



MCB5205: Bacterial Pathogens

3 Credit Hours

Fall 2023

Instructor

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Teaching Assistant

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Course Website

<https://elearning.ufl.edu>

Course Description

This course is designed to introduce you to the field of host-microbe relationships in the diseases of humans and animals. The overall goal of this class is to enhance students' learning in the field of microbiology, related to the various pathogenic mechanisms used by bacteria. This class will cover topics such as host-pathogen relationships, pathogenic mechanisms used by bacteria, antibiotic resistance, vaccines, and the function of the

microbiome in disease. Students will participate in discussion boards and case studies to apply their knowledge in real-life scenarios.

Course Objectives

By the end of this course, students will be able to:

- Analyze the intricate interplay between the host immune system and bacterial pathogens to develop a comprehensive understanding of microbial virulence.
- Investigate the strategies and mechanisms employed by bacterial pathogens to induce disease, by studying various examples and case studies.
- Apply analytical skills to critically examine real-world scenarios of infectious diseases, thereby enhancing your ability to navigate the complexities of this field.
- Evaluate the laboratory techniques, diagnostic methodologies, and research strategies used to assess the virulence and disease-causing potential of bacterial pathogens.
- Examine strategies for the prevention and treatment of host infections and associated diseases, with a particular focus on vaccines, antibiotics, and the role of microbiota.
- Critically assess the development and implementation of interventions that effectively combat infections, considering the factors influencing their success and limitations.

Required Textbook

Wilson, et al. *Principles of Bacterial Pathogenesis, A Molecular Approach* (4th Edition), ISBN-10: 1555819400, ISBN-13: 978-1555819408

Additional Suggested Readings and Resources

Assigned peer-reviewed readings are included with assignments. Please see the individual Canvas modules for more details.

Prerequisite Knowledge and Skills

Students should have a good general background in microbiology. Previous coursework at the 3000 or 4000 level is recommended.

Minimum Technology Requirements

The University of Florida expects students entering an online program to acquire computer hardware and software appropriate to their degree program. A student's computer configuration should include webcam, microphone, broadband access, and Microsoft Office Suite.

Individual colleges may have additional requirements or recommendations, which students should review before starting their program.

More [information on technical requirements](#) is available at the UF Online website.

Minimum Technical Skills

To complete your tasks in this course, you will need a basic understanding of operating a computer and using word processing software.

Materials/Supply Fees

A fee is required--please see the schedule of courses for more information.

Point Totals

Assignment	Points
PlayPosit Quizzes (40)	120 points
Discussion Boards (2)	100 points
Case Studies (3)	120 points
Exams (3)	660 points
Pathogen Project	120 points
Total:	1120 points

Grading Policies

Late submissions are accepted, with a penalty of **20%** for each day of lateness. Please remember that Canvas is a computer and is precise, so do not wait until the last minute to start or submit your assignment. 11:59:00 is on time, 11:59:30 is late.

If you have a legitimate excuse as to why your assignment is late or missing, please submit your documentation to the [Dean of Students Office](#).

If you have a grading concern when you receive feedback, you must submit this request within 1 week of receiving your grade on the assignment. Requests after one week will not be accepted.

My goal is to grade all assignments within 1 week of due date, but there may be delays in grading during the semester.

Make up assignments or extended deadlines will be assessed on a case-by-case basis. Reach out to me directly if you require such an accommodation. I do understand that things happen, but it is important to meet deadlines both in college and in the real world.

Grading Scale

A	100.0-94.0%	C	76.0-74.0%
A-	93.0-90.0%	C-	73.0-70.0%
B+	89.0-87.0%	D+	69.0-67.0%
B	86.0-84.0%	D	66.0-64.0%
B-	83.0-80.0%	D-	63.0-61.0%
C+	79.0-77.0%	F	60.0% and below

UF has provided [information on grades and grading policies](#) at the university website.

