

# SCIN202

**STUDENT WARNING:** This course syllabus is from a previous semester archive and serves only as a preparatory reference. Please use this syllabus as a reference only until the professor opens the classroom and you have access to the updated course syllabus. Please do NOT purchase any books or start any work based on this syllabus; this syllabus may NOT be the one that your individual instructor uses for a course that has not yet started. If you need to verify course textbooks, please refer to the online course description through your student portal. This syllabus is proprietary material of APUS.

---

## Course Summary

### Description

**Course Description:** Introduction to Microbiology includes the study of the history of microbiology, as well as the fundamentals of microbe staining, culture, and growth. We will also focus on sterilization, disinfection and antimicrobial therapies that help to keep microbes in check. Finally, we will focus on microbial infections of the skin, eyes, and wounds as well as the urogenital, respiratory, oral gastrointestinal and nervous systems. (Prerequisite: BIOL133 or SCIN130)

#### Course Scope:

The course is eight weeks long and is appropriate for all levels of undergraduate work. Microbiology is an excellent complement to General Education degrees related to Environmental Studies, any program concerned with the natural environment, or any future goals that include careers in the health sciences. Assignments and exams will consist of a variety of question formats to include, but not limited to, multiple choice, true/false, short answer and essays. No prior knowledge of microbiology is necessary, although an understanding or interest in environmental science, ecology, biology, cell biology, genetics and/or chemistry may enhance the classroom experience.

---

### Objectives

The successful student will fulfill the following learning objectives:

**CO-1** Summarize the scope and history of Microbiology

**CO-2** Compare and contrast the characteristics of prokaryotes and eukaryotes, to include cellular activities, structure and function, growth and division and metabolism

**CO-3** Describe the inheritance of genetic information, gene action, gene regulation and mutations in microbes

**CO-4** Evaluate the interactions and impact of microorganisms and humans

**CO-5** Summarize the different host defense mechanisms and their relation to microbial disease processes

**CO-6** Explain the principles, properties and applications of antimicrobial agents

**CO-7** Compare the interactions and impact of microorganisms in the environment

**CO-8** Describe the science of microbial taxonomy and microbial evolutionary relationships

---

## Outline

### **Week 1: Introduction to the History of Microbiology, Visualizing and Staining Microbes**

---

Learning Objectives

CO-1, CO-2

Readings

Chapter 1: Scope and History of Microbiology

Chapter 3: Microscopy and Staining

Assignments

Forum 1

Assignment 1

Week 1 Quiz

### **Week 2: Prokaryotic and Eukaryotic Cells , Microbial Genetics, Gene Transfer and Genetic Engineering**

---

Learning Objectives

CO-2, CO-3, CO-4

Readings

Chapter 4: Characteristics of Prokaryotic and Eukaryotic Cells

Supplemental Reading

Chapter 7: Microbial Genetics

Supplemental Reading

Chapter 8: Gene Transfer and Genetic Engineering

Assignments

Forum 2

Assignment 2

Week 2 Quiz

### **Week 3: Taxonomy, Evolution and Diversity of Microbes, Viruses, Eukaryotic Organisms and Parasites**

---

Learning Objectives

CO-2, CO-4, CO-8

## Readings

Supplemental Reading Assignment:  
Chapter 9: Classification of Microbes

Chapter 10: Viruses

Supplemental Reading Assignment:  
Chapter 11: Eukaryotic Organisms and Parasites

## Assignments

Forum 3

Assignment 3

Week 3 Quiz

## **Week 4: Antimicrobial Therapy, Host Microbe Relationships and Disease Processes, Epidemiology and Nosocomial Infections**

---

### Learning Objectives

CO-4, CO-6

### Readings

Chapter 13: Antimicrobial Therapy

Chapter 14: Host-Microbe Relationships and Disease Processes

Supplemental Reading Assignment:  
Chapter 15: Epidemiology and Nosocomial Infections

### Assignments

Forum 4

Assignment 4

Week 4 Quiz

## **Week 5: Innate Host Defenses, Microbial Infections of the Skin, Eyes, Wounds and Bites, Urogenital and Sexually Transmitted Diseases**

---

### Learning Objectives

CO-4, CO-5

### Readings

Supplemental Reading Assignment:  
Chapter 17: Innate Host Defenses

Chapter 19: Diseases of the Skin, Eyes, Wounds and Bites

Chapter 20: Urogenital and STDs

### Assignments

Forum 5

Assignment 5

Week 5 Quiz

**Week 6: Diseases of the Respiratory System, Oral and Gastrointestinal Diseases, Cardiovascular, Lymphatic and Systemic Diseases, Diseases of the Nervous System**

---

Learning Objectives

CO-4

Readings

Chapter 21: Diseases of the Respiratory System

Chapter 22: Oral and Gastrointestinal Diseases

Supplemental Reading Assignment:

