Kingdom of Saudi Arabia
Taibah University – Madinah
College of Applied Medical Sciences
Department of Clinical Laboratory Sciences

A- Course Title, Code, Academic Year:

General Medical Microbiology (MLT-222) 1437-1438H

B- Course Information:

Course Code	Course Title	Credit Units			Study Level	Pre-requisites
		Total	Theory	Practical		
MLT 222	General Medical Microbiology	3	2	1	4th	-
Course Coordinator		Extension		Email Address		
Dr. Hassan Hemeq				hhamag@taibahu.edu.sa		

C- Course Description:

This course aims to provide the students with adequate theoretical knowledge and laboratory skills that needed to the laboratory diagnosis of pathogenic microorganisms and infection preventative methods. The students will have the skills of culture media preparation, isolation of bacteria from different specimens. Making different stains and biochemical tests helping identification of bacteria will be described. The student will be able to carry out sensitivity test and interpret the results. Explanation concepts of diagnosis and cultivation of viruses will be offered.

D- Course Objectives:

What is the main purpose for this course?

1- Describe the main and common properties of microorganisms (Bacteria, fungi and Viruses) with highlighting on the differences between them.
2- List the bacterial structure, morphology, growth and metabolism.
3- Recall some of medically important bacterial strains, mode of action of antibiotics, in addition to host pathogen relationships.
4- Recall his knowledge about fungal morphology, structure, nutrition and sporulation.
5- Describe the clinical classification of fungi and antifungal drugs.
6- State virus morphology, structure, replication, and cultivation.
7- Predict viral infection treatment, in addition to acquiring basic microbial genetics knowledge.
8- Understand the basics of parasitology

E- THEORY TOPICS:		
Week	Theory Topic	Contact Hours
1	Introduction - Common properties of microorganisms (bacteria, fungi and viruses)	2
2	Morphology and structure of bacterial cells - Bacterial cell wall	2
3	Bacterial cell wall - Sporulation	2
4	Bacterial reproduction - Bacterial growth and metabolism	2
5	Energy production and respiration – Medically important bacteria	2
6	Medically important bacteria	2
7	Morphology of fungal cells	2
8	Structure of fungal cells - Fungal reproduction	2
9	Medically important fungi	2
10	Introduction to Parasitology	2
11	Cultivation of viruses - Replication – Medically important viruses	2
12	Antimicrobial chemotherapy	2
13	Normal flora - Host pathogen relationship	2
14	Introduction to Microbial Genetics	2
15	Revision	2

F- PRACTICAL SESSIONS:		
Week	Practical Session	Contact Hours
1	Biosafety in clinical lab	2
2	Sterilization and disinfection	2
3	Microscopy – Culture media	2
4	Culture media – Pure culture techniques	2
5	Conventional bacterial identification methods part 1	2
6	Motility test – simple stain	2
7	Gram stain	2
8	Acid fast stain	2
9	Spore stain - capsule stain	2
10	Vacation of second term	2
11	Conventional bacterial identification methods part 2	2

12	Antimicrobial susceptibility testing	2
13	Mycology	2
14	Methods of cultivation of viruses	2
15	Revision	2

G- ASSESSMENT TASKS:

#	Type of assessment task	Week	Total Grades
1	Continuous assessment	Weeks 1-13	10%
2	Midterm examination (written)	Week 8	15%
3	Assignment submission	Week 10	5%
4	Final practical exam	Week 16	30%
5	Final written examination	Week 17-18	40%

H- LEARNING RESOURCES:

1- Required textbook:

1- Strohl, W.A; Rouse, H.; Fisher, B.D. (2001). Lippincott`s Illustrated Reviews: Microbiology. Lippincott Williams and Wilkins.
2- Brooks, G.F.; Butel, J.S., and Morse, S.A. (2012). Jawetz, Melnick and Adelberg's Medical Microbiology. 26th Edition. McGraw-Hill Education.

2- Essential references:

1- Cheesbrough, M. (2005). District Laboratory Practice in Tropical Countries, Part 1 and 2 Cambridge University Press; Second Edition.
2- Kayser, F. H.; Bienz, K. A.; Eckert, J.; and Zinkernagel R. M. (2005). Medical Microbiology. Georg Thieme Verlag, Stuttgart, Germany
3- Murray P. R., Rosenthal K. S., and Pfaller M. A. (2012). Medical Microbiology. 7th edition. Elsevier Saunders

Notes:

- Assignments topics and requirements shall be announced by the end of Week-1, the deadline for submission is 12pm Thursday of Week-10 (each semester).
- Assignments and written assessment tasks must be verified against plagiarism, the maximum acceptable percentage is determined by the department (according to each level).
- Continuous assessments may include quizzes, internet searches, home-works, exercises, class activity, scratch cards, presentations, group work, etc.
- Practical exams may contain hands-on experiments, laboratory work, simulations, or demonstrations.
- Written exams will include multiple-choice questions (MCQ), short essay questions, and long essay questions.