

CDC AC Template

PG - Diploma in Medical Laboratory Technology (PG – DMLT)

**Submitted by
Tiksna Livelihood**

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Tata Institute of Social Sciences- School of Vocational Education

PG - Diploma in Medical Lab Technology (PG – DMLT)

1. Introduction

In December 2011, Tata Institute of Social Sciences set up the **School of Vocational Education (SVE)** to provide immediate and definite interventions to improve the lives of the disadvantaged and marginalized youth, especially who are excluded by the formal school education system, through appropriate vocational training programmes. It has been set up with a vision of creating an ecosystem that would bring back the dignity of labour for blue collar streams of work and create sustainable sources of income. This project has been initiated under the aegis of **All India Council for Technical Education (AICTE)** proposed by the **Ministry of HRD, Government of India**.

In addition to the B. Voc. programs TISS:SVE will be conducting short term programs to cater to the skill enhancement requirements. These programs will focus on imparting and upgrading the skill and knowledge of individuals who are already part of the workforce, thereby providing opportunities to individuals to enhance their employability and growth prospectus.

1.1 Key Features

Introduction

PGD in Medical Laboratory Technology is a Comprehensive Study of Understanding the Importance and Usage of Clinical Laboratory Science which dwells into the diagnosis, prevention, and treatment of disease through the use of laboratory tests.

Although, the Diagnosis would be done by Physicians, the students gain an Intrinsic Knowledge about the Various Aspects of Laboratory Practice involving how to test samples and tissues in order to diagnose the ailment in time.

This Program also throws light into the Necessary Competence which the candidates need to possess in order to become Professional Medical Officers and Technicians in the Laboratory.

The Growing Demand for Greater and Easier Accessibility to Medical Services including, Medical Lab Services in Rural and Remote Areas is resulting in the need to have more of such Professionals.

Objectives of the Course

The Broad Objectives of the Course would be to create Ready-to-Be-Employed Workforce of Lab Technicians, who would be:

- Having a Sound knowledge of all the Essential Protocols and Procedures involved in Functioning of a Medical/Pathology Lab
- Trained and Skilled to execute the Activities in the Pathology Laboratory with Strict Adherence to Rules and Safety Measures and Execute the Procedures with Expertise.
- Equipped with the Right Set of Aptitudes and Attitudes that would make them all encompassing Lab Technician.

1.2. Eligibility for Admission

The Eligibility Criteria for this PG Program is a Qualified Graduate holding degree in Science/Applied Science/ Bachelors in Medical Lab Technology from any Recognized University.

1.3. Employability

Once the student completes the course will be able to work in various pathology laboratories, hospitals as Lab Technician, Senior Lab Technician, Medical Lab Technician, Lab Technician (Part-Time), Lab Manager based on the experience.

2. Course Structure

Duration of Course – 1 Year (12 Months)

Total No of Hours (approx.) – 1410 hours

Course Particulars	Measure		
Total no. of Hours for PG - DMLT	1410 hours		
Total no. of Credits	Vocational Theory = 26 Credits (approx.)	OJT = 32 Credits	
Project Work post completion of Theory and OJT hours			Project Work = 2 Credits
Total hours	390 hours	960 hours	60 hours
	Learners will complete 60 hours of Project Work in 1 month post completion of all the 2 semesters which includes 390 hours of Theory and 960 hours of OJT.		

Course Type – Full time

Total No. of Semesters – 2

Semester Wise Papers:

Semester	Paper Code	Paper Title	Credits
I	PGDMLT 1	Anatomy	2
	PGDMLT 2	Physiology And Laboratory Basics*	2
	PGDMLT 3	Phlebotomy And Waste Management*	2
	PGDMLT 4	Biochemistry And Lab Ethics*	2
	PGDMLT 5	Haematology And Immunology*	3
	PGDMLT 6	Parasitology And Toxicology*	2
	PGDMLT – P1	Vocational Practical	17
II	PGDMLT 7	Clinical Pathology*	2
	PGDMLT 8	Bacteriology, Mycology And Histopathology*	2
	PGDMLT 9	Virology*	2
	PGDMLT 10	Endocrinology And Blood Banking*	2
	PGDMLT 11	Molecular Biology *	3
	PGDMLT 12	Operational Management	2
	PGDMLT – P2	Vocational Practical	15
Project Work	Project Report	Project Report	2 (60 hours)

Examination and Assessment/ Certificate of Participation:

The Assessment of Students would be done in Written, Oral and Practical Examination.

