**Course Outcome**

**B.Voc Medical Lab & Molecular Diagnostic Technology**

**Semester I**

**MDT-VC-1016: Basic Anatomy and Physiology**

**CO 1**: This paper will help the students to understand the basics and fundamentals of cells, tissues, different systems of the body including GI system, Respiratory system, cardiovascular system, urinary system, reproductive system endocrine system etc. Further the students have to learn about the medical terminology used in human anatomy, functions of different systems of human.

**MDT-VC-1026: Biochemistry-I**

**CO 2:** This paper will help the students to identify various laboratory glassware, plastic ware and instruments along with care and maintenance of equipments and apparatus used in the laboratory. The students have understood the phlebotomist’s duties towards identification of patient and taking their consents before withdrawing blood specimens. In addition to that preparing appropriate site for blood samples.

**MDT-VC-1036: Pathology-I**

**CO 3:** In this paper the students have to know about various blood collection equipments, different types of blood sample collections, need to know about color coded vacutainers, anticoagulants, further the students has to know basics about blood and other samples with suitable collections and various tests. The students have to learn about various laboratory hazards, safety and first-aid and personal hygiene.

**Semester-II**

**MDT-VC-2016: Microbiology-I**

**CO 4:** In this paper the student will have basic knowledge about various microorganisms like bacteria and its growth & nutrition, virus, parasites and identify bacteria, preparation of culture medium to grow bacteria. Further the students will be able to perform various sterilization methods; they will understand hospital born disease and its prevention and control.

**MDT-VC-2026: Biochemistry -II**

**CO 5:** In this paper the students will be able to understand basics about biochemistry of carbohydrates, lipids, vitamins, enzymes. Further they will be able to learn code of conduct for medical laboratory. The students will have to perform various blood and urine tests.

**MDT-VC-2036: Pathology-II**

**CO 6:** In this paper the students will be able to understand basics about the production of various blood cells, haemostasis and coagulation and related tests, slide preparation for blood and bone marrow for normal and abnormal cells. Further the students have to know various healthcare waste, safe handling and management of waste.

**Semester-III**

**MDT-VC-3016: Microbiology-II**

**CO 7:** In this paper the students will be able to understand about various bacteria & fungus and diseases caused by it and lab diagnosis. Further the students will learn about various staining techniques for bacterial cell wall, bacterial capsule, fungal staining etc.

**MDT-VC-3026: Biochemistry -III**

**CO 8:** In this paper the students will understand about the basics of Acid base balance, food and nutrition and its importance along with lipids, amino acids and protein metabolism.

**MDT-VC-3036: Pathology-III**

**CO 9:** In this paper the students will know about haemoglobin and various types of anaemia, different types of blood cell counts, further they will learn about basics of histotechniques and body fluid analysis.

**Semester-IV**

**MDT-VC-4016: Microbiology-III**

**CO 10:** In this paper the students will learn about various parasites and its types and the disease caused and various virus its transmission lab diagnosis etc. further the students will be able to identify different blood and stool parasites.

**MDT-VC-4026: Biochemistry -IV**

**CO 11:** In this paper the students will learn about hormone and its mechanism, different enzymes and elevated levels in various disease conditions, further the students will know about the functions of liver, kidney, heart, thyroid and tests to evaluate these organs.

**MDT-VC-4036: Pathology-IV**

**CO 12:** In this paper the students will understand about blood groups, blood transfusion, different methods to identify blood groups, matching donor’s blood with patient’s blood, various screening procedures for donors. Further the students will be able to learn about cytotechniques.

**Semester-V**

**MDT-VE-5016: Microbiology-IV**

**CO 13:** In this paper the students will understand about body defense system and types, vaccines and immunization, infection that can be transmitted from hospital, prevention and control of hospital infection. Further the students will have idea about various serological tests.

**MDT-VE-5026: Biochemistry -V**

**CO 14:** In this paper the students will learn about water and mineral metabolism and associated diseases related to it, different inorganic ions and importance in our body, formation of kidney stone, concept of acid and base with related disease with acid base balance disturbances.

**MDT-VE-5036: Pathology-V**

**CO 15:** In this paper the students will learn about the tissue specimen, taking specimen for grossing, fix it with proper fixative, processing the tissue specimen to place the fixed tissue in the paraffin, taking tissue specimen for embedding, proper sectioning of the tissue and stain it with various staining solutions.

**Semester –VI**

**MDT-VE-6016: Microbiology-V**

**CO 16:** In this paper the students will learn in details about various medically important bacteria, basics of molecular biology and different types of microscope including electron microscope.

**MDT-VE-6026: Biochemistry -VI**

**CO 17:** In this paper the students will learn about basics of DNA & RNA, replication of DNA, genetic engineering, Metabolic disorders of amino acids, elevation of enzymes in disease condition, isoenzymes, techniques used in biochemistry, further the students will understand the basics of biostatistics.

**MDT-VE-6036: Pathology-VI**

**CO 18:** In this paper the students will learn in details about cytopathology and various branches, different types of specimen used in cytopathology lab, different normal and abnormal cells, Fine needle aspiration cytology along with different fixation and staining.