Instructor Information

Instructor: Deborly Wade, Ph.D.
Office: Main Campus SCIB 110
Mailbox: Main Campus SCIB 110
Hours: MW 2:30-4:00p A128A, T 10:30-11a SCIB 105
Phone: 
Email: dwade@uaptc.edu

*All emails and telephone calls will receive a response within two business days.

Chair: Thomas Russell (501)812-2705 trussell@uaptc.edu
Dean: Marico Bryant Howe (501)812-2342 mbryanthowe@uaptc.edu

*If your emails and telephone calls do not receive a response within two business days, the appropriate chain of command is above.

Course Information

BIOL 2401 04 This course meets four times per week,

Monday: 10:50a-12:05p Lecture Room A139
2:30-4:00 p.m. Lab Room A128A

Wednesday: 10:50a-12:05p Lecture Room A139
2:30-4:00 p.m. Lab Room A128A

Catalog Description

This course is an introductory course in microbiological concepts, including the study of bacteria, viruses, fungi, and protozoa as they affect the human body. This course is designed for majors in health professions programs. See prerequisite details below. 3 lecture hours, 3 lab hours. (4 credit hours/special course fee)

Prerequisite: (must meet one of the following requirements)
• BIOL 1401 or BIOL 1402 with a grade of “C” or better
• Completion of high school AP/IB Biology with a grade of “B” or better, completion/testing out of all zero (0) level courses, and permission of the department chair
Course Materials


Electronic versions:

Instructor’s note: Students must have a lab manual. Alternative lecture and online materials will be provided by the instructor.

Internet Access: Students should have internet access to Blackboard for lecture, supplemental and/or study materials. Computers for student use are located throughout the campus.

UAPTC Mission Statement

University of Arkansas – Pulaski Technical College provides access to high-quality education that promotes student learning and enables individuals to develop to their fullest potential.

UAPTC Institutional Learning Outcomes and General Education

UA-PTC supports a college-wide institutional learning assessment program which concerns effective instructional methods and promotes student learning achievement by assessing:

1. Communication
2. Critical Thinking
3. Cultural Awareness
4. Information Literacy
5. Professionalism
6. Quantitative Literacy
7. Technology Literacy

For more information, please consult the following website: https://uaptc.edu/sla

Biology Department / Discipline or Program Learning Outcomes

The mission of Biology discipline at UA-PTC is to provide high-quality education to students through developing the fundamental skills and knowledge to make informed decisions as
individuals and members of society. We encourage critical thinking and life-long learning about the unity, diversity and interrelatedness of living things.

The Biology discipline, consistent with the College’s mission and the Division’s objectives, encourages the success of its students in all technical fields and academic disciplines by:

1. Demonstrating critical and independent thinking through biological investigation
2. Demonstrating professionalism in communication and collaboration
3. Analyzing the influence of scientific thought on individuals and society
4. Demonstrating proper use of biological instrumentation and laboratory techniques

Student Learning / Course Outcomes

ACTS (Arkansas Course Transfer System Standard Information)

General Description:
Introductory course in microbiology. Includes microbiological concepts including the study of bacteria, viruses, fungi, and protozoa as they affect the human body. Designed for majors in health professions programs. Lab required.

Expected Student Learning Outcomes:
The student will explain, describe, discuss, recognize, and/or apply knowledge and understanding of the following:

- History of microbiology
- Biological and chemical concepts, including metabolism, as applied to microorganisms
- Basic classification, characteristics and behavior of microorganisms
- Host-microbe interactions that result in infection
- Fundamentals of immunology
- Principles of asepsis, sterilization, and disinfection
- Principles of epidemiology as they apply to the effect of microorganisms on the human population
- General methods for the prevention and control of infectious disease transmission
- Microbial growth
- Microbial genetics

The student will explain, describe, discuss, recognize, and/or apply knowledge and understanding of the following lab activities:

- Use of microscope
- Preparation of stains
- General laboratory techniques, including but not limited to aseptic technique, streak plate, and identification methods

UAPTC Microbiology Course Learning Outcomes
By the end of the course, the students will be able to:

1. Describe the diversity of microorganisms, bacterial cell structure and function, microbial growth and metabolism, and the ways to control their growth by physical and chemical means.