Attendance Policy

As this is a **fully online, asynchronous course**, you are expected to exhibit a high level of self-discipline. Each module was designed for completion on a week-by-week basis (with a few exceptions of assignments being worked on over multiple modules). During Week 1, I recommend you peruse each module in Canvas to familiarize yourself with deliverables, number of lectures, and readings.

If you have a particular way you like to organize your workload, I encourage you to set up these systems in Week 1 so you can keep track of your work. Each module includes assigned readings, videos, supplemental materials, and assignments. Please complete all modules within their respective weeks and by their listed deadlines. You are expected to complete all assignments by their stated due date. Additionally, I expect you to complete the readings in advance of watching the lectures.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university [attendance policies](#).

Course Assessments

Quizzes

The orientation quiz does not count towards your final average, but it must be completed at a score of 100% before the rest of the course will open. The orientation quiz may be taken multiple times, until the desired score is achieved.

There are also graded PlayPosit quizzes embedded in the module lectures. These quizzes are meant to help you review the course material and practice for the exams. All PlayPosit quizzes may be taken multiple times.

Discussion Boards

These discussions will allow you to engage in online discussions with your peers, sharing insights and perspectives on specific videos. Peer-engagement software called Perusall will be used for this assignment, where you post comments and insights about the videos and reply to your peers' annotations.

Case Studies

There will be several case study analyses that accompany selected peer-reviewed article readings. These case studies will provide you with an opportunity to apply your knowledge and critical thinking skills to real-world scenarios. The assignments will also use Perusall, giving you further opportunities to interact with your peers.

Exams

You will have three graded exams during the semester. Canvas includes three ungraded practice exams to help you prepare for the graded exams. All your graded exams are online in Canvas and proctored by Honorlock. **Note that in-person examinations are not an option for this 100% online course.** It is your responsibility to get familiar with the Honorlock proctoring service. Honorlock instructions and requirements are available in the Orientation module in Canvas.

Pathogen Project

You will select a historic, emerging, or re-emerging bacterial pathogen of interest and research it. Then, you will prepare a written summary which discusses the history of the pathogen, its pathogenesis, host counter measures, treatment strategies, preventative strategies, and new, exciting aspects of studying the pathogen. Additionally, you will highlight unanswered questions that could aid in the design of treatments.

The paper will be 7-9 pages in length and include at least 10 appropriate references (peer-reviewed scientific journals). Turnitin will be employed to check for plagiarism or inappropriate use of sources. For more assignment details, please see the assignment page in Canvas.

You are encouraged to use [Endnote Web](#), a free-of-charge resource provided by UF, or other library management software to assist with organizing your references.

Course Calendar

Week	Starts	Module and Textbook Chapters	Assignments Due
1 & 2	8/23	Module 0: Orientation Module 1: Course Introduction Wilson, Chapter 1	Course Orientation Quiz Introductory Discussion PlayPosit Quizzes (2)
3	9/4	Module 2: Physical Defenses and Innate Immunity Wilson, Chapters 2 & 3	PlayPosit Quizzes (4)
4	9/11	Module 3: Adaptive Immunity Wilson, Chapter 4	PlayPosit Quizzes (3)
5	9/18	Module 4: Vaccination Wilson, Chapter 17	PlayPosit Quizzes (2) Discussion 1
6	9/25	Module 5: Microbiota of the Human Body Wilson, Chapter 5	PlayPosit Quizzes (3) Case Study 1 Exam 1 [on Mod. 1-4]
7	10/2	Module 6: Microbes and Disease Wilson, Chapter 6	PlayPosit Quizzes (3) Pathogen Project Idea
8	10/9	Module 7: Measuring Infectivity and Virulence Wilson, Chapter 8	PlayPosit Quizzes (3)
9	10/16	Module 8: Identification of Virulence Factors Wilson, Chapters 9 & 10	PlayPosit Quizzes (3) Case Study 2
10	10/23	Module 9: Bacterial Invasion of Host Defenses Wilson, Chapter 11	PlayPosit Quizzes (4)
11	10/30	Module 10: Bacterial Toxins Wilson, Chapter 12	PlayPosit Quizzes (2) Exam 2 [on Mod. 5-9]
12	11/6	Module 11: Delivery of Virulence Factors and Regulation Wilson, Chapters 13 & 14	PlayPosit Quizzes (4)
13	11/13	Module 12: Antimicrobial Therapeutics and Resistance Wilson, Chapters 15 & 16	PlayPosit Quizzes (3) Discussion 2
14 & 15	11/20	Module 13: Gram-Positive Opportunistic Pathogens Wilson, Chapter 18	PlayPosit Quizzes (2) Case Study 3 Extra Credit Assignment
16	12/4	Module 14: Gram-Negative Opportunistic Pathogens, Biosecurity Wilson, Chapters 19 & 20	PlayPosit Quizzes (2) Pathogen Project
17	12/11	Finals	Exam 3 [on Mod. 10-14]