2.1. Syllabus for PG Diploma in Medical Lab Technology (PG – DMLT)

Introduction:

The syllabus envisages equipping the student with the professional expertise to operate in a medical lab. The student would be honing their skills in Understanding all Basic & Special Types of Techniques, Handling Lab Equipment, following Lab Procedures, Specimen Collection, Transportation, Preservation & Processing, usage of Personal Protection Equipment and Sterilization Procedures and also Awareness about the Regulations and Acts pertaining to Medical Laboratories.

Syllabus to be covered:

- Anatomy
- Physiology
- Basic Concepts in Medical Lab Technology
- Phlebotomy
- Bio- Medical Waste Management
- Clinical Biochemistry
- Lab Management and Ethics
- Haematology
- Immunology & Diagnostic Serology
- Clinical Parasitology & Routine Examination of Faeces
- Routine Examination of Body Fluids
- Clinical Pathology
- Microbiology – (Bacteriology, Mycology, Cytology, Histopathology & Virology)
- Endocrinology
- Immunohematology, Blood Banking Techniques and Transfusion Methods
- Tumour & Cancer Markers
- Cytogenetics
- Toxicology
- Operational Management

Semester 1

Course Content (Vocational Theory)

PGDMLT 1 – Anatomy

Main Concepts:

- Anatomy
 - Head, Neck & Face
 - Upper limb
 - Thorax, Abdomen, Pelvis
 - Lower Limb
- Surface Markings and Clinical Anatomy of Head, Neck & Face, Upper Limb, Lower Limbs
- Abdominal Part of Oesophagus and Stomach
- Contents of Vertebral Canal

PGDMLT 2 – Physiology And Laboratory Basics

Main Concepts:

- Introduction to physiology
- Cell, Blood, Skin
- Lymphatic System, Cardiovascular System, Respiratory System, Digestive System, Excretory System, Nervous System, Muscular System

- Basic Laboratory Principles and Procedures
- Glassware, Solutions and Reagents, Equipment & Instruments
- Maintaining Equipment and Quality Control

PGDMLT 3 – Phlebotomy And Waste Management

Main Concepts:

- Phlebotomy—Training for Withdrawing Blood

- Introduction to Bio-medical Waste Management
- Categorizing Biomedical Waste
- Appropriate Disposal of Urine and Stools
- Disposal of Infectious Waste, Hazardous Waste
- Protocol to be followed in case of Exposure to Infectious or Hazardous Waste
- Bio-medical Waste Management System
- Importance of Occupational Safety and Health

- Radioactive Waste Management, Genotoxic / Cytotoxic Waste Management
- Legal Regulations for Biomedical Waste Management & Radioactive Waste Regulation Laws

PGDMLT 4 – Biochemistry And Lab Ethics

Main Concepts:

- Human Nutrition
- Carbohydrate Metabolism, Protein Metabolism, Lipid Metabolism, Water Metabolism, Mineral Metabolism, Haemoglobin Metabolism
- Renal Function Tests, Chemical Tests in Renal Disease
- Gastric Function Tests, Liver Function Tests, Cardiac Profile Tests, Interpretative Clinical Chemistry
- Acid base balance concepts & disorders
- Phosphorylation, Enzymes, Vitamins
- Milk & Composition of Milk

- Personality Development: Patient and Relatives Communication
 - Interpersonal Relationships, Communication, Patient and Relatives Communication
 - Stress Management, Group Dynamics and Team Building, Conflict Management, Time Management, Motivation

- Acts and Regulations including Safety Protocols, Confidentiality Protocols and Home Visit Protocols
- Training the Technician, Guidelines for Good Clinical Laboratory Practices

PGDMLT 5 – Haematology And Immunology

Main Concepts:

- Introduction to Haematology, Haematological Diseases, Haemostasis, Coagulation and Routine Coagulation Tests
- Haematology & Lymphoreticular Tissues — Pathology
- Hemapheresis
- Routine Haematological Tests, Special Haematological Tests
- Bone Marrow — Processing, Transplantation and Transfusion
- Plasma Cell Disorders
- Flow Cytometry

- Introduction to Immunology
- Clinical Immunology, Factors influencing Immunity, Immunological Reactions & Related Terms

