



<b>Paramedical Program</b>	
<b>Specialization</b>	<b>Medical Laboratories</b>
<b>Course Number</b>	<b>21107132</b>
<b>Course Title</b>	<b>Microbiology (2)</b>
<b>Credit Hours</b>	<b>(3)</b>
<b>Theoretical Hours</b>	<b>(3)</b>
<b>Practical Hours</b>	<b>(0)</b>



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### **Brief Course Description:**

The course deals with the Principles of disease and epidemiology and the Mechanism of Pathogenicity and it also deals with the management of the collection, Transportation Preservation and Disposal of samples and how the results are reported and recorded. it also introduces the students to Pathogenic Bacteria , Antimicrobial drugs, Nosocomial infections, Nosocomial infections and the Viral Infections.

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### **Course Objectives:**

Upon the completion of the course, the student will be able to:

1. Principles of disease and epidemiology.
2. Mechanism of Pathogenicity.
3. How to do the collection, Preservation and Transportation of Samples.
4. Know Antimicrobial drugs.
5. To differentiate Pathogenic Bacteria.
6. Preparation and Staining.
7. The types of infections.
8. Types of Viral Infections.



**Detailed Course Description:**

Time Needed	Unit Content	Unit Name	Unit Number
1.	<b>Introduction to medical Microbiology</b>	<ul style="list-style-type: none"> <li>▪ Principles of disease and epidemiology.</li> <li>▪ Pathology.</li> <li>▪ Infection.</li> <li>▪ Disease.</li> <li>▪ Normal flora.</li> <li>▪ Causes of disease.</li> <li>▪ Spread of infection.</li> <li>▪ Kinds of diseases.</li> <li>▪ Epidemiological definitions.</li> <li>▪ Mechanism of Pathogenicity.</li> <li>▪ Portals of entry and exit.</li> <li>▪ Pathogenic properties of bacteria.</li> </ul>	
2.	<b>Microbiology</b>	<ul style="list-style-type: none"> <li>▪ Specimens:</li> <li>▪ Collection.</li> <li>▪ Transportation.</li> <li>▪ Preservation.</li> <li>▪ Reporting and recording.</li> <li>▪ Disposal.</li> </ul>	
3.	<b>Pathogenic Bacteria</b>	<ul style="list-style-type: none"> <li>▪ Gram positive bacteria</li> <li>▪ Gram positive cocci “staph, strept”.</li> <li>▪ Gram positive bacilli “bacillus, clostridium”.</li> <li>▪ Gram positive listeria, Corynebacterium Diphtheria.</li> <li>▪ Gram negative bacteria</li> <li>▪ Gram negative cocci – neisseria.</li> <li>▪ Gram negative bacilli: Eicoli, klebsiella, Citrobacter, Entero, Shigella, Vibrio. Cholera, Pseudomonas.</li> <li>▪ Gram negative coccobacilli:</li> <li>▪ Haemophilus.</li> </ul>	

		<ul style="list-style-type: none"> <li>▪ Brucella.</li> <li>▪ Bordetella.</li> <li>▪ Spiral bacteria: treponema.</li> <li>▪ Mycobacteria: Mycobacterium tuberculosis.</li> <li>▪ Mycoplasma.</li> <li>▪ Chlamydia.</li> </ul>	
4.	<b>Antimicrobial drugs</b>	<ul style="list-style-type: none"> <li>▪ Criteria of antimicrobial drugs.</li> <li>▪ Action of antimicrobial drugs.</li> <li>▪ Tests of microbial susceptibility to chemotherapeutic agents.</li> <li>▪ Drug resource.</li> </ul>	
5.	<b>Nosocomial Infections</b>	<ul style="list-style-type: none"> <li>▪ Definition.</li> <li>▪ Most common micro-organisms.</li> <li>▪ Predisposing factors.</li> <li>▪ Medical device born disease.</li> </ul>	
6.	<b>Viruses</b>	<ul style="list-style-type: none"> <li>▪ Types Of Viral Infections:</li> <li>▪ Latent viral infection.</li> <li>▪ Acute viral infection.</li> <li>▪ Chronic.</li> <li>▪ Oncoviruses.</li> <li>▪ Viral Disases</li> <li>▪ Measles.</li> <li>▪ Rubella.</li> <li>▪ Cytomegalo virus.</li> <li>▪ Rabies Viruses.</li> <li>▪ Influenza viruses.</li> <li>▪ Herpes Viruses.</li> <li>▪ HIV "AIDS".</li> <li>▪ Hepatitis "viruses".</li> <li>▪ Mumps.</li> <li>▪ Adeno virus.</li> </ul>	





### Evaluation Strategies:

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Final Exam	50%	--/--/----
Homework and Projects Discussions and lecture Presentations		10%	--/--/----

### Teaching Methodology:

Lectures. Group discussion. Videos. Live patterns & samples. Practical applications. Field Visits (Industries).



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## Text Books & References:

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### References:

1. Microbiology Richard Harvey, Pamela, Champe Bruce D. Fisher 2007 PP438
2. Burton's Microbiology Paul Engel Kirk, Gwendolyn Buroon 2007 390PP.
3. 3-Microbiology, Geraral Tortora, Berdell Funke Christin Case 1000PP. 18JD 2007.
4. 4-Medical Microbiology and Immunology Warren Levinson. 660PP. 2006
5. Microbiology Prescott Harley Kline Sixth edition 2005 Published by MC Graw. Hill Martin J. Lang.
6. Microbiology PRESCOTT HARLEY KLINE Sixth edition 2005
7. Published by MC Graw. Hill Martin J. Lang.
8. Medical Microbiology .Geo. F Brooks Janet s. Butel Stephen A. Morse, 20th edition 2004
9. Microbiology for the Health Sciences Gwendolyn R.W Burton Paul G.Englkirk. .2004 Lippincott Williams & Wilkins.
10. Medical Microbiology Cedric Mims, Hazel M Dockrem Richard V Goering. Ivan Ritt, Derek. Wakein, Mark Zuckerman 660PP 15JD.
11. Medical Microbiology. David Greenwood Richard. Slack, John Peutherer – 2002 708 PP.
12. MEDICAL. MICROBIOLOGY ODY. 16f, Churchill Living, Greenwood, 2002 Microbiology and Infection Ingles 1998 PP 256.
13. Medical Microbiology, Tom Elliott Mark Hastings, Ulrich esselberger, 350 P.P 1997.
14. Microbiology for the health sciences, by Burton & Engel Kirk, 6th edd. Lippincott Williams & Wilkins.
15. Microbiology – An Introduction: Torkora, hunke, case, Benjamin Cummings 8th. edd (ISBN/0 – 8053-7613-5).
16. Jawetz, Melnick, and Adelbergis, Medical Microbiology. Geo. F. Brooks, Janet. Butel. Stephen 21st edd, Lang medical books.
17. Internet microbiology teaching resources.