2. Explain the basic genetic systems of bacteria, bacteriophage, and plasmids and the role in biotechnology and medicine.

3. Examine the development of public health and how medical scientific principles are applied for prevention and control of known and new diseases.

4. Demonstrate practical skills in fundamental microbiological techniques.

Chapters that will be covered: chapters 1 to 18 and 20.

Policies

Report a Complaint or Concern

UA-PTC takes very seriously complaints and concerns regarding the institution. Most complaints or concerns of a specific nature should be initiated and resolved at the campus level through normal college processes whenever possible. UA - Pulaski Technical College receives and resolves complaints using a variety of methods. To report a complaint or concern, please follow the link below.

https://www.uaptc.edu/report-a-concern-complaint

UA-PTC Attendance Policy

Education at UA-PTC requires students’ active involvement in the learning process. Thus, students are expected to attend all classes and actively engage in all learning assignments and/or opportunities provided in their classes. Class attendance should be treated as mandatory by all students as attendance will be taken by all instructors during the first two weeks of class. Additionally, a written policy on student attendance that is tied to course objectives and included in a course syllabus will be provided for each course by instructors.

Departmental Attendance Policy

You will be given a failing grade (F) for the course if you miss more than 25% of lab sessions regardless of your grade. You will be given a failing grade (F) for the course if you miss more than 25% of lecture sessions regardless of your grade.
Course Policies

The UA-PTC Catalog rules and regulations will be enforced in this course at all times. Please consult the following website for more information: https://www.uaptc.edu/catalog

Professional behavior is required. Punctual attendance and intelligent participation are expected. Particulars as determined by the instructor are detailed in the paragraph below.

Appropriate behavior is expected for all communications, including any notes, email messages, or telephone conversations. Some guidelines for communication are included in this syllabus to help you.

Respect of the instructor and classmates is expected. Therefore, enter and/or leave the classroom quietly and avoid use of cell phones during class periods. If you must make or take an emergency call, quietly step outside into the hallway without disturbing the class.

I encourage students to make use of the instructor office hours to ask questions unrelated to the lecture or lab topics. Because lecture and lab periods are limited, please be considerate of the instructor and classmates by utilizing the office hours to communicate with the instructor about missed assignments or questions about exam grades. Assignments are posted on Blackboard, along with due dates, and most questions can be answered by first consulting Blackboard.

While this is a “face-to-face” course, Blackboard serves as the supplementary course management system. Regular interaction with Blackboard is expected of all students. This is where you will find the supplemental materials for lectures, such as PowerPoint presentations and helpful web links. Your grades will be recorded on Blackboard, and you will received announcements from the instructor through Blackboard. You should make a habit of checking Blackboard for announcements, especially before the lecture and lab meeting on Mondays. I encourage you to read the announcement each week for important reminders and/or updates. You should be aware of the lab exercise for the week and come to lab prepared.

UA-PTC no longer issues a WX grade, which is where a student was dropped for administrative reasons. It is the student’s responsibility to initiate and complete proper paperwork for any withdrawals.

For your safety and the safety of other students, laboratory safety rules and regulations must be followed at all times – including wearing proper attire, proper disposal of laboratory waste, and avoiding food/drink in the lab. Students are required to read and sign the Student Safety Contract included with your lab manual. This must be submitted to the instructor before the 2nd week of the course.

