### Name of Programme: B.Voc. MLT

| Programme Outcome | PO1: Apply knowledge and technical skills associated with medical laboratory technology for delivering quality clinical investigations support.  
|                   | PO2: Perform routine clinical laboratory procedures within acceptable quality control parameters in Hematology, biochemistry, immunohematology and microbiology.  
|                   | PO3: Demonstrate technical skills, social behaviour and professional awareness for functioning effectively as a laboratory technician.  
|                   | PO4: Apply problem solving techniques in identification and correction of pre analytical, post analytical & analytical variables.  
|                   | PO5: Operate and maintain laboratory equipment’s utilizing appropriate quality control and safety procedures.  
|                   | PO6: Recognize the impact of laboratory tests in a global and environmental context.  
|                   | PO7: Communicate effectively by oral, written and graphical means.  
|                   | PO8: Function as a leader / team member in diverse professional and industrial research areas.  
|                   | PO9: Apply the fundamentals of research process to complete and present research studies that enrich the field of physical therapy.  
|                   | PO10: Function in an ethical and professional manner without bias against any ethnicity, race, religion, caste or gender.  
|                   | PO11: Practice professional and ethical responsibilities with high degree of credibility, integrity and social concern |

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| Communication Skills | CO1: Students will be able to understand the research methods associated with the study of human communication, and apply at least one of those approaches to the analysis and evaluation of human communication.  
|                   | CO2: Students will be able to find, use, and evaluate primary academic writing associated with the communication discipline.  
|                   | CO3: Students will be able to understand and apply knowledge of human communication and language processes as they occur across various contexts |
| Fundamentals of Information Technology | At the end of this course, student should be able to  
|                                           | CO1: Understand basic concepts and terminology of information technology.  
|                                           | CO2: Have a basic understanding of personal computers and their operations.  
|                                           | CO3: Be able to identify issues related to information security. |
| Basics Of Human Anatomy | CO1: Basic understanding of organization of body cells, tissues, organs, organ systems, and glands in human body  
|                          | CO2: Define the main structures composing human body.  
<p>|                          | CO3: Identify and locate structures of the body. |</p>
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| Introduction To Laboratory Equipments | CO1- To gain broad understanding of care of laboratory glassware, equipment and instrument  
CO2- To gain broad understanding of setting up, calibrating, operating, cleaning, maintaining, troubleshooting of laboratory equipment used in quantitative or qualitative analysis  
CO3- To Calibrate and Validate the Clinical Laboratory instruments and glasswares  
CO4- To understand Microscopy, working principle, maintenance and applications of various types of microscopes |
| Introduction To Hematology         | CO-To gain understanding of blood and components of blood  
To gain knowledge of hematological Diseases and hematological Investigations.                                                                 |
| Soft Skills and Personality Development | On completion of the course, student will be able to–  
CO1-Effectively communicate through verbal/oral communication and improve the listening Skills  
CO2-Write precise briefs or reports and technical documents  
CO3-Actively participate in group discussion / meetings / interviews and prepare & deliver presentations  
CO4-Become more effective individual through goal/target setting, self motivation and practicing creative thinking.  
CO5-Function effectively in multi-disciplinary and heterogeneous teams through the knowledge of team work, Inter-personal relationships, conflict management and leadership quality. |
| Introduction To Medical Technology Healthcare Systems | CO1- To Understand about Healthcare Service Providers  
CO2- To develop broad understanding of the Role of MLT  
CO3- To Understand Patient’s Rights &Responsibilities |
| Basics Of Physiology               | CO1- Basic understanding of physiology of different organ system of body  
CO2-Understand the interrelationships and interactions among various organs and systems for maintaining homeostasis.  
CO3-Assess the relative contribution of each organ systems towards the maintenance of constant internal environment  
CO4-Understand physiological basis of pathogenesis and treatment of diseases and disorders. |
| Elementary Knowledge Of Biochemistry | CO1- To gain elementary knowledge of Biochemistry  
CO2- Know the responsibility of health care personals and hazards faced in the clinical laboratory.  
CO3- Describe the different types, use, care and maintenance of the laboratory apparatus and instruments.  
CO4- Explain chemistry and metabolism of carbohydrates, proteins, lipids, nucleic acids, enzymes and vitamins. |
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| Analytical Laboratory Testing Process-I | CO1- To gain broad understanding of chemicals/reagents useful in sample analysis.  
CO2- To gain broad knowledge of Routine Hematological Tests and Urine tests, Stool tests, Semen tests and sputum tests |
| Value Education and Human Rights | CO1: Understand the very fact human rights system.  
CO2: Understand the gender equity.  
CO3: Understand the human rights advocacy.  
CO4: Understand the concepts of women's status in India  
CO5: To explain about, what is environmental studies .  
CO6: Know the values of natural resources. |
| Safe Laboratory Practices | CO1-To develop understanding and precautions to ensure Patient’s Safety  
CO2- Describe basics of first aid  
CO3- To develop understanding and precautions to ensure self-safety.  
CO4-To gain understanding of importance of proper and safe disposal of biomedical waste & treatment  
CO5-To gain Elementary knowledge on Good Clinical Laboratory Practices |
| Introduction To Parasitology And Medical Entomology | CO1- To Understand the role of parasites and vectors in disease transmission, and the most appropriate control strategies.  
CO2-Distinguish the individual parasitic infectious diseases.  
CO3-Recognize the protozoan infectious diseases.  
CO4-Explain the methods used for diagnosis and treatment of protozoan infectious diseases.  
CO5-Recognize the protozoan infectious agents of individual flora regions of human body.  
CO6-Distinguish the individual helminthic infectious diseases.  
CO7-Recognize the helminths agents.  
CO8-explain the methods used for diagnosis and treatment of helminths infectious diseases.  
CO9-Recognize the trematode agents.  
CO10-Explain the methods used for diagnosis and treatment of trematodal infectious diseases.  
CO11-Recognize the nematode agents. |
| Fundamentals Of Microbiology | CO1- To give an overview of various aspects of General microbiology . Describe the structure, classification, growth and identification of various microorganisms including bacteria, fungi, parasite and virus.  
CO2: Describe the various disease producing organisms that includes bacteria, |
### Bacteriology, Mycology and Virology

