Instructor Information

Instructor: Dr. Aiwei Borengasser
Office: Main Campus, B building, Room 105
Mailbox: Main Campus, B building, Room 105
Hours: Tuesday and Thursday: 1 PM to 3:15 PM
       Friday: 10:30 AM to 11:00 AM
Phone: (501)812-2267 (Office); (501)812-2269 (Math & Science Department)
Email: aborengasser@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

This course meets for a live lab every Tuesday and Thursday from 11:30 AM to 1:00 PM in A building, room 128A. The lecture portion is done online through electronic assignments.

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

   It includes the textbook (Tortora Gerard, J., Berdell R. Funke and Christine L. Case; Microbiology: An Introduction. 13th Edition. Pearson), MasteringMicrobiology access code, and lab manual. Please see Appendix I for more information.

Optional: Handout materials may be provided by the instructor as needed.
2. PearsonMyLabandMastering:
   - You are required to register with PearsonMyLabandMastering within the first week of the semester.
   - See instructions on how to register with PearsonMyLabandMastering below. Also, please see the detailed instructions in the PowerPoint presentation, a separate file from the syllabus.

   **How to register with PearsonMyLabandMastering**

1. Access internet using Google Chrome or Firefox. DO NOT use Explorer.
2. Access and log into Blackboard (Bb) for this course
3. Click on the Pearson Assignment Link icon on the left panel
4. Click on the MylabandMastering home page
5. Click do not show this message again on this computer and click Launch
6. Click I Accept
7. Create a Pearson Username & Password
8. Enter registration access code then [Submit].
   a. You will find a registration code card included with the required resource material packet you purchased.
   b. Don’t have a code: If you do not have a registration code you will need to:
      i. Buy an access online or
      ii. Begin the limited time Courtesy Access

**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.

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

Biology Department / Discipline or Program Mission and 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. Demonstrate critical and independent thinking through biological investigation
2. Demonstrate professionalism in communication and collaboration
3. Analyze the influence of scientific thought on individuals and society
4. Demonstrate proper use of biological instrumentation and laboratory techniques

Microbiology Student Learning / Course Outcomes

ACTS 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.

ACTS 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.

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.

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.

Lab Policies:

A. No food, gum, or drinks are allowed in the lab.
B. Students are not to work on any assignments or other material other than the day’s lab topic.
C. There will be no lab make-up as considerable preparation time is required by the instructor and cannot be redone.
D. During each lab period you will be required to make notes of what is covered, record results, describe materials used, and note any conclusions or principles demonstrated.
E. No children of visitors are allowed in the lab at any time for any reason!

Grading Policy

Letter grades will be based on the following scale:

- 90 to 100%  A
- 80 to 89%  B
- 70 to 79%  C
- 60 to 69%  D
- 0 to 59%  F
Points Distribution:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 quizzes (10 each)</td>
<td>190</td>
</tr>
<tr>
<td>4 Exams (100 each)</td>
<td>400</td>
</tr>
<tr>
<td>1 Final (200)</td>
<td>200</td>
</tr>
<tr>
<td>4 Discussions (10 each)</td>
<td>40</td>
</tr>
<tr>
<td>3 lab exams (30 + 30 + 40 each)</td>
<td>100</td>
</tr>
<tr>
<td>1 Gram Staining Checklist</td>
<td>50</td>
</tr>
<tr>
<td>12 labs (20 each)</td>
<td>240</td>
</tr>
<tr>
<td>11 pre-labs (10 each)</td>
<td>110</td>
</tr>
<tr>
<td>19 reading assignment (30 each)</td>
<td>570</td>
</tr>
<tr>
<td>Information Literacy Paper</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2000</strong></td>
</tr>
</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 dropped if you do not register with an access code for Pearson by 11:59 pm on 1/23/2019 and start to do Chapter 1 Reading Assignment.