- Antibodies & Immunoglobulin Classes, Role of Antibodies in Diagnostic Applications, Research Applications of Antibodies, Antigen-Antibody Interactions
- Immunological reactions & related terms, The Basic Mechanism of Innate Immunity
- Origin of Immune Cells
- T Cells, B Cells, Cytokines
- Functions of Immune System
 - Cell-mediated immunity process
 - Antigen-mediated Immunity
- Major Histocompatibility Complex, Hypersensitivity, Autoimmune Diseases, Laboratory Experiments
- Serological Diagnosis of Microbial Diseases, Principles of Serodiagnostic Tests

PGDMLT 6 – Parasitology And Toxicology

Main Concepts:

- Clinical Parasitology
- Routine examination of Faeces
- Toxicology – Toxic Effects of Drugs
- Routine Examination of Cerebrospinal Fluid, Cavity Fluids, Gastric Contents, Sputum, Semen

Vocational Practicals

PGDMLT 1 – Anatomy

In-class Assessment Tasks:

- ✓ Demonstration of Anatomical Structures of Head, Neck & Face, Upper Limb, Pleura and Lungs & Diaphragm, Trachea, Oesophagus and Thoracic Duct, Abdomen & Pelvis, Lower Limb
- ✓ Surface Markings of Head, Neck & Face, Upper Limb, Lower Limbs
- ✓ Demonstration of the Abdominal Part of Oesophagus and Stomach
- ✓ Demonstration of the Contents of Vertebral Canal

PGDMLT 2 – Physiology And Laboratory Basics

Note: Physiology Practical will also get covered under the Topic “Routine Haematological Tests” from Paper “PG DMLT 5 – Haematology And Immunology”.

Assessment Tasks:

- ✓ Demonstration of the Routine Haematological Tests
- ✓ Demonstration of the Care & Maintenance of Glassware

- ✓ Demonstration of the Preparation of Reagents in the Lab
- ✓ Demonstration of the use of Various Laboratory Equipment & Instruments

PGDMLT 3 – Phlebotomy And Waste Management

Assessment Tasks:

- ✓ Demonstration of the various ways in which a phlebotomy technician is expected to assist the patient before, during and after the tests are conducted
- ✓ Demonstration of locating appropriate site for obtaining blood samples
- ✓ Demonstrate the correct way of drawing blood from patients, preparing, labelling and dispatching the blood samples so as to achieve final diagnosis of the patient's disease condition in a timely manner
- ✓ Demonstration of the best procedures to store and transfer the blood samples, updating patient records
- ✓ Demonstration of the Care & Maintenance of Glassware
- ✓ Demonstration of the Preparation of Reagents in the Lab
- ✓ Demonstration of the use of Various Laboratory Equipment & Instruments
- ✓ Demonstration of appropriate Management of Bio-medical Waste disposal, Appropriate Disposal of Urine and Stools
- ✓ Demonstration of the Disposal of Infectious Waste and the Disposal of Hazardous Waste
- ✓ Demonstration of the Protocol to be followed in case of Exposure to Infectious or Hazardous Waste
- ✓ Demonstration of the Disposal of Laboratory Wastes, Demonstration of the Occupational Safety & Health Measures, Demonstration of the Radioactive Waste Management, Genotoxic / Cytotoxic Waste Management

PGDMLT 4 – Biochemistry And Lab Ethics

Assessment Tasks:

- ✓ Demonstration of the Staining Methods & Aseptic Techniques, Data management, Standard Operating Procedures (SOP)
- ✓ Discuss & Describe the Interpretative Clinical Chemistry
- ✓ Demonstration of the following tests in the Pathology Laboratory :
 - Renal Function Tests, Chemical Tests in Renal Disease, Gastric Function Tests, Liver Function Tests, Cardiac Profile Tests

PGDMLT 5 – Haematology And Immunology

Assessment Tasks:

- ✓ Demonstration of the Haemostasis, Coagulation and Routine Coagulation Tests
- ✓ Demonstration of the Routine Haematological Tests, Special Haematological Tests

