MCB4203 Bacterial Pathogens

Spring, 2025 (sections RES1, UFO1, HYBR)
Online, 3 credit hours

Instructor: Dr. Kelly Rice, Associate Professor, Department of Microbiology and Cell Science

Office location: Room 1150, Bldg. 981
352-392-1192
kcrice@ufl.edu
Zoom Office hours: Wednesdays 9:00 am – 10:30 am EST on Zoom:
https://ufl.zoom.us/j/97843711888?pwd=oEGHbGjm6e4f5ekpq9hoHclfLt0gHJ.1

TA: TBD
[office location]
[telephone number]
[email address]
[Zoom or in-person office hours, day, time, link location]

Course Description

Host-microbe relationships in the diseases of humans and animals, including the virulence characteristics of bacterial pathogens, the techniques used in their isolation/identification, and molecular approaches to the study of their virulence. Prereq: MCB 3020 or MCB 3023 with minimum grade of C.

Course Prerequisites

• MCB 3020 or MCB 3023 with minimum grade of C.

Course Learning Objectives

By the end of this course, students will be able to:
1. Explain how host immunity and microbiome contribute to infectious disease outcomes.
2. Describe the strategies used by bacterial pathogens that are required for host manifestation of disease.
3. Identify and compare strategies for the treatment and prevention of bacterial infection.
4. Explain the theory behind various in vitro and in vivo techniques used to assess bacterial diversity and virulence.
5. Analyze and evaluate case studies and scientific articles related to bacterial pathogenesis.

Learning Materials and Supplies

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

This course will be participating in the UF All Access program.
Login at https://www.bsd.ufl.edu/G1CO/IPay1f/start.aspx?TASK=INCLUDED and Opt-In to gain access to your required course materials - UF All Access will provide you with your required materials digitally at a reduced price and the charges will post directly to your student account, allowing any available Financial Aid funds to cover the cost of your materials. This option will be available starting 1 week prior to the first day of classes and ending 3 weeks after the first day of class.

Instructor Interaction Plan

- Expect an instructor response to email and Canvas message within 24 hours, during weekdays
- If possible, please do not wait until the weekend to complete assignments or exams, as I may not be available to answer emails or messages as quickly.
- Grades for assessments will be released within 48 hours of deadline
- If you ever have questions or need clarification on instructor feedback, please email me, attend office hours and/or bi-weekly live zoom reviews.
- I will email an announcement at least once a week to give updates and class feedback.
- I will monitor and read the discussions. I may post to the entire class, within groups, or message you individually concerning the discussion to give you feedback.
- I invite your feedback in the end-of-term GatorEvals and plan to continuously improve student experience within the course. Your opinion is highly valued!!

Required Technology

- Computer or comparable device with stable internet access
- Required peripherals: speakers and a microphone (or headset with microphone), web camera.

- Course syllabus, all lecture notes, and other course tools all are available through the Canvas Learning Support System homepage (http://lss.at.ufl.edu/). You will need to enter your Gatorlink username and password to access the system. If you do not have an active GatorLink ID, cannot remember your GatorLink login information, or if your ID does not work, please refer to the GatorLink website [http://gatorlink.ufl.edu] or to the UF Computing Help Desk (The Hub, 392-HELP) for assistance.
- You may need the following apps/plug-ins:
    - Adobe PDF reader (https://get.adobe.com/reader/)
    - Zoom (https://ufl.zoom.us/)
    - UF VPN (https://it.ufl.edu/ict/documentation/network-infrastructure/vpn/)

Overview of Course Format and Policies:

- This 100% online course is co-taught with MCB5205 (Microbiology of Human Pathogens).

- Each student is responsible for checking their ufl and Canvas email accounts, and the Canvas course website, daily for course messages and announcements.

Course format: All course lectures (pre-recorded), quizzes, open-book assignments, etc. will be posted no later than the beginning of each week (Sunday evening) on the Canvas course website. A series of live-online review sessions will be held throughout the semester using the "zoom conferences" function in Canvas on **Wednesdays during period 8**. Attendance to these live-online weekly reviews is optional. These sessions will be recorded and accessible through the "zoom conferences" function in Canvas. Please see the Canvas course website for link to these meetings.

Live zoom meetings on the following dates: January 22, February 5, February 19, March 5, March 26, April 9, April 21**(special Monday meeting for Exam 3 review)
Zoom link for live reviews:
https://ufl.zoom.us/j/94511112977?pwd=Tit0NzdMr11DxlFfavyInvEVLWTwY2.1

- Our class sessions are audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image agree 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 have 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.

- **Attendance and Make-Up Work: Attendance and Make-Up Work Requirements** for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/. Excused absences follow the criteria of the UF Undergraduate Catalog and should be communicated to the instructor prior to the missed exam whenever possible.

