



Department of Biology

College of Science

Salahaddin University-Erbil

Subject: Medical Bacteriology Theory

Course Book – (Year 4)

Lecturer's name:

Asst.Prof. Daristan Jamal Ghareeb

Asst.Prof. Dr.Akhter Ahmed Ahmed

Academic Year: 2022/2023- Second Semester

Course Book

1. Course name	Medical Bacteriology
2. Lecturer in charge	Daristan Jamal Ghareeb & Akhter A Ahmed
3. Department/ College	Biology /Science
4. Contact	e-mail: daristan.ghareeb@su.edu.krd akhter.ahmed@su.edu.krd Tel: 07507929164
5. Time (in hours) per week	Theory:2 Practical:6
6. Office hours	<u>To be Return to the schedule on the office door</u>
7. Course code	SBIO 402
8. Teacher's academic profile	<p>Asst.Prof. Daristan Jamal Ghareeb B.Sc in Biology, Salahaddin University, 1988. M.Sc in Microbiology, Salahaddin University, 1994. Assistant Professor of Medical Microbiology at the Department of Biology, College of Science, University of Salahaddin University. Member of Kurdistan Biological Syndicate. -25 years of experience in teaching and research in basic and Medical Bacteriology.</p> <p>Asst.Prof. Dr. Akhter Ahmed Ahmed B.Sc. in Microbiology, University of Salahaddin, College of Sciences, 1995 . M.Sc. in Microbiology, University of Salahaddin, College of Sciences, 2000. Ph.D in Medical Bacteriology, University of Salahaddin, College of Science 2019.</p>
9. Keywords	Microbiology, Medical Microbiology, Bacteriology, Pathogenesis, Bacterial Toxins, Bacterial Physiology.
10. Course overview:	This course is one of the fundamental courses in biology which covers all microbiological agents that are responsible for human diseases especially the bacterial agents. The students should learn how to diagnose and analyze different specimens taken from different systems

of the human body and isolate the agents responsible for such diseases. Both theoretical and practical laboratory sessions will help the students gain the required skills to work in the public and private clinics and diagnostics laboratories.

11. Course objective:

This course aims to teach general principles of bacterial pathogenesis and the mechanisms of disease production through the array of virulence factors and toxins possessed by the pathogenic bacteria. Also it includes the study of the mechanisms of actions of different antimicrobial agents and how to combat these agents.

12. Student's obligation

Exam policy:

Students should take 2 exams throughout the course.

Classroom rules:

1-Students must arrive to class on time and to stay for the entire class period (or until dismissed) because random arrivals and exits are disrespectful and distracting.

2-Talking and other disruptive behaviors are not permitted while classes are in session

3-Entering the class room after the instructor's presentation has started can be distracting both to the instructor as well as to other students, especially if the person arriving late walks across the length of the class room between the instructor and the assembled students. Those who come late should seat themselves as close to the entrance as possible and avoid any sort of disruption.

4-All cell phones, smartphones, and other electronic devices (e.g., pagers, iPods) must be turned off (or on vibrate) and hidden from view during class time.

5-During class please refrain from side conversations. These can be disruptive to your fellow students and your professor.

13. Forms of teaching ; Course Book and PowerPoint

14. Assessment scheme

Component	Date	Percent
Paper based exams		13%
Quizzes and all year attendance		2%

Practical Exam	35%
Final Exam	50%

15. Student learning outcome: After completion of this course, you will be able to:

Learning different terms and definitions in Medical Microbiology.
 Diagnosing different Microbiological agents from specimens.
 Learning the shape and structure of different bacteria.
 Learning the process of disease production by bacteria.
 Learning the structure and mechanisms of different bacterial toxins.
 Learning the mode of action of different antibiotics.
 Learning the pathology of disease production by different bacterial toxins and enzymes.

16. Course Reading List and References:

▪ **Key references:**

-Stefan Riedel, Stephen A. Morse, Timothy A. Mietzner, Steve Miller (2019).
 Jawetz, Melnick, & Adelberg's Medical Microbiology, 28th Edition .

-Warren E. Levinson. (2018). Review of Medical Microbiology & Immunology
 15th Edition by The McGraw-Hill Companies.

✦ **Useful references:**

- Essential Microbiology. Stuart Hogg,. John Wiley & Sons Ltd.
- Sherris Medical Microbiology, An Introduction To Infectious Disease. James J. Champoux , Frederick C. Neidhardt, W. Lawrence Drew, James J. Plorde, Kenneth J. Rya N, C. George Ray. Mcgraw-Hill.
- Medical Microbiology. Cedric Mims, Hazel Dockrell, Richard Goering, Ivan Roitt, Derek Wakelin, & Mark Zuckerman.

17. The Topics:

Week 1 and 2	Enteric Gram Negative Rods (Enterobacteriaceae)
Week 3	Pseudomonas and Acinetobacters

Week 4	Haemophilus, Bordetella, Brucella
Week 5 and 6	Curved Gram-Negative Rods Affecting the Gastrointestinal Tract Vibrios, Campylobacters and Helicobacter
Week 7	Gram-Negative Rods Related to Animal Sources (Zoonotic Organisms) Yersinia and Pasteurella
Week 8 and 9	Mycobacteria
Week 10	Exam
Week 12	Mycoplasma and Cellwall defective bacteria
Week 13	Chlamydia Species
Week 14	Rickettsia and related genera
Week 15	Infections caused by anaerobic bacteria: Physiology and Growth Conditions for anaerobes
Week 16	Spirochetes

18. Examinations

Examination samples

1- Answer the following questions

Question: 3- Mention the main virulence factors of Escherichia coli.

Answer: -pili, a capsule, endotoxin, and three exotoxins (enterotoxins)

Question: What are the four Fs for Shigella transmission?

Answer: Food, feces, flies, finger

2- State the role of the followings in the bacterial pathogenesis:

- Mucinase of *Vibrio cholerae*

- Answer: dissolves the protective glycoprotein coating over the intestinal cells.

3- Write the scientific explanation behind the following statements:

Question: Mycobacterium tuberculosis causes disease in highly oxygenated tissues.

Answer: Because *M. tuberculosis* is an obligate aerobe.

19. Extra notes:

Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks.

20. Peer review

پیداچوونہوہی ھاوہل

This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.

(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).

ئەم کۆرسبووکە دەبیت لەلایەن ھاوئێکی ئەکادیمیەو سەیر بکرتیت و ناوهرۆکی بابەتەکانی کۆرسەکه پەسەند بکات و جەند ووشەیهک بنوسیت لەسەر شیاوی ناوهرۆکی کۆرسەکه و واژووی لەسەر بکات.

ھاوئێ ئەو کەسەیه که زانیاری هەبیت لەسەر کۆرسەکه و دەبیت پلەي زانستی له مامۆستا که مەتر نەبیت.

