PVAMU Course Syllabus – Fall 2016

Soil Microbiology

Department of	**Agriculture, Nutrition & Human Ecology**	**College of**	**Agriculture and Human Sciences**

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Office Hours:	**M 10-11 and 1-2; W 10-11 and 1-2**
Virtual Office Hours:	

Course Location:	AGBUS Room 115
Class Meeting Days & Times:	**MW** 11:00 AM - 12:50 PM
Course Abbreviation and Number:	AGRO 4613
Catalog Description:	Soil Microbiology. (2-2) Credits 3 semester hours. Role of soil microorganisms in soil-plant ecosystems. Microbial ecology, microbes in nutrient cycles important to agriculture, pesticide degradation, bacterial fertilizers, composting, waste disposal, plant microbe interactions. Laboratory estimation of soil microbial populations and measurement of important biological processes in soil and current methods.

Prerequisites:	None
Co-requisites:	None
Required Text:	None
Recommended Text:	Title: Principles and Applications of Soil Microbiology Authors: David M. Sylvia, Peter G. Hartel, Jeffry J. Fuhrmann, and David A. Zuberer Edition: 2nd; Copyright 2005 Publisher: Pearson Education Inc., Upper Saddle River, NJ07458 ISBN: 0-13-094117-4

Access to Learning Resources:	PVAMU Library: phone: (936) 261-1500; web: http://www.tamu.edu/pvamu/library/ University Bookstore: phone: (936) 261-1990; web: https://www.bkstr.com/Home/10001-10734-1?demoKey=d

Course Objectives/Accrediting Body *(NCATE, ABET, NAAB, etc…)* **Standards Met:** *(standards will depend on the course)*

1. To help students keep abreast of the most recent advances in soil microbiology.

2. To provide students with knowledge concerning soil microorganisms both harmful and beneficial

and how to control and enhance each respectively.

3. To provide students with useful information regarding the taxonomical, physiological, and environmental aspects of soil microorganisms.

4. To learn the roles of soil microbes, such as decomposing dead organic matter, enriching the soil with nutrients, increasing water infiltration, improving soil texture, etc.

5. To acquire knowledge on such topics as: organisms and interactions, mycorrhizal symbioses, biological dinitrogen fixation (both symbiotic and non-symbiotic).

Course Outcomes:

		Alignment with Academic Program		Alignment with Core Curriculum
1	Attainment of course objectives will mean realization of the various beneficial effects of soil microorganisms on soil health, which is instrumental in the production of food and fiber. Conversely, students learned that some soil microbes are deleterious to agronomic crops.			
2	Students will learn that some soil animals and what they eat are of ecological importance; thus, plant-eating insects and mollusks may add organic matter to the soil; insects, arachnids, and worms that consume dung and plant litter mix it with soil and speed up its decay; and, plant parasitic nematodes reduce soil's productivity.			
3	Students will learn that the soil is an excellent habitat for multitude of microorganisms balancing the soil ecosystem			
4	The knowledge acquired in Soil Microbiology will enhance the students' competency in the performance of their duties as future employees in the field of Agronomy/Soil Science.			

Course Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course. *Note: See Program Outcomes in True Outcomes*

Exams – written tests designed to measure knowledge of presented course material
Exercises – written assignments designed to supplement and reinforce course material
Projects – web development assignments designed to measure ability to apply presented course material

Grading Matrix *(points will vary according to instructor's grading system)*

Instruments	**Value (points or percentages)**	**Total**
Three Exams	15 each	45
Lab/Class Participation	10	10
PowerPoint Presentation	10	10
Quizzes	10	10
Final Exam	25	25
Total:		**100**

Grade Determination:

A = 90 – 100pts;
B = 80 – 89 pts;
C = 70 – 79 pts;
D = 60 – 69 pts;
F = 0 – 59 pts or below

COURSE CONTENTS (TOPICS)

1. Introduction and Historical Perspective
2. The Soil Habitat
3. Microbial Metabolism
4. Microbial Ecology
5. Bacteria and Archaea

EXAM 1 Chapters 1- 5

6. Fungi
7. Cyanobacteria and Algae
8. Fauna

EXAM 2 Chapters 6 - 8

9. Viruses
10. Microbial Ecology
12. Mycorrhizal Symbioses

EXAM 3 Chapters 9, 10, 12

13. Carbon Transformations and Soil Organic Matter Formation
14. Transformations of Nitrogen
15. Biological Dinitrogen Fixation: Introduction and Nonsymbiotic
16. Biological Dinitrogen Fixation: Symbiotic

Final Exam 4 Chapters 13 –16

Submission of Assignments:
Observe deadlines for submitting assignments and term papers to avoid a 10 % penalty for each.

Formatting Documents:
Microsoft Word is the standard word processing tool used at PVAMU. If you're using other word processors, be sure to use the "save as" tool and save the document in either the Microsoft Word, Rich-Text, or plain text format.

Exam Policy
Exams should be taken as scheduled. No makeup examinations will be allowed except under documented emergencies (See Student Handbook).

