



BIOL-225 Microbiology w/Lab

Kathleen Albert

FORT HAYS TECH | NORTH CENTRAL

COURSE INFORMATION

This class is an in-depth study of the microbial organisms that affect human health. Lecture will cover the cellular and molecular biology of microbes, as well as providing historical perspective on microbiology. Bacterial genetics will be discussed in detail as a background for examination of microbial resistance, bioengineering and biotechnology. The student will learn practical techniques and applications of microscopy, aseptic technique and microbial identification through multiple laboratory exercises. Illustrations of the interactions between nurses, physicians, laboratorians, other health professionals and the patient will be provided to introduce the student to their respective roles in the diagnosis and management of human infectious disease

Credits: 5

Pre/Corequisites:

- Pre/Corequisite: Grade of C or better in BIOL 230. Students are not permitted to enroll in Anatomy & Physiology and Microbiology within the same term.

CLASS INFORMATION

Section Number:

Term: Fall Year: 2026 Start Date: 8/17/2026 End Date: 12/11/2026

INSTRUCTOR

Kathleen Albert

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Office Phone: 785-623-6165

Office Location: HSB-043

Office Hours:

MWF (9:30-10:30 AM), TTH (11:00 AM-12:00 PM)

TEXTBOOKS

Microbiology: A Human Perspective (with connect access card), 10th Ed. McGraw Hill ISBN13: 9781264341962

COURSE COMPETENCIES

1. Explain major landmarks in microscopy and cell biology and their medical and/or commercial applications in understanding and controlling microbial growth.
2. Identify and explain the major metabolic pathways of microorganisms.

3. Identify and explain major concepts in bacterial genetics including genetic engineering and biotechnology.
4. Explain the similarities and contrasts between eukaryotic cells, prokaryotes and infectious agents.
5. Explain the roles of the innate and adaptive immune systems and host-microbe interactions.
6. Explain immunologic disorders, antimicrobial therapy and basic epidemiological principles.
7. Describe the role of microbes in the production of skin/wound infections, CNS infections and diseases of the upper/lower respiratory tract.
8. Explain the roles of foodborne, waterborne and sexually-transmitted pathogens in the development of gastrointestinal and genitourinary tract infections.

GRADING INFORMATION

Classroom Policies

Respect

Topics discussed in class are expected to be approached by the instructor and students scientifically in an unbiased and non-judgmental manner. Therefore, it is expected that respect will be given to everyone in the classroom regardless of their background or opinions on an issue.

Plagiarism and Cheating

Plagiarism and cheating are considered unacceptable. Therefore, either of these actions will result in an automatic zero on the assignment. Use of generative AI (or other similar tools or software) is not permitted in this class for any assignments. This course assumes that work submitted by students – all papers, discussion boards, and case studies – will be generated by the students themselves. Use of AI tools in this course is considered a violation of Fort Hays Tech | North Central's Academic Honesty Policy. Violations will result in failure of the assignment or failure of the course.

Late Work

Work is expected to be turned in on time. Therefore, no late work will be accepted.

Exam & Quiz Make Up

Make-up quiz/exams will be given at the discretion of the instructor. Personal travel/vacations, work, etc. are not permissible reasons for make-up quiz/exams. This version of the quiz/exam will be more rigorous than the quiz/exam given during the assigned period to the rest of the class, may differ in format and will be worth 75% of the points. If the quiz/exam has already started when the student arrives to class, 25 points will be deducted from the final grade of the quiz/exam.

Participation

Participation means being active in class discussions, activities, labs, etc. If a student misses a laboratory during assigned class time, the student will not be able to make up the lab or turn in any assignments associated with the lab that was missed. Therefore, missing class will result in a zero on labs that was given during the student's absence. Due to this policy, your lowest score on a lab will be dropped at the end of

the semester. To acquire a passing grade in the course, participation is mandatory and all assignments must be turned in.

Electronics

Many activities will require the use technology in the classroom (such as taking notes). However, cell phones are discouraged from being used during class time unless designated by the instructor. If a cell phone is being used at an undesignated time, the instructor reserves the right to confiscate the cell phone until the end of the class period upon which time it will be returned to the student. Laptops may be used for class work but if being used to shop, play games, use social media, etc. the student will be asked to put it away.

Recording

When students record something that happens in a course (a lecture, class discussions, meetings, etc.) it has an impact on the rights of the people captured in that recording. For example, the instructor and the College may have rights to the intellectual property contained in that recording. At the same time, another student who may have been recorded has the right to privacy. In this class, students **may not** make audio or video recordings of course activity.