- ✓ Demonstration of the Serodiagnostic Tests, use of Laboratory Requirements, Equipment and Instruments
- ✓ Bone Marrow Aspirates
 - Assist the physician in bone marrow aspiration/ biopsy procedure
 - Demonstrate appropriate collection methods of aspirate specimens
 - Demonstrate preparation of aspirate slides
 - Demonstrate the preparation of particle clots
 - Demonstrate staining of bone marrow aspirate slides
 - Demonstrate how to perform microscopic examination for bone marrow aspirate slides
 - Demonstrate how to perform nucleated differential count
 - Demonstrate how to perform storage iron
 - Demonstrate how to perform supplementary investigations
 - Demonstrate how to prepare the aspirate report
- ✓ Trepine Biopsy
 - Demonstrate appropriate collection methods of bone marrow trephine biopsy specimens
 - Demonstrate appropriate fixation methods of bone marrow trephine biopsy specimens
 - Demonstrate how to perform decalcification for bone marrow trephine biopsy specimens
 - Demonstrate appropriate processing methods of the trephine biopsy specimen
 - Demonstrate appropriate staining methods of sections
 - Demonstrate how to perform microscopic examination for bone marrow trephine biopsy specimens
 - Demonstrate how to perform supplementary investigations for bone marrow trephine biopsy specimens
 - Demonstrate how to prepare the trephine biopsy report
- ✓ Plasma Cell Disorders
 - Demonstrate the following primary evaluation tests for patients with MGUS –
 - Perform complete blood count (CBC)
 - Perform serum calcium and creatinine levels
 - Perform spep/upep with immunofixation
 - Perform serum free light chain (FLC) levels and ratio
 - Perform quantitation of immunoglobulins
- ✓ Follow the protocol appropriately while performing Flow Cytometry

PGDMLT 6 – Parasitology And Toxicology

Assessment Task:

- ✓ Demonstration of various parasites like Protozoa, Helminths, Class Nematodes, Platyhelminthes, Cestodes, Trematodes
- ✓ Demonstration of Routine examination of faeces, Microscopic examination of Stool Specimen
- ✓ Demonstration of Laboratory Experiments of Therapeutic and Toxic Levels of Drugs

- ✓ Demonstration of Routine Examination of Cerebrospinal Fluid, Cavity Fluids, Gastric Contents, Sputum, Semen

Semester 2

Course Content (Vocational Theory)

PGDMLT 7 – Clinical Pathology

Main Concepts:

- Pathology
- Techniques for the Study of Pathology
- Cell Injury and Cellular Adaptations
- Immunopathology including Amyloidosis
- Derangement of Homeostasis and Haemodynamics
- Inflammation and Healing
- Infectious and Parasitic Diseases
- Neoplasia

- Pathology of Heart, Respiratory System, Liver, Biliary Tract and Exocrine Pancreas, Gastrointestinal Tract, Kidney and Lower Urinary Tract, Nervous System, Musculoskeletal System, Male Reproductive System, Female Genital Tract, Breast

PGDMLT 8 – Bacteriology, Mycology And Histopathology

Main Concepts:

- Clinical Microbiology, Clinical Bacteriology Laboratory, Staining Methods & Aseptic Techniques, Culturing Microorganisms, Identification of Bacteria, Study of Gram Negative Bacteria, Study of Gram Positive Bacteria
- Automation, Collection, Transport & Examination of Specimen
- Introduction to Virus, Virus Classification, General Characteristics common to Virus, Cultivation of Viruses, Reaction to Physical & Chemical Agents

- Methods of Inactivation of Viruses, DNA containing Viruses, RNA containing Viruses, General Transmission Routes for Viruses, Interferons, Laboratory Diagnosis of all Important Viruses
- Clinical Mycology
- Cytological Techniques
- Histopathology Techniques and Laboratory Requirements

PGDMLT 9 – Virology

Main Concepts:

- Introduction to Virus, Virus Classification, General Characteristics common to Virus, Cultivation of Viruses, Reaction to Physical & Chemical Agents
- Methods of Inactivation of Viruses, DNA containing Viruses, RNA containing Viruses, General Transmission Routes for Viruses, Interferons, Laboratory Diagnosis of all Important Viruses

PGDMLT 10 – Endocrinology And Blood Banking

Main Concepts:

- Endocrine System & its Hormones
- Immunohematology, Blood Banking Techniques and Transfusion Methods

PGDMLT 11 – Molecular Biology

Main Concepts:

- Introduction to Oncology
- Tumour & Cancer Markers
- Cytogenetics- Chromosomal Studies
- Prenatal & Postnatal Cytogenetics, Chromosomal Abnormalities, Blotting Techniques, HLA Typing & Cross Matching, Forensic Identity Testing, Parentage Testing
- Harvesting Stem Cell Banking
- Introduction to Genetic Engineering