Electronic Device Policy

It is my goal to provide an interactive and engaging learning environment for 21st Century students and to promote UA-PTC’s Institutional Learning Outcomes (ILOs) of information and technology literacy. With the exception of the materials provided in the required lab manual, your course materials will be accessed online through UA-PTC’s Blackboard Learning
Management System. While this is a face-to-face course, and attendance is required for both lecture and lab periods, Blackboard will be used by the instructor during the lecture to access the lecture materials. *This helps to ensure that all students have access to these materials, and helps keep me accountable for providing these materials to you on a timely basis.*

Students may use electronic devices in the classroom for enhanced and/or interactive learning only, adhering to the following guidelines:

- Electronic devices may be used for taking notes, following visual presentations, or completing classroom assignments.
- Pictures of drawings or notices written on the marker board may be taken by students. Please inform the instructor before the board is erased (at the end of class).
- During lab period, electronic devices may also be used to photograph the progress or results of experiments. Devices must be put away when not in use during the lab.
- Out of consideration for your classmates and the instructor, any other videos or recordings inside the classroom should not be made by students without expressed permission.
- Ear buds, head phones, or any other private listening aids may not be worn by students during the class period unless it is an accommodation approved by Disability Services.
- Devices must be kept on silent mode at all times.
- The use of cell phones for texting or social media during the class or lab period is strictly prohibited.
- If the instructor notices texting or social media activity by a student during the session, the student may be counted absent and/or asked to leave the session. Repeat offenses will revoke the student's electronic device privileges during subsequent sessions.
- In the event that a student must place or receive a phone call, the student should inform the instructor at the beginning of the class or lab period, take an aisle seat, and avoid disturbing the class when stepping into the hallway to place or receive the call.
- All electronic devices must be turned off during in-class exams. Laptops and tablets must be closed or covered. Cell phones may be left on the table if turned upside down and turned off.
- These policies are not intended to circumvent UA-PTC’s Student Code of Conduct which may be accessed in the most current version of the UA-PTC Academic Catalog. [https://www.uaptc.edu/catalog](https://www.uaptc.edu/catalog)

**Grading Policy**

Letter grades will be based on the following scale:

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 to 100%</td>
<td>A</td>
</tr>
<tr>
<td>80 to 89%</td>
<td>B</td>
</tr>
<tr>
<td>70 to 79%</td>
<td>C</td>
</tr>
<tr>
<td>60 to 69%</td>
<td>D</td>
</tr>
</tbody>
</table>
Points Distribution:

<table>
<thead>
<tr>
<th>Tested/Graded Activities*</th>
<th>#</th>
<th>Pts</th>
<th>Extended</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Exams</td>
<td>5</td>
<td>100</td>
<td>500</td>
<td>50</td>
</tr>
<tr>
<td>1 Lecture Final/Comprehensive</td>
<td>1</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Syllabus quiz</td>
<td>1</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Chapter Quizzes</td>
<td>2</td>
<td>50</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Literacy Report</td>
<td>1</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Lecture Total</td>
<td></td>
<td></td>
<td>810</td>
<td>78</td>
</tr>
<tr>
<td>Microscope quiz</td>
<td>1</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Lab Quizzes</td>
<td>2</td>
<td>10</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Lab Assignments</td>
<td>2</td>
<td>50</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Microscope Skills Assessment (midterm)</td>
<td>1</td>
<td>50</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Lab Report/Lab Final</td>
<td>1</td>
<td>50</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Lab Total</td>
<td></td>
<td></td>
<td>230</td>
<td>24</td>
</tr>
<tr>
<td>Course Total</td>
<td></td>
<td></td>
<td>1040</td>
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</tbody>
</table>

* Instructors have one week to provide feedback and post grades for all assignments unless otherwise noted by a departmental policy that has been approved by the Dean of the School. Per Dean approval, instructors of the Physical and Natural Sciences department will have two weeks to provide feedback and post grades for research papers and other hand-graded work.

In an online class, eligibility for Financial Aid is based on student participation. Logging into the course does not constitute participation. For purposes of roster certification, students must complete a gradable attendance artifact.

You will be given a failing grade (F) for the course if you miss more than 25% of lab sessions regardless of your grade. You will be given a failing grade (F) for the course if you miss more than 25% of lecture sessions regardless of your grade.