Class Participation Policy

This is an **online, asynchronous course**, in that we don't have a set time each week to meet and discuss the material. However, there are due dates each week. It is vital that you meet those due dates, as extensions and/or assignment forgiveness are not given without a university-approved excuse (see Attendance Policies above).

Tips for Success

Early in the week – over the weekend, or by Monday at the latest – you should read through the Canvas module pages for the week to get an idea of what you will need to do and how much time you will need to allot for each activity.

I recommend blocking out several chunks of time each week that you will dedicate to working on this course, the same way that you would have scheduled lecture times for a synchronous course.

To succeed in the course, remember to do the following:

- Digest course content.
- Utilize available resources.
- Pace yourself and work ahead whenever possible.
- Stay on top of the material.
- Plan and organize your semester.
- Pay attention to the Learning Objectives, Key Words, and Key Concepts.
- Remember that success requires time, effort, and commitment.

UF Policies

Privacy

Any online class sessions may be audio-visually recorded. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image.

Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to having your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared.

As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

University Policy on Accommodating Students with Disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the [Disability Resource Center](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester. Accommodations are **not** retroactive.

University Policy on Academic Conduct

UF students are bound by The Honor Pledge, which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The [Conduct Code](#) specifies behaviors that are in violation of this code and the possible sanctions. If you have any questions or concerns, please consult with the instructor for this class.

Plagiarism

The [Student Honor Code and Student Conduct Code](#) states that:

- "A Student must not represent as the Student's own work all or any portion of the work of another. Plagiarism includes but is not limited to:
- Stealing, misquoting, insufficiently paraphrasing, or patch-writing.
- Self-plagiarism, which is the reuse of the Student's own submitted work, or the simultaneous submission of the Student's own work, without the full and clear acknowledgment and permission of the Faculty to whom it is submitted.
- Submitting materials from any source without proper attribution.
- Submitting a document, assignment, or material that, in whole or in part, is identical or substantially identical to a document or assignment the Student did not author."

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing a course evaluation online via GatorEvals. The university has provided [guidance on how to give feedback](#).

Students will be notified when the evaluation period opens and can complete the evaluation either through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via the [GatorEvals website](#).

Summaries of course evaluation results are available to students at the [GatorEvals results page](#).

Etiquette and Netiquette

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions, and chats. UF has provided a [netiquette guide](#).

Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course.

A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services.

A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Policy on Course Syllabi 3 UF, Academic Affairs, August 5th, 2021, Honor Code and Student Conduct Code.

Copyright

All course materials posted on the Canvas course website are assembled and intended for students taking MCB5205 **only**, and only available for student use from our secure Canvas course website. Reposting any of these materials and sharing them via such resources as StudySoup, Course Hero, YouTube, Quizlet, Facebook, etc. is not

permitted by the instructor. Unauthorized re-posting of course materials (including textbook PDFs) may infringe on [UF's copyright policies](#) and the [Fair Use Act](#).

Getting Help and Additional Resources

For issues with technical difficulties for e-Learning, please contact the [UF Computing Help Desk](#). The phone number is (352) 392-HELP (4357).

