BIOL 1073 General Microbiology
Spring

Instructor: Sangita Pal; Ph.D.

Section # and CRN:  P04/26899; P64/26917
P03/26895; P63/26912;
P05/26904; P65/26927;
P06/26907; P66/26934

Email Address: sapal@pvamu.edu
Office Hours: By appointment
Mode of Instruction: Face-to-Face

Course Location: O'Banion Science – 104 A (Lecture) Lab /308, 122(Lecture) Lab /308
Class Days & Times: MW  1-1.50PM;  F 9:00-10:50 AM;
MW 9-9.50 AM;  M 11AM-12.50 PM
W 11 AM-12.50PM
S 9-10.50 AM/ 11AM-12.50 PM

Catalog Description: Morphology and physiology of microorganisms related to health and sanitation; disinfection, growth, and control of those organisms causing common infectious diseases. Laboratory fee required.

Prerequisites: None
Co-requisites: None


Other Materials: Blue / black pens, #2 lead pencils, notebook paper, access to computer / printer, color pencils – red, blue, green, purple.

Student Learning Outcomes:

<table>
<thead>
<tr>
<th>Upon successful completion of this course, students will be able to:</th>
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</thead>
<tbody>
<tr>
<td>1 Demonstrates knowledge of the basic principles and concepts of life at the microscopic level as it pertains to microbes.</td>
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</table>
Comprehends the theoretical concepts in microbiology so that they may use this as a basis for future studies in other allied health fields.

Analyze the inter-relationships among the microorganisms and higher life forms.

Demonstrate the proper techniques and procedures of handling microscopic living organisms, many of which are pathogenic.

Employ effective teamwork skills with emphasis on listening, responding, and creating a positive climate.

Demonstrate laboratory investigations using safe, environmentally appropriate and ethical practices.

Major Course Requirements

Method of Determining Final Course Grade

Evaluation Procedures:

GRADE EVALUATION: Grades determined by performance, not needs or wants. Standard grading scale will be used: 100-90% = A; 89-80% = B; 79-70% = C; 69-60% = D

[This may change at the discretion of the instructor.]

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Value</th>
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<tbody>
<tr>
<td>4 lecture examinations @ 100 pts each</td>
<td>=400 pts</td>
</tr>
<tr>
<td>Homework / Research project</td>
<td>=100 pts</td>
</tr>
<tr>
<td>Participation</td>
<td>=100 pts</td>
</tr>
<tr>
<td>Lab Quizzes (@10 pts each)</td>
<td>=100 pts</td>
</tr>
<tr>
<td>Lecture Quizzes (@ 20 pts each)</td>
<td>=100 pts</td>
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<tr>
<td>Lab Final</td>
<td>=100 pts</td>
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<tr>
<td>1 Final exam @ 100 pts</td>
<td>=100 pts</td>
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<tr>
<td>Total:</td>
<td>=1000 pts</td>
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</table>
NOTES ABOUT GRADED MATERIALS:

- **LECTURE EXAMINATIONS**: NO MAKE-UPS!! The exam will begin at the beginning of class. You are allowed 20 minutes after the start of the exam to arrive and begin. The exams cannot be administered to any student arriving after that time. If an exam is missed, for extenuating circumstances, such as a death in the family or illness (acceptable documentation MUST be provided) the missed score will be replaced by the final exam % score. The lecture examinations will be a combination of multiple choice, true or false, matching and/or short answer questions.

- **LECTURE QUIZZES**: The quiz will be administered during the first 15 minutes of the class period; if you are late for class, you will have less time to finish the quiz. If you arrive after the quiz has been collected, you may not take the quiz.

- **LAB QUIZZES**: You will take 10 lab quizzes, not including the pre-lab quiz. The quiz will be administered during the first 15 minutes of the lab period; if you are late for lab, you will have less time to finish the quiz. If you arrive after the quiz has been collected, you may not take the quiz. IF you leave the lab after taking the quiz (without completing the lab exercise to the teacher’s satisfaction) your lab quiz for that day will not be graded (will receive a grade of zero). If you did not attend a lab, you cannot turn in a quiz for it.

