry, immunization and allergy, health promotion, and nutrition
- OMED: Educational Services: http://www.omed.gatech.edu
- Women's Resource Center: http://www.womenscenter.gatech.edu; **404-385-0230**
- LGBTQIA Resource Center: http://lgbtqia.gatech.edu/; **404-385-2679**
- Veteran's Resource Center: http://veterans.gatech.edu/; **404-385-2067**
- Georgia Tech Police: **404-894-2500**

IX. 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.

X. Statement of intent for inclusivity: As a member of the Georgia Tech community, I am committed to creating a learning environment in which all my students feel safe and included. Because we are individuals with varying needs, I am reliant on your feedback to achieve this goal. To that end, I invite you to enter into a dialogue with me about the things I can stop, start, and continue doing to make our class an environment in which every student feels valued and can engage actively in our learning community.