PGDMLT 12 – Operational Management

Main Concepts:

- General Concepts of Management, Motivational Theories
- Growth Mind set, Service Mind set, Systems Thinking
- Stakeholder Management, Conflict Management, Decision Making, Change Management, Time Management
- Power of Asking Questions, Motivational Theories, Creative Thinking (Problem Solving)

Vocational Practicals

PGDMLT 8 – Bacteriology, Mycology And Histopathology

Assessment task:

- ✓ Demonstration of the Staining Methods & Aseptic Techniques, Culturing Microorganisms, Demonstration of the Identification of Bacteria: Gram Negative Bacteria & Gram Positive Bacteria, Automation process, Collection, Transport & Examination of Specimen, Laboratory Requirements, Equipment and Instruments
- ✓ Demonstration of the Laboratory Diagnosis of Mycotic Infections, Detection and Identification of Fungi by PCR Technology, Differentiation between Normal and Abnormal Cells
- ✓ Demonstration of the Sampling Techniques in Cytology, use of Various types of Specimens and Requirements for Cytological Studies, Various Cytological Tests, Fixation of Cytological Smears, use of Cyto-Centrifuge in Cytology
- ✓ Demonstration of the Histopathological Examination of Tissues, Various Types of Fixatives, Freeze drying, Gross Examination of Specimen, Preparation of Paraffin Sections, Embedding, Various Methods of Preparation of Tissue sections, General Staining Procedure

PGDMLT 9 – Virology

Assessment Tasks:

- ✓ Demonstration of the Cultivation of Viruses, Methods of Inactivation of Viruses
- ✓ Demonstration of the DNA & RNA containing Viruses
- ✓ Demonstration of the Laboratory Diagnosis of all Important Viruses, Major Histocompatibility Complex, Hypersensitivity Tests
- ✓ Demonstration of the Laboratory Experiments of various Autoimmune Diseases

PGDMLT 10 – Endocrinology And Blood Banking

Assessment Tasks:

- ✓ Demonstration of various Endocrinal Hormones, Hormones of thyroid gland, Hormones of the anterior pituitary Gland, Thyrotrophic hormones
- ✓ Demonstration of Laboratory Experiments for Cushing's Syndrome & Crohn's syndrome, Laboratory Diagnosis of Hormones of the Gonads

- ✓ Demonstration of Blood Banking Techniques and Blood Transfusion Methods
- ✓ Demonstration of Human Blood Groups & Rhesus blood groups
- ✓ Demonstration of Rh and Pregnancy
- ✓ Demonstration of Collection of Blood from the Donor, Storage of Blood
- ✓ Awareness about Blood Transfusion Reactions, Quality Control in Blood Bank Procedures
- ✓ Demonstration of Blood Preservation Methods.
- ✓ Demonstration of Preparation and Selection of Various Blood Components

- ✓ Demonstration of Protocol for Producing Blood Components, Techniques Used for Separation of Blood Components, Blood Components Transfusion, Blood Transfusion Alternatives

PGDMLT 11 – Molecular Biology

Assessment task:

- ✓ Demonstration of Various Tumours, Cancerous Cells at various steps, Tumour Markers
- ✓ Demonstration of General method of preparation of cell culture in Cytogenetics, Laboratory Diagnosis of Genetic Disorders & Inborn errors of Metabolism, Use of Cell culture for Cytogenetic studies, FISH Technique in Cancer Genetics, Clinical Cytogenic Testing (CCT), Prenatal & Postnatal Cytogenetics
- ✓ Demonstrate how to perform Blotting Techniques
- ✓ Demonstrate how to perform HLA typing & cross matching

PG Diploma Project Report (Hard Bound Copy)

A comparative Study of Management of Different Types of Laboratories (Minimum 3), so that the student will be able to grasp & comprehend

- Detailed Knowledge of the Industry
- Functioning of Various Types of Laboratories
- Managing own Laboratory in future

Process

Comparative Study of Management of Different Types of Laboratories (Minimum 3) with respect to following pointers:

- ✓ Primary Data (Industry Overview)
- ✓ Secondary Data (Overview of Laboratory Setup)
- ✓ Organisational Structure of the Laboratory
- ✓ Interviewing Industry / Laboratory People
- ✓ Policies and Processes of the Laboratory Setup
- ✓ Software used by the Laboratories
- ✓ Different Types of Job Roles in the Laboratory
- ✓ Financial Model of Laboratory Setup
- ✓ Growth Aspiration/ Future Goals of Laboratory

Note: A Draft Template with all details will be provided separately.