- **PARTICIPATION**: Includes individual pop quizzes (based on reading assignments and the lecture) as well as group work during lecture. Thus, your active learning grade is a reflection of your effort to participate and attend class regularly. These cannot be made up if absent.

- **HOMEWORK**: It is your responsibility to get the homework if you are absent from class. Homework is due at the beginning of the period. Failure to submit the homework at that time will result in points lost for the assignment. If your homework is not submitted by the end of the period, you will get a zero for that assignment.

- **LAB FINAL**: The lab final will be comprehensive. Date and time will be given in class.

- **FINAL EXAM**: The final exam is comprehensive (labs and lectures included). It will consist of 50-100 multiple choice questions/true/false and short answer type questions. A Scantron sheet is required for this. Students are responsible to bring their own scantrons.
Course Procedures or Additional Instructor Policies

Taskstream

Taskstream is a tool that Prairie View A&M University uses for assessment purposes. One of your assignments may be considered an "artifact," an item of coursework that serves as evidence that course objectives are met. More information will be provided during the semester, but for general information, you can visit Taskstream via the link in eCourses.

Cell phone policy during exams

Cell phones must be secured within a backpack or purse during exams. The backpack or purse must be set aside, against a classroom wall and out-of-reach of any students. Any cell phones found on a person during an exam will result in an automatic “0” score on the exam.

Instructor Policies and Suggestions for Student Success:

1. Lecture will start promptly. If late by more than 5 minutes, please try to be as quiet as possible.
2. Turn off your mobile phone.
3. No use of headphones in the classroom.
4. Persistent talking among classmates during lecture will not be tolerated. A student may be asked to leave the classroom at the discretion of the instructor.
5. You are expected to take good care of all the equipment/materials provided to you in the lab. It is your responsibility to keep your working area and materials clean.
6. Consider this class as or more important than your job. It is not O.K. to leave lab early, or miss lab completely, because of work.

Letter Grade Assignment:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Final Average in Percent</th>
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<tbody>
<tr>
<td>A</td>
<td>89.5 - 100</td>
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<tr>
<td>B</td>
<td>79.5 - 89.4</td>
</tr>
<tr>
<td>C</td>
<td>69.5 – 79.4</td>
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<tr>
<td>D</td>
<td>59.5 – 69.4</td>
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<tr>
<td>F</td>
<td>0 – 59.4</td>
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<tr>
<td>Week Of</td>
<td>Chapter Title</td>
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<tr>
<td>Week 1</td>
<td>Pre-test, syllabus review, course materials review, personal data</td>
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<tr>
<td></td>
<td>Ch. 1 Introduction, Scope, and History of Microbiology</td>
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<tr>
<td>Week 2</td>
<td>Ch. 3 Cell Structure and Function / Ch 5 Microbial metabolism</td>
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<tr>
<td>Week 3</td>
<td>Ch 5 Microbial metabolism / Ch 6 Microbial Nutrition and Growth</td>
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<tr>
<td>Week 4</td>
<td>Ch 6 Microbial Nutrition and Growth / LECTURE EXAM 1 Chapters 1, 3 and 5</td>
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<tr>
<td>Week 5</td>
<td>CH 11. Characteristics of Prokaryotes</td>
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<td></td>
<td>CH 9: Controlling Microbial Growth in Environment</td>
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<tr>
<td>Week 6</td>
<td>CH 9: Controlling Microbial Growth in Environment</td>
</tr>
<tr>
<td>Week 7</td>
<td>CH 10: Controlling Microbial Growth in Body</td>
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<tr>
<td>Week 8</td>
<td>LECTURE EXAM 2: Chapters 6, 9, 10 and 11 / CH 14 Infection, Infectious diseases and Epidemiology</td>
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<tr>
<td>Week 9</td>
<td>Ch. 13: Viruses, Viroids &amp; Prions</td>
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<tr>
<td>Week 10</td>
<td>Ch. 13: Viruses, Viroid’s &amp; Prions</td>
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<td></td>
<td>CH 19. Microbial Diseases of the Skin and Wounds</td>
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<td>LECTURE EXAM 3: Chapters 13 and 14</td>
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<td>Week 12</td>
<td>CH 21/ Diseases of the Cardiovascular system</td>
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<td>Ch. 24 / CH 23 Diseases of the Digestive System</td>
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<td>LECTURE EXAM 4 Chapters 19, 21 and 23</td>
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<tr>
<td>Week 13</td>
<td>Research Project</td>
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<tr>
<td>Week 14</td>
<td>Review/Study day/ Research Project</td>
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<tr>
<td>Week 15</td>
<td>FINAL EXAM/ Comprehensive</td>
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**Holiday:**