Anyone caught cheating during an examination will get a **ZERO** for that examination.

CALENDAR (Fall 2016):

General Assembly (All Students Attend)	August 31, 2016
Labor Day Holiday	September 5, 2016
Last date to Apply for Fall 2015 Graduation	September 7, 2016
Mid-Term Exams	October 13-15, 2016
Last date to Withdraw from classes with automatic grade of "W"	October 31, 2016
Graduation Application Deadline for Spring 2017 Graduation	November 11, 2016
Thanksgiving Holiday	November 24-26, 2016
Last Class Day	November 29, 2016
Final Exam Period	Nov. 30 - Dec. 6, 2016
Commencement	December 10, 2016

Look for the 9 Rules of the A-Game: Rule 1: Go to Class-Always; Rule 2: Never Sit in the Cheap Seats; Rule 3: Come to Class Prepared; Rule 4: When Lost, Ask Questions; Rule 5: Get Spaced Out; Rule 6: Develop Learning Objectives; Rule 7: Learn Material at All Levels; Rule 8: Use Learning Checks & Self-Testing; Rule 9: Be Exam Savvy

University Rules and Procedures

Disability statement (See Student Handbook):
Students with disabilities, including learning disabilities, who wish to request accommodations in class should register with the Services for Students with Disabilities (SSD) early in the semester so that appropriate arrangements may be made. In accordance with federal laws, a student requesting special accommodations must provide documentation of their disability to the SSD coordinator.

Academic misconduct (See Student Handbook):
You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.

Forms of academic dishonesty:

1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered; giving or receiving aid unauthorized by the instructor on assignments or examinations.

2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test.

3. Fabrication: use of invented information or falsified research.

4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else's words, ideas, or data as one's own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one's own work also constitutes plagiarism.

Nonacademic misconduct (See Student Handbook)
The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor's ability to conduct the class, (2) the inability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. Such incidents will be adjudicated by the Dean of Students under nonacademic procedures.

Sexual misconduct (See Student Handbook):
Sexual harassment of students and employers at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.

Attendance Policy:
Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student's course grade being reduced or in assignment of a grade of "F". Absences are accumulated beginning with the first day of class.

Student Academic Appeals Process
Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor's assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.

Technical Considerations for Online and Web-Assist Courses

Minimum Hardware and Software Requirements:
-Pentium with Windows XP or PowerMac with OS 9
-56K modem or network access
-Internet provider with SLIP or PPP
-8X or greater CD-ROM
-64MB RAM
-Hard drive with 40MB available space
-15" monitor, 800x600, color or 16 bit
-Sound card w/speakers
-Microphone and recording software
-Keyboard & mouse
-Netscape Communicator ver. 4.61 or Microsoft Internet Explorer ver. 5.0 /plug-ins
-Participants should have a basic proficiency of the following computer skills:
·Sending and receiving email
·A working knowledge of the Internet
·Proficiency in Microsoft Word
·Proficiency in the Acrobat PDF Reader
·Basic knowledge of Windows or Mac O.S.

Netiquette (online etiquette): students are expected to participate in all discussions and virtual classroom chats when directed to do so. Students are to be respectful and courteous to others in the discussions. Foul or abusive language will not be tolerated. When referring to information from books, websites or articles, please use APA standards to reference sources.

Technical Support: Students should call the Prairie View A&M University Helpdesk at 936-261-2525 for technical issues with accessing your online course. The helpdesk is available 24 hours a day/7 days a week. For other technical questions regarding your online course, call the Office of Distance Learning at 936-261-3290 or 936-261-3282

Communication Expectations and Standards:
All emails or discussion postings will receive a response from the instructor within 48 hours.
You can send email anytime that is convenient to you, but I check my email messages continuously during the day throughout the work-week (Monday through Friday). I will respond to email messages during the work-week by the close of business (5:00 pm) on the day following ***my receipt*** of them. Emails that I receive on Friday will be responded to by the close of business on the following Monday.

Submission of Assignments:
Assignments, Papers, Exercises, and Projects will distributed and submitted through your online course. Directions for accessing your online course will be provided. Additional assistance can be obtained from the Office of Distance Learning.

Discussion Requirement:
Because this is an online course, there will be no required face to face meetings on campus. However, we will participate in conversations about the readings, lectures, materials, and other aspects of the course in a true seminar fashion. We will accomplish this by use of the discussion board.
Students are required to log-on to the course website often to participate in discussion. It is strongly advised that you check the discussion area daily to keep abreast of discussions. When a topic is posted, everyone is required to participate. The exact use of discussion will be determined by the instructor.
It is strongly suggested that students type their discussion postings in a word processing application and save it to their PC or a removable drive before posting to the discussion board. This is important for two reasons: 1) If for some reason your discussion responses are lost in your online course, you will have another copy; 2) Grammatical errors can be greatly minimized by the use of the spell-and-grammar check functions in word processing applications. Once the post(s) have been typed and corrected in the word processing application, it should be copied and pasted to the discussion board