

PROGRAM OUTCOME (POs)

Annexure-3I of AC-50/2024

| Course Code | B.Sc. MEDICAL LABORATORY TECHNOLOGY |
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| PO1 | Skilled Lab Technologists - An ability to apply knowledge of healthcare technology (including clinical subjects, investigations/ Procedures, handling instruments) |
| PO2 | Critical Thinker – To apply professional judgment and rational thinking in decision-making |
| PO3 | Problem solver – Correlation of professional knowledge applied to current clinical or healthcare practices. |
| PO4 | Professional ethics – To adopt and apply code of ethics prescribed by professional bodies in professional and social context. Maintain appropriate boundaries with patients and care givers and maintain confidentiality. |
| PO5 | Communication skills – To communicate effectively with the patients, care givers and other healthcare professional for addressing patient related issues and to deliver and information |
| PO6 | Leadership/ Team work - Ability to function on multi-disciplinary teams and take initiative and motivate and help others |
| PO 7 | Holistic development - Development of intellectual mental, Physical, Emotional & Social abilities, so as to be capable of facing the demands & challenges of every day life. |
| PO8 | Lifelong learning - To develop continuous learning attitude in context of research, advances in clinical practices and to inculcate professionalism and evidence based practices |

Course Outcomes (COs)

| Course Code | B.Sc. MEDICAL LABORATORY TECHNOLOGY |
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| SEMESTER I | |
| BMLT 101 L | Human Anatomy Part I |
| CO1 | Define basic technical terminology and language associated with medical anatomy |
| CO2 | Identify and describe the gross anatomy of various tissues and organs in the human body along with Skeletal and Muscular Systems |
| CO3 | Understand and demonstrate the anatomy of Respiratory system, Circulatory system, Digestive system and Excretory system with it's clinical application |
| BMLT 102 L | Human Physiology Part I |
| CO1 | Describe basic physiological principles involved in normal functioning of the human body and their applications in comprehending the pathophysiology of various diseases. |
| CO2 | To understand the basic mechanism operating and regulating different organ systems. |
| CO3 | Ability to identify techniques to evaluate the functioning of organ systems and interpret the results as normal or abnormal. |
| BMLT 103 L | General Biochemistry & Nutrition |
| CO1 | Understand the fundamental principles of biochemistry, including the chemistry and functions of biomolecules such as carbohydrates, proteins, lipids and nucleic acids. |
| CO2 | Gain insights into the principles of bioenergetics and enzymology in human body. |
| CO3 | Understand the basics of collection, handling and processing analysis of blood and urine samples for clinical diagnostics. |
| BMLT 104 L | Introduction to National Health Care System (Multidisciplinary/Interdisciplinary) |
| CO1 | Understand the measures of the health services and high-quality health care |
| CO2 | Gain Basic insight into the main features of Indian health care delivery system and how it compares with the other systems of the world. |
| CO3 | Introduction to Background objectives, action plan, targets, operations, in various National Health Programmes. |
| CO4 | Introduction to the AYUSH System of medicines. |
| BMLT 105 P | Community Engagement and Clinical Visit (Including related practicals to the Parent course) |
| CO1 | Understand the role of health professional in community |
| CO2 | Personality Development |
| AEC 001 L | English and Communication Skills |
| CO1 | Develop ability to read, write and speak better in English language |
| CO2 | Grow personally and professionally to develop confidence in the field of healthcare. |
| AEC 002 L | Environmental Sciences |
| CO1 | Understand and define terminology commonly used in environmental sciences |
| CO2 | Understand the concepts of ecosystems, biodiversity and its conservation |
| CO3 | Understand the relationship between humans and environment |
| CO4 | Discuss the factors affecting the availability of natural resources, their conservation and management. |
| CO5 | Discuss the goals, targets, challenges and global strategies for sustainable development |