- **Dr. Martin Luther King Day** – January 20 (Monday)
- **Spring Break** – March 09-14 (Monday-Saturday)
- **Easter Break** – April 10-11 (Friday – Saturday)
<table>
<thead>
<tr>
<th>Week Of</th>
<th>Lab week</th>
<th><strong>Exercise(s) to perform</strong></th>
<th>Note</th>
<th><strong>DUE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td></td>
<td>Lab safety /</td>
<td>Forms must be signed off</td>
<td>Biology Lab agreement</td>
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<tr>
<td>Week 2</td>
<td></td>
<td>Pre-quiz/ Lab 1</td>
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<tr>
<td>Week 3</td>
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<td>Lab 1 / Lab 2</td>
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<tr>
<td>Week 4</td>
<td></td>
<td>Lab 2</td>
<td></td>
<td>Lab 1 Quiz</td>
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<tr>
<td>Week 5</td>
<td></td>
<td>Lab 3</td>
<td></td>
<td>Lab 2 Quiz</td>
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<tr>
<td>Week 6</td>
<td></td>
<td>Lab 4</td>
<td></td>
<td>Lab 3 Quiz</td>
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<tr>
<td>Week 7</td>
<td></td>
<td>Lab 5</td>
<td></td>
<td>Lab 4 Quiz</td>
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<tr>
<td>Week 8</td>
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<td>Lab 6</td>
<td></td>
<td>Lab 5 Quiz</td>
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<tr>
<td>Week 9</td>
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<td>Lab 7</td>
<td></td>
<td>Lab 6 Quiz</td>
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<tr>
<td>Week 10</td>
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<td>Lab 8</td>
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<td>Lab 7 Quiz</td>
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<tr>
<td>Week 11</td>
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<td>Lab 9</td>
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<td>Lab 8 Quiz</td>
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<tr>
<td>Week 12</td>
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<td>Lab 10</td>
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<td>Lab 9 Quiz</td>
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<tr>
<td>Week 13</td>
<td></td>
<td>Review for Final Exam</td>
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<td>Lab 10 Quiz</td>
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<tr>
<td>Week 14</td>
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<td>Lab Final</td>
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Student Support and Success

John B. Coleman Library
The library and its partners have as their mission "to provide resources and instructional material in support of the evolving curriculum, as a partner in Prairie View A&M University's mission of teaching, research, and service" and to support the University's core values of "access and quality, diversity, leadership, relevance, and social responsibility" through emphasis on ten key areas of service. It maintains library collections and access both on campus, online, and through local agreements to further the educational goals of students and faculty.

Center for Academic Support
The Center for Academic Support (CAS) offers Tutoring via peer tutoring. The services include workshops (i.e., Save My Semester, Recalculate Your Route), seminars (i.e., Tools You Can Use: TI-84), group review sessions (i.e., College Algebra Topic Reviews, GRE Preparation), group study opportunities (i.e., TSIA, HESI, Study Break, Exam Cram), and test-taking strategies (How to take Notes, Study Buddy, 5 Day Study Guide). The Tutoring Center is a nationally certified tutoring program through the National Tutoring Association. The peer tutors are trained and certified by the coordinator each semester. Location: J.B. Coleman Library.

COMPASS
The Center for the Oversight and Management of Personalized Academic Student Success (COMPASS) is designed to help Prairie View students in their second year and beyond navigate towards graduation by providing the following services: Academic Advisement, Targeted Tutorials for Personalized Learning, Campus-Wide Referrals, and Academic & Social Workshops. Location: J.B. Coleman Library.

Writing Center
The Writing Center provides student consultants on all aspects of the writing process and a variety of writing assignments. Writing Center consultations assist students in such areas as prewriting, brainstorming, audience awareness, organization, research, and citation. Location: Hilliard Hall 121

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.