Course Assessments:

- **Knowledge Checks (open book):** There will be periodic knowledge checks throughout the semester, including a pre-learning assessment quiz and practice exams.

- **Lecture Videos (Playposit, open book):** You will earn credit for watching all lecture videos by the assigned due date.

- **Quizzes (open book):** There will be 13 quizzes, based on the weekly module material and/or posted readings. Each quiz is worth 5 points and will typically consist of multiple-choice questions. *At the end of semester your lowest 3 quiz scores will be dropped from your grade calculation. In other words, the top 10 quiz scores will be used in calculating your grade.* These

are open-book quizzes (administered through Canvas) that are meant to help you review the course material and practice for the exams. Students are welcome to study together and in fact collaboration is encouraged on these quizzes. However, each student is responsible for submitting his/her own quiz by the posted due date. The structure of the final course grade calculation with respect to the quizzes (dropping the 5 lowest quiz scores) is designed to give you a "buffer" for those rare occasions where a quiz cannot be completed due to illness, absence, or random forgetfulness. For review and study purposes, answers to quiz questions will be available in Canvas following each quiz due date. Weekly quiz answers will also be discussed during the live weekly online reviews.

- CANVAS HINTS for ONLINE QUIZ AND ASSIGNMENT SUBMISSION (provided by UF Computing Help Desk): It is recommended that you take online assessments during Help Desk hours whenever possible. If you have a problem while taking an Assessment, log out and log back in as quickly as possible. If the assessment is timed, the timer will continue to run while you are logged out*. If you still encounter difficulties, take a screen shot of the problem (Hit the "Print Scrn" button on your keyboard and paste "CTRL+V" into a program like Word or Paint) so the Help Desk can investigate and you will have "proof of technical difficulty" of the problem for your Instructor*. Call the Help Desk (352-392-4357) immediately. When you submit an Assignment/Assessment you get a confirmation screen that contains a confirmation number. You might want to make a habit of capturing a screen shot or printing it for your records. The Assignment/Assessment list will also show this Assignment/Assessment as "submitted" including the date and time of your submission. If you do not get the confirmation screen and your Assignment/Assessment is not listed as "submitted," you have not submitted the Assignment.

- **Case-studies (open book):** There will be 4 online case studies that will typically consist of several multiple-choice questions that are based on a case-study scenario with an associated set of problem-solving questions. These are made available ahead of time so you can answer all the questions prior to starting the case-study quiz. Students are welcome to collaborate on these quizzes. However, each student is responsible for submitting his/her own quiz by the posted due date.

- **Graded discussion boards (open book):** There will be 2 graded discussion board activities assigned throughout the semester; these will be based on assigned videos or readings that supplement the weekly lecture material.

- **Exams (closed book/proctored):** There will be 3 proctored exams throughout the semester (see attached weekly course schedule and grading scheme below). All exams for this course will be administered through Canvas and students will take them online through HonorLock.

Honorlock

Honorlock will proctor your exams this semester. Honorlock is an online proctoring service that allows you to take your exam from the comfort of your home. You DO NOT need to create an account, download software or schedule an appointment in advance. Honorlock is available 24/7 and all that is needed is a computer, a working webcam, and a stable Internet connection. All exams will be administered through Honorlock using Canvas.

To get started, you will need Google Chrome and to download the Honorlock Chrome Extension. You can download the extension at www.honorlock.com/extension/install. When you are ready to test, log into the LMS, go to your course, and click on your exam. Clicking Launch Proctoring will begin the Honorlock authentication process, where you will take a picture of yourself, show your ID, and complete a scan of your room. Honorlock will be recording your exam session by webcam as well as recording your screen. Honorlock also has an integrity algorithm that can detect search-engine use, so please do not attempt to search for answers, even if it is on a secondary device. Good luck! **Honorlock support is available 24/7/365. If you encounter any issues, you may contact us by live chat, phone (844-243-2500), and/or email (support@honorlock.com). If you encounter issues within the LMS, you may contact Your School's Online Support Services team at their number.**

Prior to the start of each exam, you will need the following:
- Government issued photo ID (or Student photo ID).
- Working camera and microphone.
- Stable internet connection.
- Google Chrome browser (https://chrome.com).

During the test: The online testing environment should mimic the 'in class' testing environment, and has the following guidelines:

Testing Area:
- Sit at a clean desk or table (not on a bed or couch)
- Lighting in the room must be bright enough to be considered "daylight" quality. Overhead lighting is preferred; however, if overhead is not possible, the source of light should not be behind the student
- Ensure your desk or table is cleared of all other materials.
- Make sure your laptop is fully charged or keep the charger within arm's reach.