| SEMESTER II | |
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| BMLT 106 L | Human Anatomy Part II |
| CO1 | Understand and demonstrate the anatomy of Reproductive system, Endocrine system, Nervous system, Sensory system and Lymphatic system with it's clinical application |
| BMLT 107 L | Human Physiology Part II |
| CO1 | Understand the basic physiological functions of Special senses and Skin,. |
| CO2 | To understand the basic mechanism, operation and regulation of different systems such as Nervous system, Endocrine system, Reproductive system and Excretory system |
| CO3 | Ability to identify techniques to examination of the physiological functioning of sensory and motor systems and interpret the results as normal or abnormal. |
| BMLT 108 L | General Microbiology |
| CO1 | Understanding the Basic principles of Microbiology with General Methods for recovery, identification of pathogens, culture techniques, procedures, antibiotic testing and sterilization techniques. |
| CO2 | Understand the applications of universal safety precautions. |
| CO3 | Adept knowledge about the systemic bacteriology including morphology, species, lab diagnosis, isolation and identification. |
| CO4 | Basic knowledge of pathogenic diseases and their clinical features |
| BMLT 109 L | Basic Pathology & Hematology |
| CO1 | Know the basic concepts in hematology and clinical pathology |
| CO2 | Ability to collect blood and urine sample under guidance |
| CO3 | Ability to perform urine experiments under guidance |
| BMLT 110 L | Introduction to Quality and Patient Safety (Multidisciplinary / Interdisciplinary) |
| CO1 | Understand the basic concepts of Quality in Health Care System and develop skills to implement sustainable quality assurance programs in the health system. |
| CO2 | Understand the basics of emergency care and life support skills. |
| CO3 | Understanding of the concepts for infection prevention and control. |
| CO4 | Knowledge on the principles of on-site disaster management and prevent harm to workers, property, the environment and the general public. |
| CO5 | Ability to apply healthcare quality improvement and patient safety principles, concepts, and methods at the micro, meso and macro system levels. |
| BMLT 111 P | Community Engagement and Clinical Visit (Including related practicals to the Parent course) |
| CO1 | Understand the role of health professional in community |
| CO2 | Personality Development |
| SEC 001 L | Medical Bioethics & IPR |
| CO1 | Ability to recognise and understand ethical concerns in research and healthcare sector. |
| CO2 | Adapt skills to rationally justify decisions by understanding the complexity and multi - dimensionality of medical or clinical ethical concerns. |
| CO3 | Gain awareness about significance of patent, copyright, plagiarism and their applications in legal problems |
| SEC 002 L | Human Rights & Professional Values |
| CO1 | Acquire conceptual clarity and develop respect for norms and values of freedom, equality, fraternity and justice |
| CO2 | Awareness of civil society organizations and movements promoting human rights |
| CO3 | Understand the difference between values of human rights and their duties |

| SEMESTER III | |
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| BMLT 112 L | Fundamental of Biochemistry - I |
| CO1 | Knowledge about basic biochemical metabolism of Carbohydrates, Amino Acids, Iron and Hemoglobin |
| CO2 | Acquaint to Responsibilities of a Medical Laboratory Technologist and work collaboratively in laboratory settings and multidisciplinary teams. |
| CO3 | Gain proficiency in collection, handling and processing analysis of blood, urine, and other body fluids for clinical diagnostics. |
| CO4 | Develop practical skills in various basic biochemical techniques and instrumentations. |
| BMLT 113 L | Fundamental of Microbiology - I |
| CO1 | Introduction to basic laboratory identification and classification of medically significant isolates in mycology and parasitology. |
| CO2 | Theoretical as well as practical training in Immunology and Serology so that they can participate in good patient care and prevention of infectious diseases in the community. |
| CO3 | Acquaintation to Laboratory safety, specimen selection and processing, isolation methods and immunologic diagnosis. |
| BMLT 114 L | Hematology and Clinical Pathology - I |
| CO1 | Examine Urine Samples and Interpret reports |
| CO2 | Understanding of Histopathology techniques and procedure and Blood grouping |
| CO3 | Basics of Universal Safety Precautions and Biological Waste Management |
| GEC 001 L | Pursuit of Inner Self Excellence (POIS) |
| CO1 | Students will become self-dependent, more debility for their study and career related matter ecisive and develop intuitive |
| CO2 | Student's ability to present their ideas will be developed. |
| CO3 | Enhanced communication skills, public speaking & improved Presentation ability. |
| CO4 | Students will be able to explore their inner potential and inner ability to become a successful researcher or technician & hence become more focused. |
| CO5 | Students will observe significant reduction in stress level. |
| CO6 | With the development of personal attributes like Empathy, Compassion, Service, Love & brotherhood, students will serve the society and industry in better way with teamwork and thus grow professionally. |
| GEC 002 L | Organizational Behavior |
| CO1 | Describe and apply motivation theories to team and organizational scenarios in order achieve a team's or an organization's goals and objectives. |
| CO2 | Explain the effect of personality, attitudes, perceptions and attributions on their own and other's behaviors in team and organizational settings. |
| CO3 | Explain types of teams and apply team development, team effectiveness, and group decision making models and techniques. |