Students are expected to submit work that reflects their individual effort. Cheating or plagiarism on exams, assignments or reports will result in a zero for the assignment and a written warning from the instructor to the student with a copy of the report to the Academic Dean. A repeat (second offense) of this violation will result in escalation of a report to the Dean of Students, resulting in an “F” for the course and possible disciplinary action.

Academic Integrity

It is expected that all students who attend UA-PTC conduct themselves in a manner appropriate for the college experience. Academic integrity is a vital component of collegiate behavior. The UA-PTC catalog states, “The gaining of knowledge and the practice of honesty go hand-in-hand.”
The catalog also states, “The responsibility and authority of initiating discipline arising from violations of the rules against dishonesty during the process of the course are vested in the instructor of that course.”

The complete Academic Integrity Policy is in the UA-PTC code of conduct. [https://www.uaptc.edu/catalog](https://www.uaptc.edu/catalog)

**Accommodation Policy**

Services for Students with Disabilities: UA-PTC is committed to fulfilling all federal requirements as stated in the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and the American with Disabilities Amendments Act (ADAAA) of 2008. Accommodations are available to students who have documented disabilities. Students who request accommodations must register with the Disability Services Office (Main Campus: 501-812-2738 or South Campus: 501-812-2862) and must provide current and relevant documentation.

Students requesting accommodations should inform the instructor at the beginning of the course or as soon as accommodations are approved. It is the student’s responsibility to provide their Accommodation Letter to the instructor. Accommodations are not retroactive and will only be provided once your instructor receives the Accommodation Letter.

**Student Code of Conduct**

All students are expected to abide by the UA-PTC Student Code of Conduct. For the full Student Code of Conduct, access the most current version of the UA-PTC Academic Catalog. [https://www.uaptc.edu/catalog](https://www.uaptc.edu/catalog)

**Sexual Misconduct**

No person at UA-PTC will, on the basis of gender, be excluded from participation in, be denied benefits of, or be subjected to sex discrimination, sexual harassment or sexual misconduct under any education program or activity. All college administrative policies and procedures regarding sex discrimination, sexual harassment, and sexual misconduct are in compliance with Title IX. Students who feel they are victims of sexual misconduct should contact the UA-PTC Title IX Deputy Coordinator for Students:

Michelle Anderson, Director of Student Life and Leadership
Campus Center Building Room 216
501-812-2756
manderson@uaptc.edu

**Course Evaluations**

Students may be asked to evaluate their instructor and course near the end of the semester. These student evaluations are very important to the improvement in the quality of instruction and course materials. All results are anonymous and shared with the faculty only after the semester is over and grades have been posted.
Information Literacy

UA-PTC is committed to the Information Literacy Competency Standards for Higher Education as established by the Association of College and Research Libraries and endorsed by the National Forum on Information Literacy. Therefore, all courses will incorporate an information literacy component so that, by graduation, all students will be able to recognize the need for information, then locate, evaluate, synthesize, and communicate information in an ethical manner. Information literacy encompasses critical thinking, research, media, technology, health, business, and visual literacy skills to produce lifelong learners who can make informed decisions in the workplace and in their personal lives.

