



Paramedical Program	
Specialization	Medical Laboratories
Course Number	21107133
Course Title	Microbiology/ Practical
Credit Hours	(2)
Theoretical Hours	(0)
Practical Hours	(6)



Brief Course Description:

The course deals with the laboratory safety measures, microscopy, preparation, staining and cultivation of bacteria .Concentration is put on the identification of bacteria and the effects of physical and chemical agents on bacteria. Moreover it deals with, fungal microscopy and culture and parasite identification.

Course Objectives:

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

1. Personal safety protection.
2. How to deal with Laboratory waste disposal
3. Collection of Samples, Preservation and Transportation of Samples .
4. Culture& Identification
5. Preparing of Specimens
6. Reporting and Recording
7. Preparations and Staining
8. Effects of physical and chemical agents on bacteria
9. (Heat. Radiation Ultrasound Salting Filtration Disinfectants Antiseptics and Preservatives. Cooling).
10. Cultivation of Bacteria
11. Parasite identification



Detailed Course Description:

Time Needed	Unit Content	Unit Name	Unit Number
1.	Laboratory Safety	<ul style="list-style-type: none"> ▪ Procedures. ▪ Personal protection requirements. ▪ Biosafety levels. ▪ Safety equipments. ▪ Laboratory waste disposal. 	
2.	Microscopy	<ul style="list-style-type: none"> ▪ Use of different types of microscopes. ▪ Instruments “Components of microscope”. ▪ Collection of Samples Preservation and Transportation of Samples. ▪ Culture & Identification. ▪ Preparing of Specimens. ▪ Reporting and Recording. 	
3.	Preparation and Staining	<ul style="list-style-type: none"> ▪ Wet preparation. ▪ Gram stain. ▪ Acid Fast stain. ▪ Albert Stain. 	
4.	Cultivation of Bacteria	<ul style="list-style-type: none"> ▪ Cultivation of Bacteria ▪ Media Preparation. ▪ Loops. ▪ Cultivation of normal flora. ▪ Bunsen burner. ▪ Centrifuge. ▪ Automatic Dispenser. ▪ Identification of Bacteria: ▪ Shape and Appearance. ▪ Colony Count. ▪ Differentiation of Colony. 	



5.	Application of physical and chemical agents on bacteria	<ul style="list-style-type: none"> ▪ Heat. ▪ Radiation. ▪ Ultrasound. ▪ Salting ▪ Filtration. ▪ Disinfectants. ▪ Antiseptics and Preservatives. ▪ Cooling. 	
6.	Fungi Microscopy	<ul style="list-style-type: none"> ▪ Fungi Microscopy. ▪ Culture. 	

Evaluation Strategies:

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



Teaching Methodology:

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

Text Books & References:

References:

1. Microbiology Richard Harvey, Pamela, Champe Bruce D. Fisher 2007 PP438
2. Burton's Microbiology Paul Engel Kirk, Gwendolyn Buroon 2007 390PP.
3. Microbiology, Geraral Tortora, Berdell Funke Christin Case 1000PP. 18JD 2007.
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.