| SEMESTER IV | |
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| BMLT 116 L | Fundamental of Biochemistry - II |
| CO1 | Develop practical skills in various techniques and instrumentations used in Biochemistry laboratory. |
| CO2 | Gain proficiency in lab examination of blood, urine, and other body fluids for clinical diagnostics. |
| CO3 | Understand the concept of internal and external quality control in diagnostic Biochemistry laboratory. |
| CO4 | Understand the Basics of Acid Base balance and role of Buffer system. |
| BMLT 117 L | Fundamental of Microbiology - II |
| CO1 | Understand the epidemiology and pathogenesis of mycosis, parasitic and infections |
| CO2 | Theoretical as well as practical training in Systemic Bacteriology and Parasitology so that they can participate in good patient care and prevention of infectious diseases in the community. |
| CO3 | Introduction to basic methods used in the field of diagnostic Microbiology |
| BMLT 118 L | Hematology and Clinical Pathology - II |
| CO1 | Ability to handle Body Fluids specimen, processing and interpretation |
| CO2 | Understanding of Histopathology techniques and procedure and Blood grouping |
| CO3 | Skills to perform the techniques and staining procedure in histopathology and cytology |
| AEC 003 L | Computers and Applications |
| CO1 | Introduction to Hardware and processing of computers and storage devices. |
| CO2 | Adept knowledge of computer software and applications such as Microsoft office (Word, Excel and Power Point) |
| CO3 | Application of operating systems, computer networks & internet in Health Care Settings. |
| AEC 004 L | Good Clinical Laboratory Practice and Research Skills |
| CO1 | Proficiency an adept knowledge of Good Clinical Laboratory Practice (GCLP), ethical principles and guidelines to ensure patient rights and welfare in clinical research. |
| CO2 | Understand the importance of Ethical Guidelines and Good Documentation Practices (GDP) in conducting Clinical Research. |
| CO3 | Effectively understand the Basics of Biostatistics, Research Study Designing, Methodology, Implementation and Grant Application. |

| SEMESTER V | |
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| BMLT 120 L | Clinical Biochemistry - I |
| CO1 | Interpret the biochemistry reports of biochemical markers such as Diabetic Profile, Liver Function Tests, Renal Function Tests and Cardiac Markers in clinical diagnosis. |
| CO2 | Gain adept knowledge about the significance and applications of automation and advanced diagnostic techniques used in Biochemistry laboratory. |
| CO3 | Understand and apply biochemical knowledge in the development and use of diagnostic tools and techniques in medical laboratory technology. |
| BMLT 121 L | Medical Microbiology - I |
| CO1 | Theoretical as well as practical training in Mycology so that they can participate in good patient care and prevention of infectious diseases in the community. |
| CO2 | Introduction to advanced methods used in the field of diagnostic Microbiology |
| BMLT 122 L | Blood Bank and General Pathology -I |
| CO1 | The student should be able to apply the basic knowledge of hematology, histopathology, and clinical pathology in laboratory |
| CO2 | Basic knowledge of techniques in blood banking like components and FDA regulations |
| CO3 | Adept knowledge and basic skills of working in a pathology lab and blood bank |
| DSE 001 L | Basics of Clinical Skill Learning |
| CO1 | Ability to Measure Vital Signs, do basic physical Examination of the patients, NG tube basics, Administration of Medicines |
| CO2 | Understand about Asepsis, and the Cleanliness related to asepsis and on mobility of the patients |
| DSE 002 L | Hospital Operation Management |
| CO1 | Understand and apply the knowledge of Medico-Legal regulations and Medical Ethics in Healthcare System. |
| CO2 | Ability to utilize Hospital Information system in Hospital services. |
| CO3 | Understand the operation management of Equipment's and medical records in Health Care services. |

| SEMESTER VI | |
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| BMLT 124 L | Clinical Biochemistry - II |
| CO1 | Interpret the biochemistry reports of various biochemical markers such as Lipid Profile, Iron Profile, Bone Profile, Thyroid Profile and Reproductive Profile in clinical diagnosis. |
| CO2 | Gain adept knowledge about the significance and applications of advanced diagnostic techniques used in Biochemistry laboratory including Dry Chemistry. |
| CO3 | Develop critical thinking and problem-solving skills relevant to biochemistry research and clinical practice. |
| BMLT 125 L | Medical Microbiology - II |
| CO1 | Theoretical as well as practical training in Virology so that they can participate in good patient care and prevention of infectious diseases in the community. |
| CO2 | Introduction to advanced Molecular biology techniques used in the field of diagnostic Microbiology |
| CO3 | Introduction to NABL Accreditation process with quality control and SOP writing |
| BMLT 126 L | Blood Bank and General Pathology -II |
| CO1 | Ability to apply the skills of hematology, histopathology, and cytology in clinical laboratory |
| CO2 | Well versed with the techniques in blood banking like components and FDA regulations |
| CO3 | Proficient in knowledge and basic skills of working in a pathology lab and blood bank |