**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.
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.

http://uaptc.azurewebsites.net/docs/default-source/course-catalog/2017-18-academic-catalog.pdf?sfvrsn=a08a3038_2

Sexual Misconduct

No person at Pulaski Technical College 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 of:</th>
<th>CHAPTERS COVERED</th>
<th>LABS (Graded)</th>
<th>Assessments (Graded)</th>
<th>Learning Activities (8hrs/week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (1/3-1/13)</td>
<td>Chapter 1: The Microbial World and You</td>
<td></td>
<td></td>
<td>Read syllabus</td>
</tr>
<tr>
<td>2. (1/14-1/20)</td>
<td>Chapter 1: The Microbial World and You Chapter 2: Chemical Principles</td>
<td>Lab Exercise Discussion</td>
<td>Chapter 1 quiz and reading Discussion #1</td>
<td>Read, outline, and study Chapters 1 and 2 Read Lab 1</td>
</tr>
<tr>
<td>3. (1/21-1/27)</td>
<td>Chapter 3: Observing Microorganisms Through a Microscope</td>
<td>Lab #1 Transport experiment and Microscope Prelab: Microscope</td>
<td>Chapter 1 quiz and reading Chapter 2 quiz and reading Discussion #1</td>
<td>Read, outline, and study Chapter 3 Read Lab 2 and 3 Prepare for Lab Exam 1</td>
</tr>
<tr>
<td>4. (1/28-2/3)</td>
<td>Chapter 4: Prokaryotic and Eukaryotic Cells</td>
<td>Lab #2 Wet and Simple Stain Lab #3 Gram Stain, Endospore stain, and Special stain Prelab: Wet and simple stain Prelab: Gram stain</td>
<td>Quiz 3 (Chapter 3) Chapter 3 Reading</td>
<td>Read, outline, and study Chapter 4</td>
</tr>
<tr>
<td>5. (2/4-2/10)</td>
<td>Chapter 5: Metabolism</td>
<td>Lab #4 Selective and Differential Media Prelab: Special media for isolating bacteria</td>
<td>Chapter 5 quiz and reading Exam #1 (Chapters 1-5)</td>
<td>Read, outline, and study Chapter 5 Read Lab 4 Prepare for Exam 1</td>
</tr>
<tr>
<td>6. (2/11-2/17)</td>
<td>Chapter 6: Microbial Growth</td>
<td>Lab #5 Carbohydrate Metabolism Prelab: Carbohydrate Metabolism</td>
<td>Chapter 6 quiz and reading</td>
<td>Read, outline, and study Chapter 6 Read Lab 5</td>
</tr>
<tr>
<td>7. (2/18-2/24)</td>
<td>Chapter 7: The control of Microbial Growth</td>
<td>Lab #6 Fermentation Prelab: Fermentation</td>
<td>Chapter 7 quiz and reading</td>
<td>Read, outline, and study Chapter 7 Read Lab 6</td>
</tr>
<tr>
<td>8. (2/25-3/3)</td>
<td>Chapter 8: Microbial Genetics Chapter 9: Biotechnology and DNA Technology</td>
<td>Lab #7 Protein Metabolism Pre-lab: Protein Metabolism</td>
<td>Chapter 8 quiz and reading Chapter 9 quiz and reading Discussion #2</td>
<td>Read, outline, and study Chapters 8 and 9 Read Lab 7</td>
</tr>
<tr>
<td>9. (3/4-3/10)</td>
<td>Chapter 10: Classification of Microorganisms</td>
<td>Lab #8 Respiration Pre-lab: Respiration</td>
<td>Chapter 10 quiz and reading Exam #2 (Chapters 6-10)</td>
<td>Read, outline, and study Chapter 10 Read Lab 8 Prepare for Exam 2</td>
</tr>
<tr>
<td>10. (3/11-3/17)</td>
<td>Chapter 11: The Prokaryotes</td>
<td>Lab #9 Multi-test medium and Motility</td>
<td>Chapter 11 quiz and reading</td>
<td>Read, outline, and study Chapter 11 Prepare for Gram assessment</td>
</tr>
<tr>
<td>11. (3/25-3/31)</td>
<td>Chapter 12: The Eukaryotes Chapter 13: Viruses, Viroids, and Prions</td>
<td>Lab Exam 2</td>
<td>Chapter 12 quiz and reading Chapter 13 quiz and reading Discussion #3</td>
<td>Read, outline, and study Chapters 12 and 13 Prepare for Lab Exam 2</td>
</tr>
<tr>
<td>12. (4/1-4/7)</td>
<td>Chapter 14: Principle of Disease and Epidemiology</td>
<td>Lab #10 Antimicrobial Disk Diffusion Assay and Antibiotic sensitivity (Kirby-Bauer Method) Prelab: Antimicrobial Drugs</td>
<td>Chapter 14 quiz and reading</td>
<td>Read, outline, and study Chapter 14 Read Lab 9</td>
</tr>
<tr>
<td>14. (4/15-4/21)</td>
<td>Chapter 16: Innate Immunity Chapter 17: Adaptive Immunity</td>
<td>Lab #12 Immunological Methods Prelab: Immunological Methods Lab Exam 3</td>
<td>Chapter 16 quiz and reading Chapter 17 quiz and reading</td>
<td>Read, outline, and study Chapters 16 and 17 Read Lab 11</td>
</tr>
<tr>
<td>15. (4/22-4/28)</td>
<td>Chapter 18: Practical Applications of Immunology</td>
<td></td>
<td>Chapter 18 quiz and reading Information Literacy Paper</td>
<td>Read, outline, and study Chapters 18 Read Lab 12 Prepare for Lab Exam 3</td>
</tr>
<tr>
<td>16. (4/29-5/5)</td>
<td>Chapter 20: Antimicrobial Drugs</td>
<td></td>
<td>Chapter 20 quiz and reading Discussion #4 Exam #4 (Chapters 16-20)</td>
<td>Read, outline, and study Chapter 20 Review for Exam 4 ad the Final</td>
</tr>
<tr>
<td>17. (5/4-5/7)</td>
<td>Cumulative Final!</td>
<td>Cumulative Final!</td>
<td>Cumulative Final!</td>
<td></td>
</tr>
</tbody>
</table>

