SREE NARAYANA COLLEGE ALATHUR

Affiliated to the University of Calicut

In association with HORIBA India Limited , New Delhi

DEPARTMENT OF MICROBIOLOGY

SKILL DEVELOPMENT PROGRAM ON

DIAGNOSTIC TECHNOLOGIES

#EDUCATION BEYOND BOOKS

WHO CAN ATTEND: LIFE SCIENCE STUDENTS

Dr. Parag Dharap
Consultant Pathologist, Founder & Director Dr. Dharap's Diagnostic Centre Mumbai

Topic: ABC of CBC

Dr. Ezhilarasan
Director- Hicare scans and Labs Chennal

Topic: Basics of Biochemistry

Dr. Pushkar Admane
MD Pathology, Business Head West india, Head-Scientific, HORIBA India Technical Institute Intemational Training Center & HORIBA Experience Zone

Topic: Career in Diagnostics

Module 1 Hematology

Module 2 Clinical Chemistry

Module 3 Career in Diagnostics

2 PM, 14/07/2025 Onwards

Guru Kripa Hall

Online

Certification: HORIBA India Technical Institute

The Department of Microbiology, in association with Horiba India Limited,New Delhi successfully organized a Skill Development Program on Diagnostic Technologies at Gurukripa Hall from 14/7/2025 in three modules. The program aimed to enhance students' practical knowledge and technical skills in the field of microbiology, with a focus on advanced instrumentation and laboratory techniques.The session was inaugurated by the Principal, Dr. Praveena Vijayan, who emphasized the importance of industry-academia collaboration in bridging the gap between theoretical knowledge and practical application.Following the inauguration, Dr. S. Dhiva, Head of the Department of Microbiology, addressed the participants and highlighted the relevance of skill-based learning in shaping competent professionals for the future.The program concluded with a vote of thanks delivered by Ms. Divya R, Assistant Professor of Microbiology, who expressed gratitude to all the dignitaries, resource persons, and participants for their active involvement and contribution to the success of the event.The initiative proved to be an enriching experience for the attendees, providing valuable insights into contemporary microbiological practices.

MODULE: ABC OF CBC

History – Manual Process – Electrical Impedance Technology – What tests are included in a CBC? – Key Components of a CBC – Why CBC is important – Interpreting the CBC – Refference range – Commonly Used Termes – Red Cell Related Parameters & Indices – Anemia – Microcytic Anemia – Macrocytic Anemia – Normocytic Anemia – Haematocrit – Oter Red Cell Related Parameters – Leucocytosis – Leocopenia – Neutrophils – Lymphocytes – Monocytes – Eosinophils – Basophils – Blasts – Platelets Related Parameters

MODULE: CARRIER IN DIAGNOSTICS

Graduation – Questions – History – Who is Clinical Lab Technologist – Roles and Responsibilities of Lab Technologies – Different Areas – What to study – conventional courses – Other Specialized courses – Newer Trends – Carrier Opportunities Domains – Conventional Carrier Path – Academic – Research – Additional Opportunities – Overseas Opportunities

MODILE: HITI WORKSHOP BIOCHEMISTRY

What is Biochemistry – Inorganic Compounds – Organic Compounds – Colorimetry-Beer Lambert Law – Basic Principle – Beer-Lambert Law – Photometry – Types of Analysers – Colorimeter – Semi-Auto & Automatic Instrument – Routine Endpoint Chemistry – Fixed Time Chemistry – Routine Fixed Time Chemistry – Real Time Kinetic – Routine Real Time Chemistries – Ideology on Blanking – Type of Blank – Instrument Calibration – Sample Pricessing – Pipetting Technologies

MODULE 1: HEMATOLOGY

DR. PARAG DHARAP

- D.P.B. (College of Physicians), M.D. Pathology (T.N. Medical College, Mumbai University).
- Practicing Pathologist 'Dr. Dharap' s Diagnostic Centre' since 1994.
- Managing Committee member of Association of Practicing Pathologists.
- Technical Assessor for Hematology & Clinical Pathology – ISO - 15189.
- Wide experience of Laboratory management, instrumentation, Hematology analyzers & Quality Assurance in Pathology.
- Contribution of a WBC flag to the screening of malaria infestation.
- Diagnostic screening of malaria infestation through WBC Scattergrams.
- Algorithmic Data-Mining Techniques.


