

Course Description Template for Medical microbiologyI second Year first Semester (Theoretical)

Performance Review of Higher Education Institution ((Academic Program Review))

Course Description

This course description provides a summary of the main characteristics of the course and the learning outcomes expected from the student to achieve, demonstrating whether they have made the maximum use of the available learning opportunities. It must be linked to the .program description

1. Educational Institution	Ministry of Higher Education and Scientific Research / Al-Zahrawi University
2. University Department / Center	College of Pharmacy
3. Course Name / Code	Medical microbiologyI Theoretical PCLS 24
4. Programs in which it is included	Bachelor of Pharmaceutical Sciences
5. Available Forms of Attendance	Daily Attendance
6. Semester / Year	first Semester / second year
7. Total Number of Study Hours	2 hours weekly
8. Date of preparing this description	2025-2026
Course Objectives: The course aims to develop an understanding of the fundamental principles of medical microbiology by focusing on the classification, morphology, pathogenicity, and transmission of medically important microorganisms including bacteria, viruses, fungi, and parasites. It emphasizes the relationship between microorganisms and human disease, host defense mechanisms, and the basic laboratory methods used for identification and diagnosis of infectious agents. Additionally, the course highlights the importance of infection prevention, antimicrobial agents, sterilization, disinfection, and public health control measures, supported by practical examples and clinically relevant cases commonly encountered in healthcare settings.	
9. Learning Outcomes, Teaching and Learning Methods, and Evaluation	

A. Knowledge and Understanding

- ❑ Explain the fundamental principles of medical microbiology and the role of microorganisms in human health and disease.
- ▢ Describe the classification, morphology, pathogenicity, and modes of transmission of medically important bacteria, viruses, fungi, and parasites.
- ▣ Apply principles of host–microbe interaction, immune response, and laboratory diagnostic methods to understand the prevention, identification, and control of infectious diseases.
- ▤ Demonstrate understanding of microbiological practices including specimen collection, microbial identification, antimicrobial susceptibility testing, sterilization, disinfection, and infection control measures.

1. Subject-Specific Skills

- ❑ Developing proficiency in microscopic examination, staining techniques, and recognition of the morphological characteristics of medically important microorganisms.
- ▢ Acquiring skills in collection, handling, culturing, and identification of clinical specimens using basic microbiological laboratory methods.
- ▣ Gaining the ability to interpret laboratory findings, microbial growth patterns, and diagnostic test results for common infectious diseases.
- ▤ Developing skills in recognizing appropriate sterilization, disinfection, infection control measures, and principles of antimicrobial susceptibility testing.

Teaching and Learning Methods

- ❑ Theoretical lectures.
- ▢ Scientific posters and interactive classroom activities.
- ▣ Field visits to hospital labs.
- ▤ Homework assignments (coursework).

2. Evaluation Methods

- ❑ Midterm and final examinations.
- ▢ Oral examinations.
- ▣ Classroom activities and homework assignments.

3. Thinking Skills

- ❑ Using modern methods to prepare and deliver lectures through PowerPoint presentations.
- ▢ Applying group discussion techniques to enhance understanding of the subject matter.
- ▣ Assigning homework and research tasks to develop analytical and critical thinking skills.

4. General and Transferable Skills

- ❑ Enabling students to apply the knowledge they have acquired in practical settings.
- ▢ Enhancing students' self-confidence through participation in discussions and seminars.
- ▣ Empowering students to apply what they have learned to their professional development.

11. Course Structure					
Weeks	Hours	Required Learning Outcomes	Unit Name / Course or Topic	Learning Methods	Evaluation Method
1	٢	Knowledge	Importance of microbiology, History of microbiology	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
2	2	Knowledge	Anatomy of bacteria: Surface appendage, Capsule, Cell wall of G.+ve & G –ve bacteria, Cytoplasmic membrane.	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
3	٢	Knowledge	Bacterial physiology: Physical and chemical growth determinate, growth and growth curves, bacterial reproduction.	whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
4	٢	Knowledge	Genetics: Definition, genetic element, mutation (spontaneous, gene transfer, transformation, conjugation, and gene transduction).	whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
5	2	Knowledge	Recombinant DNA biotechnology.	whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
6	٢	Knowledge	Sporulation and germination.	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
7	3	Knowledge	Sterilization (chemical + physical Methods).	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
8	2	Knowledge	Chemotherapy.	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
9	2	Knowledge	Morphology of Bacteria, Staining and Classification.	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
10	2	Knowledge	Staphylococci species: <i>Streptococcus pyogenes</i> ; <i>Streptococcus pneumoniae</i>	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments

11	2	Knowledge	Aerobic Spore-forming bacteria Bacillus species (<i>B. anthracis</i> , <i>B. subtilis</i> , <i>B. ceseus</i>).	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
12	2	Knowledge	<i>Clostridium perfringens</i> ; <i>Clostridium tetani</i> ; <i>Clostridium botulium</i>	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
13	2	Knowledge	<i>Corynebacterium diphtheriae</i>	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
14	2	Knowledge	<i>Propionibacterium acnes</i> , <i>Listeria</i>	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments Group discussion, oral exams, and assignments
15	2	Knowledge	<i>Mycobacterium tuberculosis</i> ; <i>M. leprae</i>	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments
16	2	Knowledge	Chlamydiae; Actinomycetes	Whiteboard and PowerPoint Presentations	Group discussion, oral exams, and assignments

12. Infrastructure	
Required Readings:	References: Medical microbiology I
Special Requirements (Workshops, Journals, Software, Websites):	Electronic Websites: https://www.pathelective.com/
Social Services (Guest Lectures, Professional Training, Field Studies, Others)	Organizing workshops and courses for graduates: Field visits to hospital labs

13. Admission:	
Prerequisites	Admission according to the central plan
Minimum Number of Students	/
Maximum Number of Students	Admission exceeds the capacity plan.

Name of the Instructor:

Assistant lecturer Dr. Muntadher Hameed Thwaini