

**Module (Course Syllabus) Catalogue**

**2023-2024**

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| **College/ Institute** | **Koya Technical Institutes** | |
| **Department** | **Nursing** | |
| **Module Name** | **Medical Microbiology** | |
| **Module Code** | **MEM** | |
| **Semester** | **First** | |
| **Credits** | **6** | |
| **Module type** | **Prerequisite Core Assist.**  \* | |
| **Weekly hours** |  |  |
| **Weekly hours (Theory)** | **( 2 )hr Class** | **( )hr Workload** |
| **Weekly hours (Practical)** | **( 3 )hr Class** | **( )hr Workload** |
| **Lecturer (Theory)** | **Saman Rafeeq Abdullah** | |
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| **Lecturer (Practical)** |  | |
| **E-Mail & Mobile NO.** |  | |

**Course Book**

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| **Course Description** | In this course, students learn to recognize Microbiology branches especially the bacteria cell, types of bacteria and bacterial growth, also learn types of sterilization, We make explain and discuss virology, mycology and parasitology with example and explain. | | |
| **Course objectives** | Describe the key aspects of Microbiology in general.  Recognise different branch of Microbiology.  Know component of each branch. | | |
| **Student's obligation** | Read outline of it  Prepare seminar and discuss on some topic in Microbiology during years of study.  All students have to be ready in the class through out all the year. | | |
| **Required Learning Materials** | White board, data show , color magic white board , video tools | | |
| **Assessment scheme** | ‌16% Mid Term (Theory and practical)  4% Quiz  40% Assignment (report, paper, homework, seminar..)  25% final practical  15% final theory | | |
| **Specific learning outcome:** | 1- Identification types of microorganisms.  2-Knowledge variety causative agent.  3-Bacterial, Virus and Parasite disease.  4- differentiate between bacteria, virus, parasite  5-Mode of transmissions and life cycle.  6- How our immunity work against these antigens | | |
| **Course References‌:** | **1-Micobiology, Richard Harvey, 3rd edition.**  **2-Microbiology, Robert W. Bauman.**  **3-Teaxt book of diagnostic Microbiology, Connie R. Mahon, 5th edition.** | | |
| **Course topics (Theory)** | | **Week** | **Learning Outcome** |
| Introduction in Microbiology | | 1 | Knowing Microbiology |
| Cells, different types and components | | 2 | Prokaryotic and Eukaryotic |
| Bacterial shapes and types according staining | | 3 | Gram positive and negative , acid fast staining |
| Bacterial Nutrition requirement , Environmental factors effecting bacteria cells | | 4 | Essential nutrients , Oxygen , PH, Temperature, |
| Bacterial Growth Curve, Types of reproduction | | 5 | Important phases of life cycle in bacteria |
| Important Pathogenic bacteria in human | | 6 | Streptococcus,  Salmonella, anthrax’s, clostri  dium, helicobacter, pseudomonas |
| Parasites and types, host cell , parasite phases | | 7 | Ectoparasite, endoparasite, trophozoite, cyst. |
| Entamoeba, giardia, malaria, **Leishmania** | | 8 | Disease and lif cycle |
| Viruses, Viroid’s, Prions | | 9 | Definition structures, types |
| Viruses disease | | 10 | Poliomyelitis, measles, herpes, hepatitis and HIV |
| Immunity system components and function | | 11 |  |
| Types of cells in Immunity system | | 12 | T cells , B cells, mast cells, dendric cells , macrophages |
| **Practical Topics** | | **Week** | **Learning Outcome** |
| Microbiology lab equipment and safety | | 1 | How protect your self |
| Sterilization | | 2 | Types of sterilization |
| Microscope | | 3 | Parts of microscope how to used |
| Types of culture media preparation | | 4 | Able to prepare a culture |
| Collect samples from air , water & soil | | 5 | Culturing different type of bacteria |
| Bacterial smear preparation & simple stain | | 6 | Learn smear preparation and use simple stain to recognize bacterial shape |
| Gram stain and acid fast stain | | 7 | Used different stain for identification of bacteria |
| Motility test of bacteria | | 8 | Flagella in semi liquid media |
| Oxidative, fermentation and indol test | | 9 | Knowing biochemical test |
| Parasitology most important species | | 10 | Protozoa, and other types of paracite |
| Water and soil examination by microscope | | 11 | Seen variety parasitic and non-parasitic microorganism |
| Immunology , Ag and Ab reaction forming agglutination | | 12 | Agglutination test |
| **Questions Example Design10**  **Q1/Define the following**  **Q2/Answer by (True) or (false)**  **Q3/Draw the following**  **Q4/Explain the following, mention the reason** | | | |
| **Extra notes:** | | | |
| **External Evaluator** | | | |