Chapter 23: Cardiovascular, Lymphatic and Systemic Diseases

Chapter 24: Diseases of the Nervous System

Assignments

Forum 6

Assignment 6

Week 6 Quiz

**Week 7: Environmental Microbiology**

---

Learning Objectives

CO-4, CO-7

Readings

Supplemental Reading Assignment:

Chapter 25: Environmental Microbiology

Supplemental Reading Assignment:

Chapter 26: Applied Microbiology

Assignments

Forum 7

Project Proposal Part 1

Week 7 Quiz

**Week 8: Applied Microbiology**

---

Learning Objectives

CO-4, CO-7, CO-8

Readings

Supplemental Reading Assignment:  
Chapter 26: Applied Microbiology

Assignments

Forum 8

Assignment 8

## Project Proposal Part 2

---

## Evaluation

### Assignments:

During each weekly class session, you will be required to complete assignments – these vary in nature each week, though each assignment is designed so that you have an opportunity to apply principles learned during that week. In general, you will need your textbook and internet access to perform these exercises.

### Forums:

Forum (formerly Discussion Board) Assignments will consist of internet activities, topical questions and/or ethics based questions. You are expected to provide a thoughtful answer or comment of at least 200 words for each assignment and a similar comment or reflection in reply to at least two other student posts. Statements such as “I agree” or “good post” will not count as a reply. Participation in the Forums is mandatory and will count towards your course grade.

### Quizzes

During Weeks 1-7, you will be required to complete a short quiz that covers the reading assignments for that week. Quizzes DO NOT require a proctor. Quizzes are open book/open note in format and consist of approximately 10 multiple choice, T/F, fill in the blank and/or short answer questions. The quizzes are timed.

### Project

This course includes a project that will require research in weeks’ seven and eight. It is expected you will prepare a written project based on the application of learned concepts that cover the scope of course concepts and is due during the last two weeks of class. Details on the project will become available at the beginning of week seven.

Please see the [Student Handbook](#) to reference the University’s [grading scale](#).

### Grading:

Name	Grade %
Assignments	30.00 %
Assignment 1	5.00 %
Assignment 2	5.00 %
Assignment 3	5.00 %
Assignment 4	5.00 %
Assignment 5	5.00 %
Assignment 6	5.00 %
Forums	20.00 %

Forum 1	2.50 %
Forum 2	2.50 %
Forum 3	2.50 %
Forum 4	2.50 %
Forum 5	2.50 %
Forum 6	2.50 %
Forum 7	2.50 %
Forum 8	2.50 %
<b>Quizzes</b>	<b>20.00 %</b>
Week 7 Quiz	2.86 %
Week 6 Quiz	2.86 %
Week 5 Quiz	2.86 %
Week 4 Quiz	2.86 %
Week 3 Quiz	2.86 %
Week 2 Quiz	2.86 %
Week 1 Quiz	2.86 %
<b>Project</b>	<b>30.00 %</b>
Project- Part 1	15.00 %
Project- Part 2	15.00 %

---

## Materials

**Book Title:** Microbiology: Principles and Explorations, 9th Ed - The VitalSource e-book is provided via the APUS Bookstore

**Author:** Black, Jacquelyn G. / Black, Laura J.

**Publication Info:** Wiley

**ISBN:** 9781118743164

---

**Book Title:** You must validate your cart to get access to your VitalSource e-book(s). If needed, instructions are available here - <http://apus.libguides.com/bookstore/undergraduate>

**Author:** N/A

**Publication Info:** N/A

**ISBN:** N/A

### Required Technology

- See the Technology Requirements section of the undergraduate catalog for the minimum hardware and software requirements.
- Microsoft Office 365 is available to APUS students for free. To sign up, visit <http://products.office.com/en-us/student>. If you have questions about accessing the software, please contact Classroom support at [classroomsupport@apus.edu](mailto:classroomsupport@apus.edu).

### Additional (Optional) Resources

Juneja, V., & Sofos, J. (2009). *Pathogens and Toxins in Foods: Challenges and Interventions*. NY:ASM Press. *Pathogens and Toxins in Foods: Challenges and Interventions* offers a farm-to-table approach to food safety that enables readers to control microbial pathogens and toxic agents at all stages of the food

supply chain.

Norkin, L. (2009). *Virology: Molecular Biology and Pathogenesis*. NY: ASM Press. *Virology: Molecular Biology and Pathogenesis* enables readers to develop a deep understanding of fundamental virology by emphasizing principles and discussing viruses in the context of virus families.

Krasner, R.(2009). *Microbial Challenge: Science, Disease and Public Health*. NY: ASM Press. *The Microbial Challenge: Science, Disease, and Public Health*, 2nd Edition, presents a fascinating look at human-microbe interactions and examines the disease producers while discussing how, with knowledge-based preparation, we can live in harmony with microbes. It also discusses the ways in which beneficial microbes are involved in the cycles of nature and in the food industry, and how they are used as research tools.