The following items/actions are not permitted:
- No writing visible on desk or on walls.
- No websites other than Canvas and the Honorlock proctoring extension should be used or open while taking a proctored exam.
- Close all other programs and/or windows on the testing computer prior to logging into the proctored test environment.
- Make sure music/televisions are not playing in the background.
- Communication or receiving assistance from others is not permitted during a proctored assessment. Exceptions: contacting Honorlock support or your institution's help desk.
- No other persons except the test-taker should be in the room during testing.
- Using a phone or any other electronic device, other than your test-taking device, is not permitted.
- Remain visible in the web camera during the entire duration of the exam.
- Leaving the room during the testing period is not permitted.
- You must not take the computer into another room to finish testing (exam must be completed in the same room the "Exam Environment View" is completed in).
- Headphones or smart watches are not permitted.
- Dual monitors are not permitted.

Honorlock support: 1-(844) 243-2500

- Each exam is designed to be completed in 75 minutes or less. However, **the time-limit on each exam will be set at <u>100 minutes as a buffer in case of any unexpected technical difficulties with Honorlock</u>.**
- If you are unable to take an exam because of a technical glitch on your end (computer broken, poor internet connectivity), that is your responsibility and does not constitute an excused absence for an exam.
- *For additional questions, please review the Honorlock Student Handout (available under Modules on Canvas course website).*
- The dates and window for completing each exam is specified in the weekly course schedule.
- The rules and format for each Exam will be reviewed prior to each exam period. Materials such as cell phones, scratch paper, books, notes, calculators, etc. <u>are NEVER allowed during the exam</u>.
- Exam videos will be reviewed by the course instructor and/or TA to verify that academic integrity of your exam has not been breached.

Required Digital Information Literacy Skills

- Using the Canvas learning management system
- Using email with attachments
- Creating and submitting files in commonly used word processing program formats
- Downloading and installing software
- Using Zoom web conferencing tool
- Using online search tools for specific academic purposes, including the ability to use search criteria, keywords, and filters

Communication Guidelines

- Use **Course Question Discussion Board**, for general course questions that others may have too.
- Use **Canvas Inbox (messaging tool)** for questions that are specific to your grades or submissions.
- **Email & phone correspondence** are for (1) setting a meeting time for office hours, (2) DRC accommodations; (3) emergency situations; or (4) highly sensitive situations.
- A respectful tone is used by all community members in all forms of communication.
- Written communication, both formal and informal, uses the official language of instruction rather than popular online abbreviations and graphic elements such as those sometimes used in social media.
- Video interactions reflect a respectful tone in verbal communications and body language.

Technical Support

UF Computing Help Desk & Ticket Number: All technical issues require a UF Helpdesk Ticket Number. The UF Helpdesk is available 24 hours a day, 7 days a week. https://helpdesk.ufl.edu/ | 352-392-4357
 [Consider adding information for learners with no or limited access to technology, including free or low-cost resources related to internet connectivity and hardware/software needs.]

Weekly Course Schedule

Unless otherwise specified, all graded assessments (exams, weekly quizzes, discussion boards, case studies) are due on Sundays at 11:59 pm EST.

Module	Topic	Assessment(s)	Due Dates
M0	Course Orientation	Discussion board post, Pre-learning Assessment	1/19/2025
M1	Koch's postulates, *H. pylori*	Case study #1, weekly quiz	1/19/2025
M2	Microbial Census, Microbial shift disease	Weekly quiz	1/26/2025
M3	*S. mutans,* Physical defenses	Weekly quiz	02/02/2025
M4	Innate immunity, Adaptive Immunity	Weekly quiz	02/09/2025
	Exam 1 (covering M1-M4)		**02/16/2025**
M5	Measuring Infectivity and Virulence	Weekly quiz, Case study #2, Graded discussion board post #1	02/16/2025
M6	Bacterial Evasion of Host Defenses I	Weekly quiz	02/23/2025
M7	Bacterial Evasion of Host Defenses II	Weekly quiz	03/02/2025
M8	Bacterial Toxins, Delivery of Virulence Factors	Weekly quiz	03/09/2025
M9	Quorum sensing	Weekly quiz, Case Study #3	03/16/2025
SPRING BREAK (3/17/25-03/21/2025)			
	Exam 2 (covering M5-M9)		**03/30/2025**
M10	Antibiotic Targets	Weekly quiz, Graded discussion board post #2	03/30/2025
M11	Antibiotic Resistance Mechanisms, MRSA	Weekly quiz	04/06/2025
M12	Identification of Bacterial Virulence Factors (bacterial and host approaches)	Weekly quiz, Case study #4	04/13/2025
M13	Biosecurity, *B. anthracis*	Weekly quiz	04/20/2025
	Course GatorEval Survey		
	Exam 3 (covering M10-M13)		**04/27/2025**

Grading Policy

Grades for assessments will be released within 48 hours of deadline. If you ever have questions about grades or need clarification on instructor feedback, please email me, attend office hours and/or bi-weekly live zoom reviews.

