MLT - MEDICAL LABORATORY TECHNICIAN

MLT 100 Apply concepts of anatomy and physiology in healthcare (2-2-4)
This module provides learners with the knowledge and skills required to understand the structure and function of major organ systems in the human body. Learners will gain practical skills in identifying anatomical structures using models, diagrams, and digital resources.

MLT 101 Describe the professional role and ethical conduct in the healthcare setting (2-2-4)
This module provides learners with knowledge and skills to understand the UAE healthcare system and its health determinants. It enables learners to distinguish between various healthcare professional roles and recognize the value of interprofessional collaboration. Additionally, learners will develop the ability to apply ethical standards and utilize decision-making models in resolving ethical dilemmas within healthcare contexts.

MLT 102 Develop basic computer skills (0-2-2)
This module aims to provide learners with the knowledge and skills required to proficiently operate within a computing environment and demonstrate competencies in creating various professional digital outputs, including academic documents, presentations, spreadsheets, and implementing effective data management strategies.

MLT 103 Demonstrate the fundamentals of clinical hematology in the medical laboratory (2-2-4)
This module aims to provide learners with the knowledge and skills required to identify and understand the cellular components of blood, perform basic hematological techniques, operate and maintain hematology analyzers, and correlate laboratory findings with clinical data to diagnose various types of anemias. Learners will develop competencies in venous blood collection, manual cell counts, peripheral blood film preparation and examination, and interpretation of complete blood count (CBC) results.

MLT 104 Demonstrate the fundamentals of clinical chemistry in the medical laboratory (2-2-4)
This module aims to provide learners with the knowledge and skills required to gain a comprehensive understanding of fundamental principles and practices in clinical chemistry. It covers commonly analyzed bodily fluids, key analytes, and techniques used in clinical chemistry testing. Learners will explore the structure, classification, metabolism, and perform laboratory analyses of carbohydrates, lipids, proteins, and enzymes, as well as investigate prevalent associated conditions.

MLT 105 Demonstrate the fundamentals of microbiology in the medical laboratory (2-2-4)
This module aims to provide learners with knowledge and skills required to understand microbiology fundamentals, adhere to microbiology laboratory safety policies, identify microbiological hazards, and apply related quality assurance principles. Learners will prepare cultural media, employ appropriate sterilization methods, and identify bacteria based on their growth characteristics, hemolysis patterns, and staining properties. Furthermore, learners will enumerate microorganisms using standard techniques and conduct biochemical tests for bacterial identification.

MLT 106 Examine the immune system and its relevance to laboratory medicine (2-2-4)
This module aims to provide learners with knowledge and skills required to understand the structure and function of the immune system and perform essential immunological techniques. Upon completion, learners will be able to differentiate between the innate and adaptive immune responses, explain their key mechanisms, and skilfully conduct agglutination tests.

MLT 107 Explore safety practices in a healthcare environment (2-2-4)
This module provides learners with the knowledge and skills required to ensure a safe and secure healthcare environment by recognizing key principles of safety, identifying common hazards and risks, and implementing preventive methods to mitigate potential risks. Learners will gain an understanding of the components of an effective safety management system and will be capable of performing basic life support (BLS) techniques efficiently, enabling them to respond effectively in emergency situations.

MLT 108 Perform mathematical calculations relating to the clinical laboratory techniques (2-1-3)
This module aims to provide learners with knowledge and skills required to perform mathematical calculations relating to clinical laboratory techniques. It includes a review of basic mathematical principles, calculations specific to clinical laboratory areas, and basic statistical calculations associated with quality assurance and quality control.

MLT 200 Conduct hematology tests in the medical laboratory (2-2-4)
This module aims to provide learners with knowledge and skills required to conduct hematological tests used in the diagnosis of various blood disorders including leukemias, lymphomas and hemoglobinopathies. Learners will gain hands-on experience in performing specialized hematological tests, such as leucocyte differential counts, erythrocyte sedimentation rate (ESR), and hemoglobin electrophoresis with emphasis on the clinical correlation between test results and blood diseases.

