Course Description Form

1. Course Name:
Medical Microbiology I (Theoretical+ Practical)
2. Course Code:
Phcls25 212--
3. Semester / Year:
1st Semester/2nd year
4. Description Preparation Date:
01/9/2025
5. Available Attendance Forms:
Students' signature on attendance sheet
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours Theoretical + 2 hours Practical (75 total) /4 units
7. Course administrator's name
Theoretical
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Practical
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8. Course Objectives

Course Objectives To know the most common pathogenic bacteria, Knowing mode of transmission, Virulence factors, Pathogenesis and clinical significance Diagnosis, Treatment and Prevention.	• To know the basics of bacteria in te of shape, composition, dy cultivation, microscopic phenomena • To know the identification and gene process of bacteria, in addition sensitivity testing, sterilization, characterization of the detection bacterial diseases.

9. Teaching and Learning Strategies	
Strategy	Lecturing External resources via classroom Seminars Homework Quiz Practical laboratory demonstrations, microscopic slides and Lab book catalog

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	3 h theoretical	**A1:** To explain basic concepts in microbiology, including classification of microorganisms, cellular and genetic structure, and mechanisms of pathogenicity.	-Importance of microbiology, History of microbiology -Bacterial Anatomy: morphology and structure	Interactive lectures	Paper-based exams
	2 h practical	**B1:** Apply basic concepts of sterilization, bacterial staining, and sensitivity testing; performs laboratory experiments accurately and safely. **C1:** To adhere to biosafety procedures and professional conduct in the laboratory.	Methods of sterilization	Laboratory demonstration.	Practical exam, report
2	3 h theoretical	**A1:** To explain basic concepts in microbiology, including classification of microorganisms, cellular and genetic structure, and mechanisms of pathogenicity. **B2:** To analyze simple clinical cases and correlates them with microbial causes and resistance patterns.	-Bacterial physiology -Bacterial growth	Interactive lectures	Written exam, short quiz
	2 h practical	**A2:** To differentiate Gram-positive and Gram-negative bacteria. **B2:** To analyze clinical cases and correlates them with microbial causes and resistance patterns.	Types of culture media	Laboratory demonstration	Practical exam
3	3+2	**A1:** To explain basic concepts in microbiology, including classification of	-Genetic and biotechnology	Theoretical lectures.	Paper-based exams

		microorganisms, cellular and genetic structure, and mechanisms of pathogenicity.	-Bacterial nomenclature and classification Sporulation germination	Laboratory demonstration.	
4	3+2	**A1:** To explain basic concepts in microbiology, including classification of microorganisms, cellular and genetic structure, and mechanisms of pathogenicity.	Chemotherapy	Theoretical lectures. Laboratory demonstration.	Paper-based exams
5	3+2	**A1:** To explain basic concepts in microbiology, including classification of microorganisms, cellular and genetic structure, and mechanisms of pathogenicity.	Morphology of Bacte Staining Classification. Norı flora and pathogenicity	Theoretical lectures. Laboratory experiments.	Paper-based exams
6	3+2	**A2:** To differentiate Gram-positive and Gram-negative bacteria. **B2:** To analyze clinical cases and correlates them with microbial causes and resistance patterns.	Staphylococcus species Streptococcus pyogenes Streptococcus pneumoniae	Theoretical lectures. Laboratory demonstration.	Paper-based exams
7	3+2	**A2:** To differentiate Gram-positive and Gram-negative bacteria. **B2:** To analyze clinical cases and correlates them with microbial causes and resistance patterns.	Non spore forming C. diphtheriae Spore-forming bacteria Bacillus species (B. anthracis, B. subtilis, B. cereus). Clostridium species	Theoretical lectures. Laboratory demonstration.	Paper-based exams
8	**Mid-term exam**				
9	3+2	**A2:** To differentiate Gram-positive and Gram-negative bacteria. **B2:** To analyze clinical cases and correlates them with microbial causes and resistance patterns.	Propionibacterium acnes, Listeria	Theoretical lectures. Laboratory demonstration.	Paper-based exams
10	3+2	**A2:** To differentiate Gram-positive and Gram-negative bacteria.	Mycobacterium tuberculosis; M. leprae Actinomycetes	Theoretical lectures.	Paper-based exams

		B2: To analyze clinical cases and correlates them with microbial causes and resistance patterns.	Nocardia Chlamyadiae	Laboratory demonstration.	
11	3+2	**A2:** To differentiate Gram-positive and Gram-negative bacteria. **B2:** To analyze clinical cases and correlates them with microbial causes and resistance patterns.	Identification & classification of Gram negative bacteria Enterobacteriaceae: E. coli; Klebsiella species Citrobacter , Sertalia, Hafmia, Enterobacter	Theoretical lectures. Laboratory demonstration.	Paper-based exams
12	3+2	**A2:** To differentiate Gram-positive and Gram-negative bacteria. **B2:** To analyze clinical cases and correlates them with microbial causes and resistance patterns.	Shigella species; Salmonella species; Proteus species, Pseudomonas species	Theoretical lectures. Laboratory demonstration.	Paper-based exams
13	3+2	**A2:** To differentiate Gram-positive and Gram-negative bacteria. **B2:** To analyze clinical cases and correlates them with microbial causes and resistance patterns.	Vibrio Cholerae; Bruce species ; Haemophilus species ; Campylobacte species .	Theoretical lectures. Laboratory demonstration.	Paper-based exams
14	3+2	**A2:** To differentiate Gram-positive and Gram-negative bacteria. **B2:** To analyze clinical cases and correlates them with microbial causes and resistance patterns.	Helicobacter species ; Bordetella pertussis; Treponema pallidum (Spirochetes);Yersinia pestis; Pasteurella multicidae.	Theoretical lectures. Laboratory demonstration.	Paper-based exams
15	3	**B3:** To apply the concept of self-learning	Students' seminars	Presentation	Presentation

11. Course Evaluation

- 20 M Theoretical assessment;
  (paper-based mid-term exam + quiz + attendance + seminar)
- 20 M practical assessment (attendance + quiz + practice)
- 60 M paper-based theoretical final exam

100 M total

12. Learning and Teaching Resources

Required textbooks	1. Brooks GF, Carroll KC, Butel JS, Morse SA. Jawetz, Melnick, and

	Adelberg's Medical Microbiology, 24th edition, MCGraw-Hill, Last Edition. 2. Brwn AE. Bensonn's Microbiological Application, MCGraw-Hill. Last Edition
Main references (sources)	1. Hugo and Russell's - Pharmaceut Microbiology 8th edition 2. Lippincott illustrated review microbiol . By Harvey. Last Edition
Electronic References, Websites	https://www.who.int/ https://www.cdc.gov/index.htm
Curriculum development	5%