



Department of Medical Laboratory Science

College of Science

Charmo university



Subject: Antibiotics

Course Book: *Semester 7/Year 4*

Lecturer's name Assist. Prof. Dr. Karzan Rafiq Sidiq, PhD

Academic Year: 2024/2025

Course Book

1. Course name	Antibiotics
2. Lecturer in charge	Assist. Prof. Dr. Karzan Rafiq Sidiq, PhD
3. Department/ College	Medical Laboratory Science/ Science
4. Contact	e-mail: Karzan.sidiq@chu.edu.iq Tel: (optional)
5. Time (in hours) per week	Theory: 2 hours
6. Office hours	Sunday to Wednesday (10:00- 12:00)
7. Course code	MLS7523
8. Teacher's academic profile	https://dqa.chu.edu.iq/dqa/profile/karzan.sidiq@chu.edu.iq/
9. Keywords	Antibiotics, Antibacteria, Antifungi, Antivirus, Antiparasite, Drug
10. Course overview: Antimicrobial agents are chemical compound that are either synthesized or produced by microorganisms. These compounds are magic bullets against pathogenic bacteria, fungi, viruses and parasites. Understanding of antimicrobial agents is very important for the biological, health and medical experts. Thus, you must study antimicrobial agents' course as a basic and applicable module. This definitely gives students a scientific background to easily understand the other areas of biology such as treatments of infectious illnesses. This course is also important for the medical laboratory students to select the effective antibacterial and antifungal agents against the pathogenic bacteria and fungi by antibiotic and antifungal sensitivity tests. In this course, the students also get enough information about antimicrobial resistance and mechanisms of resistance.	
11. Course objective: <ul style="list-style-type: none"> • This course is designed to teach the students a comprehensive overview of antimicrobial agents. • To create a scientific background at the students about basics of antimicrobial therapy, mechanisms of antimicrobial action, groups of antimicrobials and mechanisms of resistance. • Explain methods of testing antibiotics against clinical bacterial isolates. 	
 Attendance Policy Attendance is mandatory and will be taken daily by the Instructor. Students are expected to attend all the classes for the entire semester. Students are responsible for material presented in lectures. Students are excused from class due to acute illness, a personal crisis (e.g. death in the family). This in no way cancels any responsibility for work due or assigned during absence.	
 Make-up Policy Because all examinations are announced in advance a zero will be assigned to any missed examination unless a student has a legitimate acceptable reason, such as illness, for not being able to take the examination during all the days when the examination was announced.	

Academic Dishonesty

Any type of dishonesty (plagiarism, copying another's test or home-work, etc) will NOT be tolerated. Students found guilty of any type of academic dishonesty are module to failure in this course, plus further punishment by the University Consul.

Deadlines/Due Dates

Recognizing that a large part of professional life is meeting deadlines, it is necessary to develop time management and organizational skills. Failure to meet the course deadlines will result in penalties. **Late assignments will be accepted with a penalty if they are less than 3 days passed their respective due dates, otherwise a zero will be assigned to those assignments.** Work can be submitted early.

Cell Phones

All cell phones are expected to be switched to vibrating mode if available and turned off completely if this feature is not an option. Disruption of class due to a cell phone will not be tolerated and the student will be asked to leave class. All other electronic equipment that the College member deems not essential to the provision of academic learning is prohibited from being used in class.

13. Forms of teaching

The lecturer use different means of learning such as white board and datashow, posters and models. The lectures are presented in powerpoint format, showing text and illustrated images. The lectures are uploaded via Google classroom at least 2 days in advance. Thus, students can download the lecture files and print them out. All the announcement about the date of quiz, assignments, test and examinations are published in Google classroom.

14. Assessment scheme

Assessment	Description	Weight (%)
Quizzes	Quizzes will be scheduled per the semester calendar provided to you. Students will take 2 quizzes.	10
Assignments	Students will take one assignments/Report.	10
Mid-term	Midterm exam will be planned as in the Calander	20
Test	The test will be planned as in the Calander	10
Final Exam	The final exam will be designed to cover all lectures	50
Overall		100

Grading policy

Letter	Marks	Grade Points	Level
A+	95 - 100	4.0	Excellent Pass
A	90 - < 95	3.8	Excellent Pass
A-	85 - < 90	3.6	Very Good
B+	80 - < 85	3.4	Very Good
B	75 - < 80	3.2	Good
B-	70 - < 75	3.0	Good
C+	65 - < 70	2.8	Medium
C	60 - < 65	2.6	Medium
C-	55 - < 60	2.4	Pass
D+	52.5 - < 55	2.2	Pass
D	50 - < 52.5	2.0	Pass
F	0 - < 50	1.99	Fail

W: Withdrawal**(50** is the passing grade. A **100** is your goal)**I: Incomplete****15. Student learning outcome:****By the end of the course, the students should be able to:**

- Explain concepts of antimicrobial therapy
- Explain the mechanisms of antimicrobial action
- Ability to recognize the antimicrobial and put them in right groups according to mechanism of action
- Demonstrate knowledge about the mechanisms of antimicrobial resistance.
- Understanding the principles of and carrying out the of antimicrobial sensitivity tests.

