



# Course Book

<b>1. Course name</b>	Antibiotics
<b>2. Lecturer in charge</b>	Assist. Prof. Dr. Karzan Rafiq Sidiq, PhD
<b>3. Department/ College</b>	Medical Laboratory Science/ Science
<b>4. Contact</b>	e-mail: Karzan.sidiq@chu.edu.iq Tel: (optional)
<b>5. Time (in hours) per week</b>	Theory: 2 hours
<b>6. Office hours</b>	Sunday to Wednesday (10:00- 12:00)
<b>7. Course code</b>	MLS7523
<b>8. Teacher's academic profile</b>	<a href="https://dqa.chu.edu.iq/dqa/profile/karzan.sidiq@chu.edu.iq/">https://dqa.chu.edu.iq/dqa/profile/karzan.sidiq@chu.edu.iq/</a>
<b>9. Keywords</b>	Antibiotics, Antibacteria, Antifungi, Antivirus, Antiparasite, Drug
<b>10. Course overview:</b>	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.
<b>11. Course objective:</b>	<ul style="list-style-type: none"> <li>• This course is designed to teach the students a comprehensive overview of antimicrobial agents.</li> <li>• To create a scientific background at the students about basics of antimicrobial therapy, mechanisms of antimicrobial action, groups of antimicrobials and mechanisms of resistance.</li> <li>• Explain methods of testing antibiotics against clinical bacterial isolates.</li> </ul>
 <b>Attendance Policy</b>	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.
 <b>Make-up Policy</b>	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**

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

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

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

**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.

