SPRING 2021

MIBO 4090/6090
PROKARYOTIC BIOLOGY

CRN 56988/57013 with prerequisite MIBO 3500

EXPERIENCING A DEEPER UNDERSTANDING OF PROKARYOTES

The goal of this course is to learn prokaryotic structure, growth, central dogma mechanisms, and diversity at a molecular level. We will be diving deep into details of various bacterial and archaeal organisms where vast differences and intriguing similarities exist. We want you to apply information into various scenarios and not simply memorize facts and details. To help you through this process, we will employ practice scenarios, discussions, short presentations, and many, many questions. There will not always be perfect answers to give. We'll explore areas where research is still needed and unknowns still exist.

This class is taught hybrid synchronously which means you will be attending class **three times a week in-person** in Room 326, Biological Sciences. Mondays and Fridays are 50 minute class periods and Wednesdays are 100 minute class periods. If you must quarantine or have a medical issue, you can attend synchronously and **virtually via Zoom**.

YOUR INSTRUCTORS AND COURSE FORMAT

DR. TIM HOOVER
TRHOOVER@UGA.EDU

DR. JENNIFER WALKER
JRSWALK@UGA.EDU

Class sessions: Mondays and Fridays, 9:10-10:00 AM (discussion of course material) Wednesdays, 9:10-11:05 AM (discussion/presentation of peer-reviewed articles; in-class work sessions)

Communication: You may email course questions directly to Dr. Hoover and/or Dr. Walker. Please include both in your email if discussing attendance or accommodation issues. We will do our best to reply within 24 hours weekdays.

Attendance: Due to the small class size, attendance in-person is expected with the exception for medical concerns including quarantine. All quizzes, exams, and assignments will be done during class time. Recorded class sessions and makeups for any missed in-class activities, quizzes, or exam will be only given for excused absences such as documented illness, family emergencies, and academic activities. 10 points will be deducted for each unexcused absence.

Accommodations: Students with a disability or health-related issue who need class accommodations should email Dr.Hoover and Dr. Walker directly.

COURSE POINT BREAKDOWN

COURSE HOMEWORK (100 PTS) 30%

EXAMS (2) (50 PTS. EACH) 30%

TERM PAPER (60 PTS) ~20%

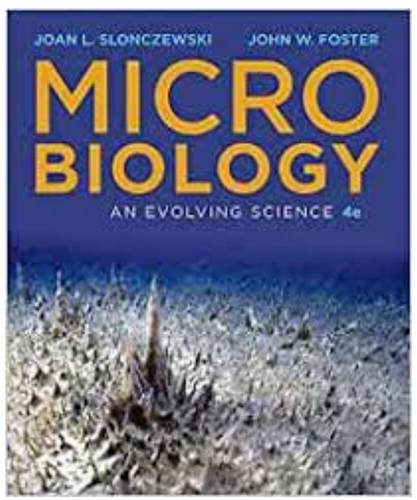
FEEDBACK/ATTENDANCE (60 PTS)~20%

INTERVIEW - MUST PASS

MIBO 6090 REQUIREMENT - SCORE 3.5/5 OR HIGHER ON WED. PRESENTATIONS

TOTAL: 320 POINTS, 100%

TEXTBOOK AND TECHNOLOGY



Microbiology: An Evolving Science, 4th ed. by Slonczewski and Foster, W. W. Norton Publishing. ISBN: 0393614034
Additional information will be presented and shared through eLC. Access is at https://uga.view.usg.edu/d2l/home and searching for MIBO 4090/6090.

You are encouraged to purchase/rent a physical copy (hardbound, binder) or select an ebook version. Course material will be based on the 4th edition of this textbook. Please do not use an older edition as terms have changed in the textbook. Copies of the textbook are available to use on campus at Biological Sciences, room 327 or at the Science Library.

Access to the internet via computer will be needed during class time. You may bring your own computer or use the desktop computers supplied in room 326. For those who may need to attend virtually on some days, a microphone and video camera is needed and a connection to Zoom Use the link https://zoom.us/ and enter the code provided on eLC.

GOALS AND TOPICAL OUTLINE

(i) equip students to identify and critically evaluate credible sources for information related to microbiology
(ii) engage students in active learning;
(iii) introduce students to online resources for analyzing proteins and genes;
(iv) instill confidence in students sense of mastery of core concepts in microbiology;
(v) help students develop skills in scientific writing and graphic data analysis

Unit 1 – how prokaryotic cells generally grow, divide, and communicate: both intracellularly and with each other; ultrastructural differences between Gram-negative, Gram-positive, and archaea; mechanisms of bacterial cell:cell communication

Unit 2 – the molecular systems that drive replication, transcription, and translation; the ability to understand how these systems are regulated should allow each student to understand the phenotypic outcome of a given signaling condition.