MLT 201 Perform clinical chemistry tests in the medical laboratory (2-2-4)
This module aims to provide learners with the knowledge and skills required to operate and maintain clinical chemistry laboratory equipment, enabling them to perform and interpret a range of diagnostic tests. Learners will gain the skills to assess liver, kidney, and cardiovascular function through the accurate execution and analysis of liver function tests, renal function tests, and cardiac function tests. Additionally, they will acquire the ability to evaluate electrolyte and water balance, conducting tests to identify imbalances and interpret their clinical significance.

MLT 202 Analyze laboratory data to identify and classify clinical microorganisms (2-2-4)
This module aims to provide learners with knowledge and skills required to identify and characterize clinically significant microorganisms, with a focus on bacterial species. Learners will acquire hands-on skills in performing various staining techniques, such as Gram staining and acid-fast staining, for morphological analysis and bacterial identification. Learners will also develop skills in interpreting antimicrobial susceptibility test results to determine appropriate treatment options.

MLT 203 Apply fundamental histological techniques in the medical laboratory (2-2-4)
This module provides learners with the knowledge and skills required to prepare clinical specimens for histological examination and interpret the micro-anatomical structure of the body's major organs, including functional cells and tissue arrangements.

MLT 204 Apply transfusion medicine science in the medical laboratory (2-2-4)

This module aims to provide learners with an understanding of the principles of transfusion medicine science in the medical laboratory, along with the skills to accurately perform ABO and Rh blood grouping, manage blood donation processes including component preparation and pre-transfusion testing, and ensure the safe handling of blood and its products. Learners will also gain knowledge to describe transfusion-related complications.

MLT 205 Conduct a capstone project in medical laboratory technology (2-2-4)

This module provides learners with the knowledge and skills needed to conduct a capstone research project in the medical laboratory technology field. Learners will develop a research proposal to conduct a literature review, choose the right methods, collect and analyze data, and present their findings in a final report and presentation.

MLT 230 Implement professional traits for medical laboratory technicians in clinical settings I (0-24-4)

This work placement module aims to provide learners with the knowledge and skills required to implement essential skills and professional traits for medical laboratory technicians in clinical settings. Learners will communicate effectively within an interdisciplinary healthcare team in a clinical setting, while prioritizing patient safety, confidentiality and ethical standards.

MLT 231 Implement professional traits for medical laboratory technicians in clinical settings II (0-24-4)

This work placement module aims to provide learners with the essential knowledge and skills required to implement essential skills and professional traits for medical laboratory technicians in clinical settings. Learners will build on their skills to differentiate the distinct roles and responsibilities of different healthcare professionals, collaborate effectively with colleagues and other healthcare professionals to ensure seamless workflow, and adhere to safety protocols in clinical settings.

MLT 232 Apply technical skills in clinical settings for medical laboratory technicians I (0-24-4)

This work placement module aims to provide learners with the knowledge and skills required to apply technical skills in clinical settings for medical laboratory technicians. Learners will proficiently operate a variety of laboratory equipment as well as effectively prepare, manage and store laboratory reagents maintaining their integrity and efficacy. Additionally, the module will cover the principles and techniques of specimen collection and handling, emphasizing best practices to prevent contamination, ensure proper labelling, and adhere to clinical protocols.

MLT 233 Apply technical skills in clinical settings for medical laboratory technicians II (0-24-4)

This work placement module aims to provide learners with the knowledge and skills required to conduct routine laboratory tests in accordance with standardized procedures and protocols. Learners will also be trained to document patient data accurately and prepare detailed reports for review by medical laboratory technologists and medical physicians. Furthermore, the module focuses on monitoring quality control and assurance processes to maintain the accuracy and reliability of laboratory results in clinical settings.

MLT 234 Perform clinical analytical skills for medical laboratory technicians I (0-24-4)

This work placement module aims to provide learners with the knowledge and skills required to accurately analyze, interpret, and validate various laboratory test results. Learners will apply critical thinking and develop the ability to identify subtle changes or anomalies in test data. Additionally, learners will gain proficiency in utilizing basic statistical methods to analyze data sets, assess the significance of findings, and ensure the reliability of test results obtained from clinical samples.

MLT 235 Perform clinical analytical skills for medical laboratory technicians II (0-24-4)

This work placement module aims to provide learners with the knowledge and skills required to communicate test results effectively and provide technical expertise to support clinical decision-making. Learners will develop critical thinking skills to identify and resolve problems related to laboratory testing and operations, and make informed decisions based on laboratory data and clinical information.