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from the Help Desk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST email your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

More Technical Resources

- [UF Licensed Software](#) Students can access software programs like Office 365 and Adobe at free or reduced rates.
- [UF All Access](#) The University of Florida's digital course materials program. Selected courses are available through UF All Access to provide students with the lowest prices on their eBooks and courseware products.
- [UF Apps](#) Provides access to software applications from any computing device--laptops, tablets, desktops, and smartphones—from any location, at any time.
- [VPN](#) The Gatorlink VPN service provides secure remote access to the University of Florida network and makes it appear as if your computer were physically attached to the campus network. By using the Gatorlink VPN client, you may access resources on the UF network that are not typically available over an Internet path.
- [Canvas Quickstart Guide](#) This short guide will get you started with using Canvas.
- [Training and Safety](#) UFIT offers free software and other technical training sessions for students, teachers, and staff.
- [Safe Computing Practices](#) Learn how to protect your computer from threats regardless of brand, model, and operating system.
- [Zoom](#) is an easy-to-use video conferencing service available to all UF students, faculty, and staff that allows for meetings of up to 100 participants.

More Resources for Online Students

Available at the [Distance Learning website](#). These include:

- Counseling and wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Health and Wellness

If you or someone you know is in distress, please visit the [U Matter, We Care](#) website or call 352-392-1575 to refer or report a concern. A team member will reach out.

Visit the [Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services and non-crisis services.

Visit the [Student Health Care Center website](#) or call 352-392-1161 for 24/7 information on finding the care you need.

For safety and support, visit the [University Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).

For immediate medical care, call 352-733-0111 or go to the UF Health/Shands Emergency Room and Trauma Center at 1515 SW Archer Road.

For prevention services focused on optimal wellbeing, including wellness coaching for academic success, visit the [GatorWell website](#) or call 352-273-4450.

COVID-19

In response to COVID-19, UF has established practices to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our neighbors, and our loved ones.

[UF COVID Information](#)

[UF Guidance on Health and Wellness](#)

Academic Resources

- [Career Connections Center](#): Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- [Library Support](#): Various ways to receive assistance with respect to using the libraries or finding resources. [Distance student resources](#) are also available.
- [Teaching Center](#): Broward Hall, 352-392-2010 or to make an appointment, 352-392-6420. General study skills and tutoring.
- [Writing Studio](#): 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
- [Student Complaints and Grievances](#) Information is available in the Student Honor Code and Conduct Code.
- [University Registrar](#) Find information on records, data, and enrollment.
- [Academic Deadlines and Calendar](#) Consult for all important upcoming events.
- [UF Online Resources](#) Access to many services to help you achieve your goals.

Accessibility and Privacy Policies

For information about the privacy policies of the tools used in this course, see below:

- Adobe
 - [Adobe Privacy Policy](#)
 - [Adobe Accessibility](#)
- Instructure (Canvas)
 - [Instructure Privacy Policy](#)
 - [Instructure Accessibility](#)
- Microsoft
 - [Microsoft Privacy Policy](#)
 - [Microsoft Accessibility](#)
- PlayPosit
 - [PlayPosit Privacy Policy](#)
 - [PlayPosit Accessibility](#)
- Perusall
 - [Perusall Privacy Policy](#)
 - [Perusall Accessibility](#)
- Sonic Foundry (Mediasite Streaming Video Player)
 - [Sonic Foundry Privacy Policy](#)
 - [Sonic Foundry Accessibility](#) (PDF)
- YouTube (Google)
 - [YouTube \(Google\) Privacy Policy](#)
 - [YouTube \(Google\) Accessibility](#)
- Zoom
 - [Zoom Privacy Policy](#)
 - [Zoom Accessibility](#)

Disclaimer

Information contained in this syllabus is, to the best knowledge of this instructor, considered correct and complete when distributed to students. The instructor reserves the right, acting within the policies and procedures of the University of Florida, to make necessary changes in course content or instructional techniques with notification to students.