Tentative Course Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Chapters Covered</th>
<th>Labs</th>
<th>Assessments (Graded)</th>
<th>Learning Activities (8 hrs/wk)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (1/9)</td>
<td>W: Course Introduction</td>
<td></td>
<td></td>
<td>Lect: Read syllabus, review Chapter 1</td>
</tr>
<tr>
<td>2 (1/14, 1/16)</td>
<td>Reminder: Course Agreement form Chapter 1 Microbial World Chapter 2 Chemical Principles</td>
<td>Reminder: Course Agreement form Chapter 1 Microbial World Chapter 2 Chemical Principles</td>
<td>M: Safety Rules &amp; Contract, Transport &amp; Collection: Isolation from Fomites</td>
<td>Lect: complete Ch 1 review, start Chapter 2 review</td>
</tr>
<tr>
<td>3 (1/23)</td>
<td>Chapter 2 (cont’d) (Chapter 3 Microscopy covered in lab)</td>
<td>MONDAY: NO LECTURE OR LAB</td>
<td>W: Syllabus quiz</td>
<td>Lect: Review Chapter 2, complete syllabus quiz, sign course agreement form due, Lab: Read microscope lab, virtual microscope practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>W: Gram Stain, Inoculate broth culture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week</td>
<td>Chapters Covered</td>
<td>Labs</td>
<td>Assessments (Graded)</td>
<td>Learning Activities (8 hrs/wk)</td>
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<tr>
<td>5 (2/4, 2/6)</td>
<td>Chapter 5 Microbial Metabolism  &lt;br&gt; <strong>W: EXAM I</strong>  &lt;br&gt; <em>(Chapter 6 Microbial growth covered in lab)</em></td>
<td>M: Selective and Differential Media  &lt;br&gt; (EMB, Mannitol Salt, Citrate)  &lt;br&gt; W: Observe plates  &lt;br&gt; 1st Citrate tube observation  &lt;br&gt; Isolate Hand Germs</td>
<td><strong>W: Exam I Ch 1-2, 4)</strong>  &lt;br&gt; <strong>Lect: read Ch 5, study for Exam I</strong>  &lt;br&gt; <strong>Lab: Read differential media labs, catalase test</strong></td>
<td></td>
</tr>
<tr>
<td>6 (2/11, 2/13)</td>
<td>Chapter 7 Control of Growth</td>
<td>M: Hand Hygiene Plates  &lt;br&gt; W: Observe plates  &lt;br&gt; 2nd Citrate tube observation</td>
<td><strong>W: Lab Quiz 2 selective and differential media</strong>  &lt;br&gt; <strong>Lect: Read Ch 7</strong>  &lt;br&gt; <strong>Lab: Review assigned assays</strong></td>
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<tr>
<td>7 (2/18, 2/20)</td>
<td>Chapter 8 Microbial Genetics  &lt;br&gt; <em>(Chapters 9-12 covered in lab)</em></td>
<td>Review of Microscopy &amp; Gram Stain techniques  &lt;br&gt; Lab: Scientific Literacy</td>
<td><strong>M: Quiz (Ch 6)</strong>  &lt;br&gt; <strong>Lect: Review Chapter 8, study for Exam II</strong>  &lt;br&gt; <strong>Lab: Review assigned assays study for Lab Quiz 2</strong></td>
<td></td>
</tr>
<tr>
<td>8 (2/25, 2/27)</td>
<td>Chapter 8 (cont’d)  &lt;br&gt; <strong>W: EXAM II</strong></td>
<td>Ch 9 Biotechnology Topics  &lt;br&gt; Virtual Lab 1: Bacterial Molecular ID Lab (HHMI Virtual Lab)</td>
<td><strong>W: Exam II Ch 5, 7</strong>  &lt;br&gt; <strong>Lect: read Ch 8 (cont’d)</strong>  &lt;br&gt; <strong>Lab: Virtual Lab 1 assignment, Review for lab midterm assessment</strong></td>
<td></td>
</tr>
<tr>
<td>9 (3/4, 3/6)</td>
<td>Chapter 13 Viruses, Viroids, Prions  &lt;br&gt; Chapter 20 Antimicrobial Drugs</td>
<td><strong>Midterm Assessment</strong>  &lt;br&gt; M: Lab Quiz 3 Microscope (Ch 3 &amp; Lab 1)  &lt;br&gt; M, W Skills Assessment (counts as lab midterm)</td>
<td><strong>Lect: Read Ch 13, Ch 20</strong>  &lt;br&gt; <strong>Lab: complete Virtual Lab 1</strong></td>
<td></td>
</tr>
<tr>
<td>Week</td>
<td>Chapters Covered</td>
<td>Labs</td>
<td>Assessments (Graded)</td>
<td>Learning Activities (8 hrs/wk)</td>
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</tbody>
</table>
| 10 (3/11, 3/13) Midterm | Midterm grades  
Chapter 20 (cont’d) Review | M: Modified Kirby-Bauer Assay (mixed hand culture)  
W: Observe plates, select colony for isolation (broth) | W: Molecular ID Virtual Lab assignment due (Ch 9)  
W: Literacy Topic Selection Due (paper due 4/17) | Lect: Read Ch 20, Review & study for Exam III, Lab: read assay & select colony |
| (3/18, 3/20) SPRING BREAK | | | | SPRING BREAK |
| 11 (3/25, 3/27) | Chapter 14 Epidemiology  
W: EXAM III | M: Gram Stain of “pure culture”, Kirby Bauer assay (pure culture), selective differential growth  
W: Observe results, Catalase assay | W: Exam III (Ch 8, 13, 20) | Lect: Study for Exam III, read Ch 14 Lab: Review Antibiotic Assay & assigned assays |
| 12 (4/1, 4/3) | Chapter 14 (cont’d)  
Chapter 15 Mechanisms of Pathogenicity Review | M: Chapters 10-12 Dichotomy & Diversity  
W: Chapters 10-12 Dichotomy & Diversity | | Lect: Read Ch 15 Lab: Read Ch 10-12 selected topics, work on lab report |
| 13 (4/8, 4/10) | Chapter 16-17 Innate & Specific Immunity  
W: EXAM IV | M: Lab: Scientific Literacy  
W: Lab: Scientific Literacy (cont’d) | M: Quiz (Ch 10-12)  
W: Exam IV (14, 15) | Lect: Read Ch 16-17, Study for Exam IV Lab: work on Exam IV report, scientific literacy |
| 14 (4/15, 4/17) | Ch 16-17 (Cont’d)  
Ch 18 Vaccines (Immunological Assays covered in lab) | M: Virtual Lab 2: Immunological Assay (ELISA HHMI virtual lab)  
W: Scientific Method, Literacy & Lab Reports | W: Literacy paper due | Lect: Read Ch 18 Lab: Complete virtual lab 2, work on lab report |
| 15 (4/22, 4/24) | Ch 18 (cont’d)  
Paradigms of Infectious Disease Review | M,W: Lab Report work periods (Instructor available for assistance) | M: Lab Assignment 2 – ELISA | Lect: Read Ch 18 (cont’d) selected disease topics Lab: |
Final Exam Schedule: The final schedule is posted on the UA-PTC Website. [https://www.uaptc.edu/academic-calendar](https://www.uaptc.edu/academic-calendar)