Time Commitment

A course is measured in credit hours. Each credit hour requires about 45 hours of work.

Blackboard

The instructor will use Blackboard as a medium for delivering materials and schedules to students. Therefore, students will be directed to the course shell on Blackboard frequently to access certain materials.

GRADING SCALE

After your numerical grade has been calculated, your letter grade will be determined as follows:

A 100% -90%

B 89% - 80%

C 79% - 70%

D 69% - 60%

F 59% and below

COMPUTATION OF GRADES

Assignments= 15%

Labs= 15%

Participation= 5%

Course Project= 15%

Quizzes= 20%

Exams= 30%

ACADEMIC HONESTY

Membership in the Fort Hays Tech | North Central learning community imposes upon the student a variety of commitments, obligations, and responsibilities. It is the policy of this College to impose sanctions on students who misrepresent their academic work. Appropriate classroom instructors or other designated persons will select these sanctions consistent with the seriousness of the violation and related considerations.

Examples of academic dishonesty include but are not limited to:

- Plagiarism: i.e. taking someone else's intellectual work and presenting it as one's own. Each department set standards of attribution. Faculty will include disciplinary or class-specific definitions in course syllabi.
- Cheating is unacceptable in any form. Examples include consultation of books, library materials, notes or intentional observation of another student's test on paper or a computer screen; accessing another student's answers from an exam to be given or in progress; submission of falsified data; alteration of exams or other academic exercises; and collaboration on projects where collaboration is forbidden.
- Falsification, forgery or alteration of any documents pertaining to assignments and examinations.
- The use of AI generated content from AI tools such as, but not limited to, ChatGPT, Dall-E, Co-Pilot, etc., is up to faculty discretion per course as stipulated within the course syllabus. Submitting AI generated work as your own, without attribution, will be considered academic dishonesty.
- In courses where the use of AI tools are not permitted as stipulated within the course syllabus, work submitted using AI will be considered academic dishonesty.
- Students who participate in, or assist with, cheating or plagiarism will also be in violation of this policy.

Classroom instructors and/or administrators will assess sanctions for violations of this policy. The seriousness of the violation will dictate the severity of the sanction imposed. Academic sanctions may include but are not limited to any of the following:

1. verbal or written warning
2. lowering of grade for an assignment
3. lowering of term grade

Administrative sanctions may include but are not limited to either of the following

1. Suspension from the course, program, or College
2. Dismissal from the course, program, or College

FORT HAYS TECH | NORTH CENTRAL MISSION STATEMENT

Fort Hays Tech | North Central delivers applied, innovative and personalized education to empower learners, enrich lives, develop skilled professionals and strengthen economic systems.

Vision Statement

Fort Hays Tech | North Central is dedicated to being a leader in workforce development by maximizing value for students, employers and communities through educational excellence.

Core Values

Achieving EXCELLENCE with INTEGRITY through

DEDICATION

INNOVATION

COLLABORATION

COMMUNICATION

FORT HAYS TECH | NORTH CENTRAL NON-DISCRIMINATION POLICY

To provide equal employment, advancement, and learning opportunities to all individuals, employment and student admission decisions at Fort Hays Tech | North Central will be based on merit and qualifications. Fort Hays Tech | North Central does not discriminate on the basis of any characteristic protected by law in all aspects of employment and admission in its education programs or activities. Any person having inquiries concerning Fort Hays Tech | North Central's non-discrimination policy, including the application of Equal Opportunity Employment, Titles IV, VI, VII, IX, Section 504, ADA, and impending regulations, is directed to the VP of Student and Instructional Services at (800) 658-4655, or compliance@fhtechnnc.edu, or PO Box 507, 3033 Hwy 24, Beloit, KS 67420.

FORT HAYS TECH | NORTH CENTRAL TOBACCO USE POLICY

The use of tobacco products in any form and/or electronic cigarettes is prohibited in, or within ten (10) feet of any building owned, leased, or rented by the College. Kansas Law established the minimum age of 21 to sell, purchase, or possess cigarettes, electronic cigarettes, or tobacco products. Underage use or possession of any of these products is prohibited on property owned, leased, or rented by the College.

FORT HAYS TECH | NORTH CENTRAL WEAPONS POLICY

Fort Hays Tech | North Central prohibits the possession and use of firearms, explosives, and other weapons on Fort Hays Tech | North Central property, with certain limited exceptions. Please refer to the Fort Hays Tech | North Central Student Handbook for the full policy.