Unit 3 - the phylogenetic and taxonomic classification of bacteria and archaea; students should be able to recall some of the distinct characteristics of specific prokaryotic organisms

COURSE COMPONENTS

Exams: There will be a midterm and final exam during designated class times each worth 50 points (total 100 points). All exams will consist of a mixture of short answer, fill-in-the-blank, and multiple choice.
Re-grades: exams and homework may be re-graded for up to one week after being returned to the student.

Homework: Each homework is worth a total of 10 points each and 10 will be available throughout the semester (possible 100 points total). Homework will be made available on eLC a week before the due date and will cover topics presented in class. Homework can be uploaded into the corresponding assignment dropbox on eLC.

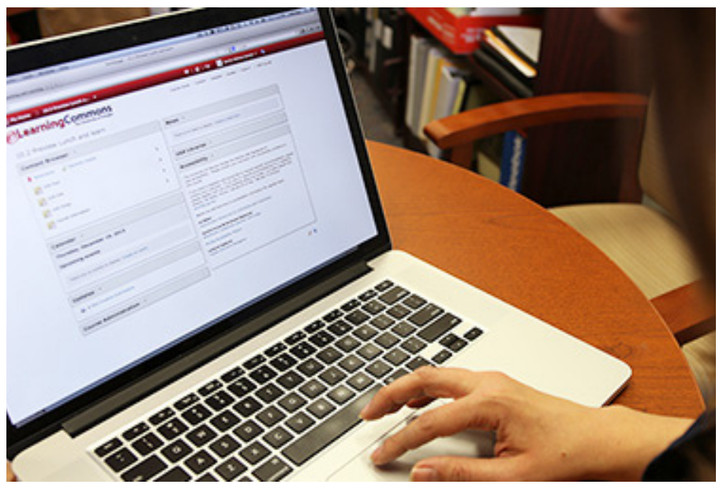
Paper: A 2-3 page written paper on a selected topic is due at the end of the semester (see details in eLC). A variety of topics will be posted for you to select and periodic deadlines will be set for various aspects of the paper. Peer review and instructor feedback will be provided throughout the semester.

Interview: During the semester, Dr. Hoover and Dr. Walker will host one-on-one interviews with each student. The interview will be graded on a Pass/Fail. Please come dressed appropriately for the Zoom interview and be ready to discuss your 4090 term paper. If assigned a Fail, you may schedule one more interview to Pass. A passing grade will be assigned for on-time attendance, preparation, attentiveness, and good presentation.

Group presentations: On Wednesdays we will be discussing review articles and primary literature. MIBO 6090 students will prepare presentations of the review article. All students will be arranged in groups of three and assigned a portion of the primary literature to present and lead discusion during class time. Midterm and end of semester assessments will be given by instructors as well as group evaluations by peers. This will count toward the Group Feedback/Attendance grade of 60 points.

All due dates/times are listed in the schedule are final. Assignments, exams or activities turned in after the due date/time WILL NOT be accepted and be scored as a zero. As a courtesy, all assignment/activity due dates and exam dates will announced on eLC.

UNIVERSITY WIDE



During this semester, you as the student, have agreed to abide by the **UGA Student Honor Code**: "I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others." A Culture of Honesty, the University's policy and procedures for handling cases of suspected dishonesty, can be found at www.uga.edu/ovpi. This means all homework is done individually and with answers generated personally. Copied content from electronic or paper sources is deemed plagiarism. All exams will be taken individually and without the assistance of others nor includes the sharing of information from exams.

If you plan to request accommodations for a disability, please register with the **Disability Resource Center**. They can be reached by visiting Clark Howell Hall, calling 706-542-8719 (voice) or 706-542-8778 (TTY), or by visiting http://drc.uga.edu.

Mental Health and Wellness Resources:

If you or someone you know needs assistance, you are encouraged to contact Student Care and Outreach in the Division of Student Affairs at 706-542-7774 or visit https://sco.uga.edu/. They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services.

UGA has several resources for a student seeking mental health services (https://www.uhs.uga.edu/bewelluga/bewelluga) or crisis support (https://www.uhs.uga.edu/info/emergencies).

If you need help managing stress anxiety, relationships, etc., please visit BeWellUGA (https://www.uhs.uga.edu/bewelluga/bewelluga) for a list of FREE workshops, classes, mentoring and health coaching led by licensed clinicians and health educators in the University Health Center.

Additional resources can be accessed through the UGA App.

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.