Assignment Type	Percent of Final Grade
Weekly Quizzes (13)	10%
Lecture Videos (Playposit)	5%
Practice Knowledge Checks	11%
Case Studies (4)	10%
Discussion board posts (2)	10%
Exam 1	18%
Exam 2	18%
Exam 3	18%

Grading Scale

Final letter grades will be assigned based on the following percentages:

Final Letter Grade	Percentage
A	93% - 100%
A-	89% - 92.9%
B+	87% - 88.9%
B	84% - 86.9%
B-	80% - 83.9%
C+	77% - 79.9%
C	72% - 76.9%
C-	70% - 71.9%
D+	65% - 69.9%
D	60% - 64.9%
E	0% - 59.9%

See the current UF grading policies for more information.

Attendance & Make-up Work

Excused absences follow the criteria of the UF Undergraduate Catalog and should be communicated to the instructor prior to the missed exam whenever possible. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies: UF Attendance Policies

Academic Honesty

University of Florida students are bound by the Honor Pledge. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Student Honor Code." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit 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."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see Student Conduct Code Process.

FOR MCB 4203, it is assumed that you will complete all work independently unless the instructor provides explicit permission for you to collaborate on specific course tasks. UF academic honesty policies will always be vigorously upheld in this course. All course materials, including quiz questions, posted on the Canvas course website are assembled and intended for students taking MCB4203/MCB5205 ONLY, and therefore they are only available for student use from our secure Canvas course website. Verbatim

re-posting of any of these materials to online note-taking services or other websites such as studysoup, "course-hero", You Tube, quizlet, Facebook, etc. is not permitted by the course instructor.

Student Privacy Disclaimer:

Our class sessions may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. 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 agree to have their voices recorded. If you are not willing to consent to have 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.

In-Class 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 guest 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

Course Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals,

in their Canvas course menu under GatorEvals, or via the GatorEvals site. Summaries of course evaluation results are available to students at GatorEvals Public Data.

Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities

A statement related to accommodations for students with disabilities such as:
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.

Campus Resources

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

Health and Wellness

- *U Matter, We Care*: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or https://umatter.ufl.edu/ to refer or report a concern and a team member will reach out to the student in distress.
- *Counseling and Wellness Center*: Visit https://counseling.ufl.edu/ or call 352-392-1575 for information on crisis services as well as non-crisis services.
- Student *Health Care Center*: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit https://shcc.ufl.edu/
- *University Police Department*: Visit https://police.ufl.edu/ or call 352-392-1111 (or 9-1-1 for emergencies).
- *UF Health Shands Emergency Room / Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; visit https://ufhealth.org/locations/uf-health-shands-emergency-room-trauma-center
- *GatorWell Health Promotion Services*: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit https://gatorwell.ufsa.ufl.edu/ or call 352-273-4450.

Academic Resources

- *E-learning technical support*: Contact the UF Computing Help Desk at 352-392-4357 https://it.ufl.edu/helpdesk/ or via e-mail at helpdesk@ufl.edu.

- *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.
- *Teaching Center*: 1317 Turlington Hall, 352-392-2010. General study skills and tutoring.
- *Writing Studio:* 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.
- *Student Concern*: Report Student Concerns or Conduct

Student Complaints:
- Residential Course: https://www.sfa.ufl.edu/written-student-complaints/
- Online Course: https://pfs.tnt.aa.ufl.edu/state-authorization-status/#student-complaint

Additional Information

Instructors may choose to clarify in their syllabus their teaching philosophy, expectations for classroom behavior, utilization of e-learning, and other information that will help students succeed in the course.

Privacy and Accessibility Policies

For information about the privacy policies of the tools used in this course, see the links below:
- Adobe
  - Adobe Privacy Policy
  - Adobe Accessibility
- Honorlock
  - Honorlock Privacy Policy
  - Honorlock Accessibility
- Instructure (Canvas)
  - Instructure Privacy Policy
  - Instructure Accessibility
- Microsoft
  - Microsoft Privacy Policy
  - Microsoft Accessibility
- Perusall
  - Perusal Accessibility
  - Perusal Privacy
- PlayPosit
  - PlayPosit Privacy Policy
  - PlayPosit Accessibility
- Sonic Foundry (Mediasite Streaming Video Player)
  - Sonic Foundry Privacy Policy
  - Mediasite Accessibility (PDF)
- YouTube (Google)
  - YouTube (Google) Privacy Policy
  - YouTube (Google) Accessibility
- Zoom
  - Zoom Privacy Policy
  - Zoom Accessibility