**CLS 212**

**Department       :** **Clinical Laboratory Sciences**

**Course Number: CLS 212**

**Course Title      : Medical Microbiology**

**Credit Hours     : 3 + 1 = 4**

**Course Description:**

This is a general medical microbiology course intended for students outside the department of Clinical Laboratory Sciences. The structure of the course is based on presenting the fundamentals of microbiology to include structures, morphology and classification of bacteria, viruses, fungi and parasites. The students will be introduced to the pathogenesis of the various infectious agents. The course will also cover some topics related to community health, including the modes and sources of infections as well as prevention of these infections.

**CLS 212: Lectures Outline**

**Weeks                                               Subjects**

**1.**                                 General introduction

                                    Historical Background & classification of microorganisms

**2**.                                Introduction to Viruses

              Structure and morphology of viruses

                                    Classification / Replication  / Pathogenicity

**3.**                             Introduction to Fungi

                                    Structure and morphology of fungi

                                    Classification / Fungal diseases

**4.**                                  Introduction to Parasites

                                     Classification /General characteristics of protozoa

                                     Medically important protozoa

                                    General characteristics of helminths/Medically important

                                    helminths

**5.**                                 Introduction to Bacteria

                                    Classification / Morphology

                                    Bacterial Structures / Bacterial replication

**6.**                                 Bacterial growth / Growth curve

                                    Factors affecting growth

**7.**                                 Antimicrobial agents

**8.**                                 Microbial control / Principles

                                    Physical and chemical methods

**9.**                             Microbial control – Chemical agents

                                    Hospital acquired infections

**10**.                           Pathogenicity of infectious diseases

                                    Normal microbial flora

**11.**                           Upper respiratory tract infections

**12.**                               Lower respiratory tract infections

**13.**                               Wound and skin infections

**14.**                               Sexually transmitted diseases

**15.**                               Food borne diseases, Water borne diseases

**CLS 212:   Laboratory Schedule:**

**Weeks                                               Subjects**

1.                                  Introduction to Microbiology laboratory

                                       Techniques and safety rules

 2.                                    Introduction to light Microscopy

                                       Types of light microscope

 3.                                   Examination of stained smear and wet mounts

 4.                                   Microscopic examination of eukaryotic microorganisms

 5.                                   Staining of bacterial cells and bacterial

                                       structures ( simple and differential  stains )

 6.                                   Bacterial culture media

                                       Techniques of cultivation

 7.                                   Microbial flora of skin and oral cavity

                                       Environmental sampling

 8.                                   Antimicrobial Agents - Methods of sensitivity testing

 9.                                   Microbial count : viable and total counts

 10.                                 Factors affecting microbial growth

 11.                                  Physical and chemical methods used in microbial

                                       control

 12.                                  **Revision**

 13.                              **FINAL PRACTICAL EXAMINATION**

**Assessments:**

 First Mid Term Examination:           15

Second Mid Term Examination:      15

Mid Term Practical Examination:    10

Final Practical Examination:            20

Final Theoretical Examination:        40

**References:**

1. Cano J. Raoul and Calome J.S., Microbiology, West Publishing Company, USA, Latest Edition

1. Eugene W. Nester et al, Microbiology- A Human Perspective, Mc Graw Hill, USA,Latest Edition

      3. Tortora, G. J., B. R. Funke, and C. L. Case., Microbiology, An Introduction