- **CO1**: To learn the techniques of collection of samples, their processing and the identification of the various pathogens, like bacteria, parasites, viruses, using different techniques.
- **CO2**: To provide vigorous training in the use of standard safety measures while handling highly infected material.
- **CO3**: To provide basic knowledge of the different diseases caused by various microorganisms is also imparted.

### Environmental Studies

- **CO1**: Understand core concepts and methods from ecological and physical sciences and their application in environmental problem-solving.
- **CO2**: Appreciate key concepts from economic, political, and social analysis as they pertain to the design and evaluation of environmental policies and institutions.
- **CO3**: Appreciate the ethical, cross-cultural, and historical context of environmental issues and the links between human and natural systems.
- **CO4**: Appreciate that one can apply systems concepts and methodologies to analyze and understand interactions between social and environmental processes.
- **CO5**: Reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world.

### Clinical Laboratory Management

- **CO1**: To understand the importance and method of observing and reporting while dealing with patients.
- **CO2**: To understand guidelines for collecting documentation.
- **CO3**: To maintain restful environment.

### Introduction to Histopathology

- **CO1**: Elementary knowledge of specimen collection.
- **CO2**: Elementary knowledge of tissue fixative.
- **CO3**: Elementary knowledge of tissue processing.

### Introduction to Cytopathology

- **CO1**: To collect exfoliative cytology smears, contact smears and perform applications for cytological examination (under supervision) and carry out routine and special training procedure on cytology smears.
- **CO2**: To organize the histopathology laboratory of the above services and provide basic equipment maintenance.
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<td><strong>Critical Thinking and Elementary Statistic</strong></td>
<td>Students will be able to:&lt;br&gt;CO1- Identify a problem &lt;br&gt;CO2- Analyze the elements/facts of a specific situation/problem &lt;br&gt;CO3- Communicate the important elements/issues &lt;br&gt;CO4- Gather relevant situational information &lt;br&gt;CO5- Interpret information effectively relative to the problem &lt;br&gt;CO6- Establish relevant criteria and standards for acceptable solutions</td>
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<td><strong>Introduction To Biochemical Techniques</strong></td>
<td>CO- To get basic knowledge of Spectroscopic, Electrophoretic, Chromatographic and Radio Isotopic Techniques Instructions:</td>
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<td><strong>Introduction To Immunology</strong></td>
<td>CO1- To gain elementary knowledge about Immunology &lt;br&gt;CO2- To understand the basics of Humoral Immunity, Cell Mediated Immunity and Antigen-Antibody Interaction.</td>
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<td><strong>Serology : Introduction &amp; Serological Lab Procedures</strong></td>
<td>CO-To provide basic knowledge of serology, Serological techniques and Serological tests.</td>
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<td><strong>Entrepreneurship Development Programme</strong></td>
<td>CO1-demonstrate a fundamental comprehension of business opportunity evaluation, from the perspective of a prospective investor. Program Outcome &lt;br&gt;CO2-identify the most recognized sources of potential funding and financing for business start-ups and/or expansion. Program Outcome &lt;br&gt;CO3-demonstrate basic computer proficiency, including the use of word processing, presentation, and spreadsheet software packages, as well as a basic facility with the internet and other research tools. Program Outcome &lt;br&gt;CO4-demonstrate extemporaneous speaking skills developed through in-class discussion of text materials, case study analyses, and current entrepreneurship-related issues.</td>
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<td><strong>Sensitization To Blood Banking And Infection Control</strong></td>
<td>CO1- To understand blood transfusion reactions &lt;br&gt;CO2-To understand the importance and methodology of cleanliness, and hygiene environment &lt;br&gt;CO3- To understand the practices to curb infection</td>
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<td><strong>Clinical Biochemistry-II</strong></td>
<td>Student able to – &lt;br&gt;CO1-Understand the Basics of Biochemistry and Chemistry of biomolecules and their significance. &lt;br&gt;CO2- Understand the Protein structure i.e. Primary, Secondary, Tertiary and Quaternary. &lt;br&gt;CO3- Understand the chemistry of hormones.</td>
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<td>CO4</td>
<td>Understand the structure and properties of the enzymes as well as its activity.</td>
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<td>CO5</td>
<td>Understand the process of Lipid, Proteins and Carbohydrate metabolism.</td>
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