Walsh, C. (2003). *Antibiotics: Actions, Origins, Resistance*. NY: ASM Press. *Antibiotics: Actions, Origins, Resistance* offers a comprehensive, up to date account of those structural classes of antibiotics that have had an impact in human infectious disease.

Miller, M. (1998). *A Guide to Specimen Management in Clinical Microbiology*. NY: ASM Press.

Simmons, E. (2007). *Alternaria: An Identification Manual*. NY: ASM Press.

Beck, R (2000).. *A Chronology of Microbiology in Historical Context*. NY: ASM Press.

Sherman, I. (2009). *The Elusive Malaria Vaccine: Miracle of Mirage?* NY: ASM Press.

## Websites

In addition to the required course text the following public domain Websites are useful. Please abide by the university's academic honesty policy when using Internet sources as well. Note that Web site addresses are subject to change.

[Microbes.info](#) A comprehensive website that lists links over various areas in Microbiology, as well as current events.

[Centers For Disease Control and Prevention](#) The CDC is a comprehensive web resource that offers articles and data on disease, epidemiology, statistics, and much more.

---

## Course Guidelines

### Citation and Reference Style

- Attention Please: Students will follow the APA Format as the sole citation and reference style used in written work submitted as part of coursework to the University. Assignments completed in a narrative essay or composition format must follow the citation style cited in the APA Format.

### Tutoring

- [Tutor.com](#) offers online homework help and learning resources by connecting students to certified tutors for one-on-one help. AMU and APU students are eligible for 10 free hours\* of tutoring provided by APUS. Tutors are available 24/7 unless otherwise noted. Tutor.com also has a SkillCenter Resource Library offering educational resources, worksheets, videos, websites and career help. Accessing these resources does not count against tutoring hours and is also available 24/7. Please visit the APUS Library and search for 'Tutor' to create an account.

### Late Assignments

- Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. The due date for each assignment is listed under each Assignment.

- Generally speaking, late work may result in a deduction up to 15% of the grade for each day late, not to exceed 5 days.
- As a working adult I know your time is limited and often out of your control. Faculty may be more flexible if they know ahead of time of any potential late assignments.

## Turn It In

- Faculty may require assignments be submitted to Turnitin.com. Turnitin.com will analyze a paper and report instances of potential plagiarism for the student to edit before submitting it for a grade. In some cases professors may require students to use Turnitin.com. This is automatically processed through the Assignments area of the course.

## Academic Dishonesty

- Academic Dishonesty incorporates more than plagiarism, which is using the work of others without citation. Academic dishonesty includes any use of content purchased or retrieved from web services such as CourseHero.com. Additionally, allowing your work to be placed on such web services is academic dishonesty, as it is enabling the dishonesty of others. The copy and pasting of content from any web page, without citation as a direct quote, is academic dishonesty. When in doubt, do not copy/paste, and always cite.

## Submission Guidelines

- Some assignments may have very specific requirements for formatting (such as font, margins, etc) and submission file type (such as .docx, .pdf, etc) See the assignment instructions for details. In general, standard file types such as those associated with Microsoft Office are preferred, unless otherwise specified.

## Disclaimer Statement

- Course content may vary from the outline to meet the needs of this particular group.

## Communicating on the Forum

- Forums are the heart of the interaction in this course. The more engaged and lively the exchanges, the more interesting and fun the course will be. Only substantive comments will receive credit. Although there is a final posting time after which the instructor will grade comments, it is not sufficient to wait until the last day to contribute your comments/questions on the forum. The purpose of the forums is to actively participate in an on-going discussion about the assigned content.
- “Substantive” means comments that contribute something new and hopefully important to the discussion. Thus a message that simply says “I agree” is not substantive. A substantive comment contributes a new idea or perspective, a good follow-up question to a point made, offers a response to a question, provides an example or illustration of a key point, points out an inconsistency in an argument, etc.
- As a class, if we run into conflicting view points, we must respect each individual's own opinion. Hateful and hurtful comments towards other individuals, students, groups, peoples, and/or societies will not be tolerated.

---

## University Policies

### [Student Handbook](#)

- [Drop/Withdrawal policy](#)
- [Extension Requests](#)
- [Academic Probation](#)



- [Appeals](#)
- [Disability Accommodations](#)

The mission of American Public University System is to provide high quality higher education with emphasis on educating the nation's military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society.

**STUDENT WARNING:** This course syllabus is from a previous semester archive and serves only as a preparatory reference. Please use this syllabus as a reference only until the professor opens the classroom and you have access to the updated course syllabus. Please do NOT purchase any books or start any work based on this syllabus; this syllabus may NOT be the one that your individual instructor uses for a course that has not yet started. If you need to verify course textbooks, please refer to the online course description through your student portal. This syllabus is proprietary material of APUS.