**Final Exam Schedule: May 4-7**

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

Read, complete, and return to instructor:

I have read the course syllabus for Dr. Aiwei Borengasser’s 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.

_______________________________
Semester

_______________________________
Date

_______________________________
Print name

_______________________________
Signature

_______________________________
UA-UA-PTC Email address

_______________________________
Telephone
Appendices

BIOL 2401 Microbiology

Textbook/Mastering Access:

1. Students returning from the fall of 2017 or spring 2018 semester need to re-enroll into their new mastering course through blackboard (no cost).
2. New students/transfer students have the option to purchase the textbook package from the bookstores:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UA - Pulaski College</td>
<td>BIOL 2401</td>
<td>Microbiology Pkg for UA - PTC</td>
<td>9781323338278</td>
</tr>
<tr>
<td>UA - Pulaski College</td>
<td>BIOL 2401</td>
<td>Microbiology LAB ONLY</td>
<td>9781323338261</td>
</tr>
</tbody>
</table>

- The Cost of the full package from the bookstore is: $295.
- The cost for just the lab manual at the bookstore is: $108.25.*** If you choose the instant access online at $95.95, and then purchase your lab manual, your cost would be $204.20.
- If you choose to purchase your lecture book through mastering, you will need to purchase the full e-text package.
- Please choose the 14 day grace period if you are unsure if you want to purchase the book package or access code online. Once you purchase the access code online, it is difficult to reverse this method. For the lab, you will need the physical copy.

Pearson Contacts:
If you have any problems or technical questions, you can email me at melissa.bland@pearson.com. Please give them as much information as possible so that they can assist you quicker.
Course Work:

**Read Chapter & View PowerPoint:**
It is highly recommended that you read the chapter prior to beginning the assignments and labs. *Preparing for an assignment and/or lab will usually result in less time needed to complete the assignments. It is like the difference between reading the chapter first then answering the questions at the end OR trying to answer the end of the chapter questions without first reading the chapter. Which one takes longer to complete?*
- Read current chapter for the week
- **PowerPoint with Lecture:** Follow along with the PowerPoint as you read the chapter or view the PowerPoint as a preview and/or review of the chapter.

**Assignments:**

- **Chapter Reading Assignments:**
  There will be one reading assessment for each chapter. Each assignment is usually set around 30 questions with an average completion time of 40 minute. Please make sure your computer can play videos and animations.

- **Discussions:**
  There will be 4 discussions in the Blackboard. A discussion that is posted after the deadline will not be graded.

**Exams & Quizzes:**

- **Exams** are all online and will usually be multiple choice questions.
  - See Course Schedule for dates. You only can take the exam once.
  - Make-up exams will not be given.

- **Quizzes** will also be given online. They will all be multiple choice questions, and you can take them 6 times for each question in order to make a 100%.

**Pre-labs:** All labs are given online. You are required to take each pre-lab online before coming to each corresponding lab.