16. Course Reading List and References:**1. Course Note:**

Available on Google classroom/Antimicrobial class.

<https://classroom.google.com/c/NzEzMTA1MTc3NDA2>

2. Textbooks:

The textbook for this course is Medical Microbiology and infection lecture notes 5th edition. The textbook will be used as a resource for the lectures of this course. Reading the textbook may help you understand and be able to apply concepts presented in class but, unless specifically noted in class, you will not be tested on topics that are not discussed in the lecture.

3- Online resources:

Google search for any antibiotic's textbooks, lecture topics and videos.

17. The Topics:

WEEKLY SCHEDULE		
Weeks	Topics	Assessments
1	<ul style="list-style-type: none"> Course book introduction and Syllabus Explanation History of antimicrobial therapy 	--
2	Basic of antimicrobial therapy <ul style="list-style-type: none"> Antibiotics and antimicrobial and semi-synthetic antibacterial agents Empirical and directed therapy Mono and combined therapy. 	--
3	Mechanisms of antimicrobial actions and antimicrobial resistance and <ul style="list-style-type: none"> Antibacterial agents/ Inhibitors of cell wall synthesis 	Quiz #1
4	<ul style="list-style-type: none"> Antibacterial agents / Inhibitors of protein synthesis / Antibacterial agents acting on cell membranes. 	--
5	<ul style="list-style-type: none"> Antibacterial agents/ Inhibition of nucleic acid synthesis and function 	--
6	<ul style="list-style-type: none"> Antibacterial agents/ Inhibition of metabolic pathways 	Quiz #2
7	Midterm Exam	
8	Antifungal agents <ul style="list-style-type: none"> Groups of antifungal agents and Mechanisms of antifungal action 	--
9	<ul style="list-style-type: none"> Antibiotic resistance/ mechanisms of antibiotic resistance in bacteria 	--
10	Laboratory aspects of antimicrobial therapy	Assignment/

	<ul style="list-style-type: none"> Methods of Testing the Effectiveness of Antimicrobials 	report
11	Laboratory aspects of antimicrobial therapy Testing the Effectiveness of Antimicrobials by automated Vitek-2 system	--
12	Laboratory aspects of antimicrobial therapy <ul style="list-style-type: none"> Testing the Effectiveness of Antimicrobials by automated BD-Phoenix system 	Test
13	Antiviral agents <ul style="list-style-type: none"> Types of antiviral drugs 	
14	Anti parasitic agents <ul style="list-style-type: none"> Anti protozoans and Anti-helminths 	Revision week
15	Final Exam (1st & 2nd trials)	
16		
17		
18		
19		
20		

18. Examinations: Example of questions**1. Definition:**

In this type of exam a scientific word will be provided, and then students will describe it in a short text.

2. Blank

In this type of exam a short sentence with missed word(s) about a specific subject will be provided, then students will fill the blank with appropriate word (s).

3. True or false type of exams:

In this type of exam a short sentence about a specific subject will be provided, and then students will comment on the trueness or falseness of this particular sentence.

4. Multiple choices:

In this type of exam there will be a number of phrases next or below a statement, students will match the correct phrase.

Rules and instructions to be followed by students for exams (optional)

Advising the students on answering technique in order to pass the exams successfully. For example:

- Attend all classes contribute during the lessons, do all assignment on time and submit on time.

- Work both independently and in groups of your study of peers, who can help you understanding the course material.
- Pay a full attention in the class when your instructor explains the lesson, if you understand 70% directly from the instructor, then the 30% will be just practice exercises.
- Understanding more than memorizing will help you a lot in passing exams.
- Please ask questions at any time about anything you do not understand. You can ask during the class, in tutorials, office hours and by email.
- Read the questions twice
- Think carefully before answering
- Plan the answer on a separate paper.

19. Extra notes:

Teaching is a skill that everyone cannot perform it, because the professional future of individuals is responsibly shaped in teaching process. Good teachers should be in a tight scientific integration with the students, who are going to learn a particular field of science. Moreover, teachers must create a scientific atmosphere in the class and make knowledge smoothly pass to the student's mind. When I teach, I feel I am an actor and the students are audience, so I sometimes turn the scientific subject to something social just to make the students smile. I think this strategy makes the students enjoy the lesson and prevents them being bored. My advice for students is that you must always believe that the teachers care about your future.

20. Peer review

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).