INCLEMENT WEATHER

College campus dismissals and cancellations will be announced using the College Alert system. Local media will also be notified.

OVERVIEW FOR STUDENTS WITH DISABILITIES

Fort Hays Tech | North Central is dedicated to providing equal access and opportunity to all campus programs and services for students with disabilities. We are committed to providing reasonable accommodations in accordance with applicable state and federal laws including, but not limited to, Section 504 and 508 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. We strive to create a safe, respectful and inclusive environment and promote awareness, knowledge and self-advocacy.

Fort Hays Tech | North Central acknowledges that traditional methods, programs and services are not always appropriate or sufficient to accommodate the limitations experienced by some qualified persons with disabilities. When a student's disability prevents him/her from fulfilling a course requirement through conventional procedures, consideration will be given to alternatives, **keeping in mind that academic standards must be maintained.**

Services are provided through Student Accessibility Services (SAS) staff located in the Student Success Center, on the Beloit Campus, and in Student Services, on the Hays Campus.

- Director of Learning Services, may be reached at [1-785-738-9020](tel:1-785-738-9020); or by mail at [Fort Hays Tech | North Central, 3033 US Hwy 24, Beloit, KS 67420](#).

Student Responsibilities

Students requesting support services will need to register ("self-disclose" and complete Student Accessibility Services Intake and Consent Form), provide appropriate documentation (if available) including how the disability affects academic performance and suggested accommodations, and communicate with the Director of Learning Services as part of the interactive process to create an *Educational Accommodation Plan* that will notify Instructors of approved accommodations, services and/or auxiliary aids.

Students are encouraged to make timely and appropriate disclosures and requests, at least two weeks in advance of a course, program, or activity for which an accommodation is requested (or as soon as realistically possible) to allow adequate time for accommodation services to be set in place.

Accommodations, Academic Support Services, or Auxiliary Aids

Reasonable accommodations including academic support services and auxiliary aids are provided to allow students with disabilities an equal opportunity to participate in and benefit from our educational programs. Accommodations will be provided on a case-by-case basis determined by student request, documentation, intake interview, Educational Accommodation Plan team, and assessment of individual needs and course requirements.

Reasonable testing accommodations may include, but are not limited to:

- Extended testing time
- Reduced distraction testing environment
- Test reader and/or scribe
- Use of calculator

Academic support services/auxiliary aids may include, but are not limited to:

- Note-taking assistance (second set of notes, power point slides, or other visual aids provided)
- Sign Language Interpreter
- Preferential seating in the classroom
- Large print exams, handouts, signs, etc.
- Telecommunications devices
- Use of Assistive Technology

Accommodations may not fundamentally alter the nature of the program or activity, lower academic standards, present undue financial or administrative burden on the college, or pose a threat to others or public safety.

Additionally, some accommodations and services cannot be provided, such as personal devices or assistance with personal services.

Auxiliary aids may be available through a variety of sources available to individual students. The student may make a request in obtaining specialized support services from other resources such as Vocational Rehabilitation Services (VR), Recordings for the Blind, Kansas Talking Book Service, etc. For example, Vocational Rehabilitation may fund such items as transportation to the institution, tuition, textbooks, hearing aids, and other individually prescribed medical devices.

If at any time throughout the academic year, a student feels that the agreed upon accommodations are not being followed or that alternate accommodations need to be provided, the student should notify Student Accessibility Services (SAS) staff. Fort Hays Tech | North Central is committed to student success; however, we do not require students to use accommodations. The decision of when to utilize approved accommodations or services is up to the student. Integration, self-advocacy and individual responsibility are promoted and expected.

Grievance Procedure

Any student who believes he or she has been subjected to discrimination on the basis of disability or has been denied access or accommodations, shall have the right to invoke the Grievance Procedure.

Students are encouraged to first discuss their concerns with SAS. An attempt will be made to resolve the issue(s) causing concern by assisting the student in discussions with the person(s) involved. Most situations are positively resolved through this process. If the student does not feel the concern or complaint has been appropriately resolved, he or she should contact the [Vice President of Student and Instructional Services](#) at 1-800-658-4655 or PO Box 507, 3033 US Hwy 24, Beloit, KS 67420, where grievance procedures are filed for all students, including students with disabilities.

If the complaint is not resolved at the College level, a student may choose to file a complaint with the [Office for Civil Rights](#) at 1-816-268-0550 or [U.S. Department of Education, One Petticoat Lane, 1010 Walnut Street, Suite 320, Kansas City, MO 64106](#).