Disability statement (See Student Handbook):
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TECHNICAL CONSIDERATIONS

Minimum Recommended Hardware and Software:
- Intel PC or Laptop with Windows 7; Mac with OS X; Smartphone or iPad/Tablet with Wi-Fi
- High speed Internet access
• 8 GB Memory
• Hard drive with 320 GB storage space
• 15" monitor, 800x600, color or 16 bits
• Sound card w/speakers
• Microphone and recording software
• Keyboard & mouse
• Most current version of Google Chrome, Safari, Internet Explorer or Firefox

**Note:** Be sure to enable Java & pop-ups

**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 (or a program convertible to 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 as directed. Students are to be respectful and courteous to others on discussions boards. Foul or abusive language will not be tolerated.

**Technical Support:**
Students should go to https://mypassword.pvamu.edu/ if they have password issues. The page will provide instructions for resetting passwords and contact information if login issues persist. For other technical questions regarding eCourses, call the Office of Distance Learning at 936-261-3283.

**Communication Expectations and Standards:**
Emails or discussion postings will receive a response from the instructor, usually in less than 48 hours. Urgent emails should be marked as such. Check regularly for responses.

**Discussion Requirement:**
Online courses often require minimal to no face-to-face meetings. However, conversations about the readings, lectures, materials, and other aspects of the course can take place in a seminar fashion. This will be accomplished by the use of the discussion board. 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.
Lab Safety Agreement

As a student enrolled in Microbiology at PVAMU, I agree to use good laboratory safety practices at all times. I will:

1. Read the assigned lab prior to attending class.

2. Be aware of the location of safety equipment such as fire extinguishers, eye wash stations, fire blankets and first aid kits.

3. Understand that I will be working with potentially harmful organisms and must maintain the use of aseptic technique at all times.

4. **Never** bring food or drink into the lab.

5. **Never** place chemicals, pens, pencils, glassware, etc… in my mouth while in the laboratory.

6. Understand that open-toed shoes pose a hazard during laboratory classes and are **not allowed** in the microbiology lab. Also understand that contact lenses are an added safety risk.

7. Keep long hair and loose clothing constrained during experimentation.

8. Wash my hands with soap and warm water before and after performing laboratory experiments.

9. Report any injury to my hands before or during a lab. Use gloves if I have a cut, injury etc. on my hand. Students are required to bring their own gloves if needed.

10. Disinfect my work area before and after lab.

11. Keep your bench area free of clutter during an experiment.

12. **Microscope Use**

   Learn proper care and handling of microscopes. Use only a drop of oil when viewing specimens with the oil immersion lens. Never flood the slide with oil or allow oil to drip onto the condenser lens. Microscopes have to be cleaned after use. Remove the oil from the oil immersion lens using lens paper soaked in ethanol. Take care to not get oil on to other lenses while cleaning or viewing specimens. Store microscopes in the correctly labeled cabinet and use the proper storing technique as instructed.

13. Carefully label all media **before** inoculation with a sharpie marker. Students are required to bring their own sharpie markers. The recommended format for labels is: Your initials/Name of microorganism or unknown #/instructor’s name/date.

14. Report all accidents, including biohazardous and chemical spills, to the instructor immediately. Spills containing bacteria should be flooded with disinfectant immediately and allowed to soak for 20 minutes before wiping off.

15. **Disposal of Lab Materials**

   Dispose of all waste in the appropriate container as follows:
   - **Biohazard bin**: Inoculated or contaminated petri dishes, contaminated paper towels
Table-top mini Biohazard bag: Used swabs, disposable pipets
Discard racks by sink: Inoculated or contaminated culture tubes with caps on
Trash can: Uncontaminated paper towels and general trash
Broken glass container: Microscope slides, coverslips, broken glass

16. At no time will I pour anything down the drain, or place it in the trash can, without prior instruction.

17. Do not use tape to label culture tubes. Tape should only be used to hold and stack inoculated petri dishes when placing in an incubator.

18. Conduct myself in a professional manner, respecting both my personal safety and the safety of others in the lab.