Method of Teaching:

A combination of vocational theory inputs along with relevant practical exposure that would commensurate with the guidelines provided in the Facilitator's guide.

Method of Assessment & Weightage:

Assessment Tasks:

Practical Examination (i.e. Assessment Tasks) [100 marks]:

- Spot identification - 20 marks
- Experiment - 60 marks
 - Long Experiment (40 marks)
 - Short Experiment OR Case Studies (20 marks)
- Viva-Voce - 20 marks

Project Report [50 Marks]

- Submission and Presentation of Project Report - 30 marks
- Viva-Voce - 20 marks

Weightage:

Method of Assessment & Weightage:

- Internal exams - 30%
[10% - Attendance + 20% - Workbook OR 30% - Assignments/ Projects]
- Theory Examination - 70%
- Total weightage (Internal Examination + Theory Examination) – 100 %

Reading Lists & References

- Anatomy and Physiology for Nurses – Evelyn Pearce
- Human Physiology – C. C. Chatterjee

- Textbook of Medical Laboratory Technology – P. B. Godkar
- Biochemistry – Pankaja Naik
- Textbook of Pathology – Harsh Mohan
- Guidelines for Good Clinical Laboratory Practices (GCLP) – Indian Council of Medical Research, New Delhi
- Textbook of Immunology – Anantha Narayan
- Textbook of Medical Parasitology - CKJ Paniker

Essential Reading:

- Textbook of Medical Laboratory Technology – P. B. Godkar
- Human Physiology – C. C. Chatterjee
- Human Anatomy – B. D. Chaurasia, volume 1, 2, 3
- Textbook of Pathology – Harsh Mohan

Suggested Reading:

- Essentials of Human Anatomy and Physiology – Elaine N Marieb
- Textbook of Medical Laboratory Technology – Sood
- Textbook of Biochemistry for Dental/ Nursing/ Pharmacy students – M.N. Chatterjea
- Fundamentals of Microbiology and Immunology – Ajit Kumar Banerjee and Nirmalaya Banerjee
- Clinical Pathology, Haematology and Blood Banking for DMLT students – Nanda Maheshwari

*** Note**

As per COE Suggestions (Dr. Geeta Gandhe Mam), changed Nomenclatures for the Approved Paper Titles are as follows –

AC Approved Paper Titles		Paper Titles – After COE Approval	
Paper Code	Paper Titles	Paper Code	Paper Titles
Semester I		Semester I	
PGDMLT 2	Physiology And Basic Concepts in MLT	PGDMLT 2	Physiology And Laboratory Basics*
PGDMLT 3	Phlebotomy And Bio-Medical Waste Management	PGDMLT 3	Phlebotomy And Waste Management*
PGDMLT 4	Clinical Biochemistry And Personality Development: Patient & Relatives Communication and Lab Management Ethics	PGDMLT 4	Biochemistry And Lab Ethics*
PGDMLT 5	Haematology & Coagulopathies And Immunology & Diagnostic Serology	PGDMLT 5	Haematology And Immunology*
PGDMLT 6	Clinical Parasitology & Routine Examination of Faeces And Toxicology & Routine Examination of Body Fluids	PGDMLT 6	Parasitology And Toxicology*
AC Approved Paper Titles		Paper Titles – After COE Approval	
Paper Code	Paper Titles	Paper Code	Paper Titles
Semester II		Semester II	
PGDMLT 7	Clinical Pathology (General & Systemic Pathology)	PGDMLT 7	Clinical Pathology*
PGDMLT 8	Microbiology – (Bacteriology + Mycology & Cytology + Histopathology)	PGDMLT 8	Bacteriology, Mycology And Histopathology*
PGDMLT 9	Microbiology – Virology	PGDMLT 9	Virology*
PGDMLT 10	Endocrinology & Immunohaematology And Blood Banking Techniques & Transfusion Methods	PGDMLT 10	Endocrinology And Blood Banking*
PGDMLT 11	Tumour & Cancer Markers And Cytogenetics	PGDMLT 11	Molecular Biology *