Confidentiality

All information regarding a student's disability is confidential. All documentation will remain separate from academic records and will not be released to an individual or source external to Fort Hays Tech | North Central without the student's written consent. In order to provide effective services, it may be necessary to communicate limited information on a need-to-know basis regarding disability-related needs to Fort Hays Tech | North Central faculty and/or staff.

REASONABLE SUSPICION

- If reasonable suspicion of substance abuse exists regarding an employee or student based on objective criteria (including, but not limited to, behavior, appearance, demeanor, detection of the odor of alcohol or any controlled substance), the employee or student will be requested to consent to drug testing performed by Fort Hays Tech | North Central's contract vendor at the expense of the college.
- A. A college administrator (or their designee) shall drive the employee or student to the vendor’s site for drug testing and shall return the employee or student to his/her residence (or arrange for transportation) following the testing.
 - B. Test results shall be sent directly to the college administrator, with a copy also sent to the employee or student. All test results will be considered confidential, access to the results will be limited to institutional personnel who have a legitimate need-to-know.
 - C. In the event of a positive test result, the employee or student may request a retest of the sample at the employee or student’s expense. The request must be submitted within 24 hours.
 - D. Positive results for any illegal drugs, or prescription drugs (either not prescribed for the employee or student, or at levels above the prescribed dosage), or blood alcohol level of 0.04 or greater shall be grounds for disciplinary action, up to and including termination or expulsion.
 - E. Refusal to provide a specimen for this testing shall be treated as a positive drug test result.
 - F. Test results or specimens that have been determined to be altered by the employee or student shall be grounds for disciplinary action, up to and including termination or expulsion.
 - G. If the employee or student tests positive for an authorized prescription drug which may impair his/her performance or judgment, the employee or student may not be permitted to participate in college activities until he/she provides a doctor’s release.

RIGHT TO MODIFY THE SYLLABUS

The instructor reserves the right to modify the syllabus during the semester. Students will be given advanced notice if a change would occur.

SCHEDULE

Date/Session	Notes		
Principles of Microbiology Tentative Schedule, Fall 2026	RIGHT TO MODIFY THE SYLLABUS		
	The instructor reserves the right to modify the syllabus during the semester.		
	Students will be notified if a change is made.		
		Chapter Readings	Assignments & Exams
	1	Chapter 3 Microscopy and Cell Structure	Assignments Ch. 3 Discussion Quiz Lab

2	Chapter 4 Dynamics of Microbial Growth Chapter 5 Control of Microbial Growth	Assignment Ch. 4 & 5 Discussion Quizzes Labs
3	Chapter 6 Metabolism: Fueling the Growth Chapter 7 Blueprint of Life	Assignments Ch. 6 & 7 Discussion Quizzes Labs

Date/Session	Notes		
			Reading Assignment I
	4	Chapter 8 Bacterial Genetics	Assignments Ch. 8 Discussion Quizzes Labs
	5	Chapter 10 ID and Classification of Microorganisms	Assignments Ch. 10 Discussion Quizzes Labs Reading Assignment II
	6	Chapter 12 Eukaryotic Members of the Microbial World Chapter 13 Viruses, Prions and Viroids	Assignments Ch. 12 & 13 Discussion Quizzes Labs
	7	Chapter 14 Innate Immune Response Chapter 15 Adaptive Immune Response	Assignments Ch. 14 & 15 Discussion Quizzes Labs
	8	Chapter 16 Host-Microbe Interactions Chapter 17 Immunologic Disorders	Assignments Ch. 16 & 17 Discussion Quizzes Labs
	9	Chapter 18 Applications of Immune Responses Chapter 19 Epidemiology	Assignments Ch. 18 & 19 Quizzes Labs Reading Assignment III
	10	Chapter 20 Antimicrobial Medications Chapter 21 Respiratory System Infections	Assignments Ch. 20 & 21 Discussion Quizzes Labs
	11	Chapter 22 Skin Infections Chapter 23 Wound Infections	Assignments Ch. 22 & 23 Discussion Quizzes Labs
	12	Chapter 24 Digestive System Infections Chapter 25 Blood & Lymphatic Infections	Assignments Ch. 24 & 25 Discussion Quizzes Labs Reading Assignment IV
	13	Chapter 26 Nervous System Infections	Assignment 26

Date/Session	Notes		
			Discussion Quiz Labs
	14	Chapter 27 Genitourinary Tract Infections Chapter 30 Food Microbiology	Assignments 27 & 30 Discussion Quizzes Labs
		THANKSGIVING BREAK	
	15	Final Exam	