SWS 5305C

SOIL MICROBIAL ECOLOGY

Credit Hours: 3
Semester: FALL 2024
On-campus class location: MCCB 3108
On-campus meeting times: W Period 6 (12:50 – 1:40 pm)

INSTRUCTOR: Dr. Julie Meyer, CGRC 304, juliemeyer@ufl.edu, (352) 273-8189

OFFICE HOURS: Student hours are available by appointment.

COURSE WEBSITE: https://ufl.instructure.com/courses/

COURSE COMMUNICATIONS: Students may ask questions by contacting the instructor by email or through CANVAS.

REQUIRED TEXTBOOK: None. Reading assignments and materials will be available through CANVAS/UF e-learning.

MATERIALS AND SUPPLIES FEES: None.

COURSE DESCRIPTION: This course will cover soil as a microbial habitat, the diversity of soil microbial life, symbiotic interactions, and the role of soil microorganisms in biogeochemical cycles. The course will also cover a variety of methods for the study of soil microbial ecology.

PREREQUISITES: BSC 2005 and BSC 2005L (Biological Sciences for Non-Majors) or BSC2010 and BSC2010L (Integrated Principles of Biology).

COURSE GOALS AND/OR OBJECTIVES: The central objective of this course is to foster the student's ability to solve problems related to soil microbial ecology. The development of problem-solving skills will require an in-depth understanding of microbial ecology concepts and methodologies for identifying and characterizing soil microbial life.

By the end of the course, the student will be able to:

- Analyze the physiological basis for microbial activities in soil and translate those to ecological interactions and processes.
- Discuss the fundamental physiology and ecology underlying many of the important biogeochemical cycles in soils, including carbon, nitrogen, and sulfur cycles.
- Identify appropriate methods for addressing fundamental questions in soil microbial ecology.

INSTRUCTIONAL METHODS: This course is provided in a fully in-person format. Readings and other instructional materials are available through CANVAS/UF e-learning.

COURSE POLICIES:

ATTENDANCE POLICY: It is the instructor's expectation that each student will keep up with posted lectures, readings, and other assignments. Requirements for make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

EXAM DATES/POLICIES: There will be one midterm and one final exam. Exams will be administered in person with proctoring by the instructor.

MAKE-UP POLICY: If an extenuating circumstance, such as a family or medical emergency, leads to missed assignments, please contact the dean of students office with documentation of your absence. They will notify your instructors, who will then make appropriate extensions for the missed work.

ASSIGNMENT POLICY: All assignments are open on the first day of the semester and all due dates are posted before the start of the semester in the syllabus. As such, late assignments will not be accepted for credit in the absence of extenuating circumstances. No extra credit assignments will be accepted. The course is designed so that students can earn points from a variety of assignment types.

COURSE TECHNOLOGY: All course materials, including recorded lectures, readings, assignments, and quizzes will be administered through CANVAS/UF e-learning. For help with CANVAS, please contact the UF Help Desk:

- http://helpdesk.ufl.edu
- (352) 392-HELP - select option 2

ONLINE COURSE EVALUATION: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing online evaluations via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

UF POLICIES:

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES: Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting disability.ufl.edu/students/get-started. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

UNIVERSITY POLICY ON ACADEMIC CONDUCT: UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

CLASS DEMEANOR OR NETIQUETTE: All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions, and chats.

SOFTWARE USE: All faculty, staff, and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

GETTING HELP:

For issues with technical difficulties for Canvas, please contact the UF Help Desk at:

- http://helpdesk.ufl.edu
- (352) 392-HELP (4357)
- Walk-in: HUB 132

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from the Help Desk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at http://www.distance.ufl.edu/getting-help for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should you have any complaints with your experience in this course please visit http://www.distance.ufl.edu/student-complaints to submit a complaint.

GRADING POLICIES:

METHODS BY WHICH STUDENTS WILL BE EVALUATED AND THEIR GRADE DETERMINED

The final grade reflects the individual student's mastery and comprehension of the subject material presented during the semester. The grading will not be based on a bell curve. Weighting of assignments/exams is listed in the table below.

Assignment Weights	
Assignments	20%
Discussions	20%
Graded quizzes	30%
Exams	30%
Total	100%

GRADING SCALE:

91-100%	A
89-90.9%	A-
85-88.9%	B+
83-84.9%	B
79-82.9%	B-
75-78.9%	C+
73-74.9%	C
69-72.9%	C-
65-68.9%	D+
63-64.9%	D
59-62.9%	D-
below 58.9%	E

INFORMATION ON CURRENT UF GRADING POLICIES FOR ASSIGNING GRADE POINTS:

Current UF Grading policies are found here:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

COURSE SCHEDULE:

Below is the tentative course schedule for Soil Microbial Ecology for Fall 2023. This schedule is subject to modification at the discretion of the instructor.

Module	Topic	Assignment Due Dates
0	Course Orientation	Course Orientation Quiz due 9/1 Introductions Discussion due 9/1
1	Soil as a Microbial Habitat	Quiz 1 due 9/8
2	Diversity of Soil Life I	Quiz 2 due 9/15 Perusall discussion due 9/13
3	Diversity of Soil Life II	Quiz 3 due 9/22 Perusall discussion due 9/18
4	Soil Biotic Interactions	Quiz 4 due 9/29 Perusall discussion due 9/25
5	Genetic Techniques	Quiz 5 due 10/6 Methods discussion due 10/2
6	Physiological & Biochemical Techniques	Quiz 6 due 10/13 Methods discussion due 10/9
	Mid-term Exam	Mid-term exam due 10/20
7	Microbial Genetics	Quiz 7 due 10/27 Mid-term exam due 10/23
8	Microbial Metabolism	Quiz 8 due 11/3 Perusall discussion due 10/30
9	Carbon	Quiz 9 due 11/10 Perusall discussion due 11/6
10	Nitrogen	Quiz 10 due 11/17 Perusall discussion due 11/13
11	Sulfur, Phosphorus, & Iron	Quiz 11 due 11/24 Perusall discussion due 11/20
12	Microbiome Engineering	Quiz 12 due 12/8 Perusall discussion due 12/4 Build-a-Bacterium due 12/8
	Final Exam	Final exam due 12/14