Disclaimer: This schedule is a guide for the semester. The instructor reserves the right to amend the schedule as necessary.

<table>
<thead>
<tr>
<th>Week</th>
<th>Chapters Covered</th>
<th>Labs</th>
<th>Assessments (Graded)</th>
<th>Learning Activities (8 hrs/wk)</th>
</tr>
</thead>
</table>
| 16 (4/29, 5/1) | Paradigms of Infectious Disease  
W: EXAM V | M: Lab Report Due | M: Lab Report due (counts as lab final)  
W: Exam V (Ch 16-18) | Submit final lab report, review & study for comprehensive final |
| 17 (5/6, 5/8) Finals | M: May 6th 8-10a FINAL EXAM | | M: Final Exam |
Course Agreement Form

Read, complete, and return to instructor:

I have read the course syllabus for Dr. Wade’s BIOL 2401 Microbiology class at Pulaski Technical College, and I understand its content. I also understand the rules for the class, and I will follow and abide by these rules, including those relating to attendance, assignments, grading criteria, plagiarism, and behavior.

I understand that I will be given a failing grade (F) for the course if I miss more than 25% of lab sessions regardless of my grade. I will be given a failing grade (F) for the course if I miss more than 25% of lecture sessions regardless of my grade.

__________________________________________
Semester

__________________________________________
Date

__________________________________________
Print name

__________________________________________
Signature

__________________________________________
UA-PTC Email address

__________________________________________
Telephone