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Day 1

Skill Development Program – Day 1 Report

Topic: Hematology

Resource Person: Dr. Parag Dharap

Session Title: “ABC of CBC”

The first session of the Skill Development Program, organized by the Department of Microbiology in association with Horiba, commenced with an insightful lecture on Hematology, delivered by Dr. Parag Dharap, a distinguished expert in the field.The session was titled “ABC of CBC” focusing on the interpretation and clinical relevance of the Complete Blood Count (CBC) test — a fundamental diagnostic tool in medical laboratories.Dr. Dharap meticulously explained the three major components of the CBC:

A – Anemia Detection: Through the analysis of red blood cell (RBC) count and hemoglobin levels, participants learned how to identify and evaluate various types of anemia.

B – Blood Oxygen Carrying Capacity: Emphasis was placed on the significance of hemoglobin in transporting oxygen and how its deficiency can indicate underlying conditions.

C – Clotting Ability: The session highlighted the role of platelet count in assessing the body’s clotting mechanism, which is crucial for diagnosing bleeding disorders and monitoring treatment plans.

The interactive session was enriched with case-based examples, practical insights, and the latest advancements in hematological testing. Students and faculty members actively participated, making it a highly engaging and educational experience.Overall, Day 1 of the program laid a strong foundation in hematology, enhancing the participants’ understanding of diagnostic techniques used in routine and specialized laboratory practice.

MODULE 2: CARRIER IN DIAGNOSTICS

DR. PUSHKAR ADMANE

Dr Pushkar Admane
MD Pathology
Business Head West India,
Head – Medical Affairs, Trainings and Education

- Has earned MD Pathology from LTMMC and Hospital, Sion Mumbai
- General Management Program of Healthcare Executives (GMHE) from IIM Bangalore.
- More than 13 years of experience in various roles in Hematology and Clinical Laboratory. Actively involved in planning and strategizing various clinical labs.
- Completed ISO 15189 training and represented lab in various NABL, NABH and JCI audits.
- Was Chairman of Hospital Blood Transfusion Committee, Member Secretary - Hospital Ethics Committee and Set-up research department at Alexis Hospital.
- Has 6 publications in various national and international journals.

Day 2

Skill Development Program – Day 2 Report

Topic: Career in Diagnostics

Resource Person: Dr. Pushkar Admane

The second day of the Skill Development Program, organized by the Department of Microbiology in collaboration with Horiba, featured an enlightening session on “Career in Diagnostics” conducted by Dr. Pushkar Admane, a renowned professional in the diagnostic industry.

Dr. Admane focused on the various career opportunities available in the field of diagnostics for microbiology graduates. He emphasized the growing demand for skilled professionals capable of detecting and diagnosing diseases through advanced laboratory tests and diagnostic technologies.

Key highlights of the session included:1)Overview of the Diagnostic Industry: Dr. Admane discussed the scope and growth of the diagnostic sector in both clinical and research settings.2)Career Paths: The session detailed potential roles such as laboratory technicians, pathologists, radiologists, microbiologists, and molecular analysts, explaining the qualifications and skills required for each.

3)Technological Advancements: The importance of staying updated with emerging diagnostic tools and molecular techniques was underlined as crucial for career advancement.Skill Development & Industry Readiness: Dr. Admane encouraged students to focus on hands-on training, certification programs, and internships to improve employability in the competitive healthcare and diagnostics landscape.

The session was highly informative and motivating, offering participants a clear understanding of how to navigate their career paths post-graduation. Students engaged in an interactive Q&A, where they received practical advice on building successful careers in the diagnostic field.

MODULE 3: CLINICAL CHEMISTRY

DR EZHIL ARASAN KAILASAM

- Dr.Ezhil Arasan Kailasam, a well-known clinical quality control expert in the field of medical diagnostic in Tamilnadu, India, is the Managing Director of Laboratory , HiCare Lab Chennai. He is dedicated towards the cause of preserving human life through technology & innovation and striving to make the best clinical diagnostics reference model in the country.
- Dr Arasan, has over 25 years of experience in the field of medical diagnostics. In Jan 2000, he joined the Apollo hospital Chennai as a senior technologist, in addition Dr Arasan served as the quality control officer and won numerous award from the hospital management for his innovative methods of diagnostics and unique services.
- His cost-effective, safe, and international-standards compliant methods are used by many leading diagnostic centres and hospitals in the city.

Day 3

Clinical Chemistry Session Report

On the third day of the program, we attended a session on Clinical Chemistry, conducted by Dr. Ezhilarasan. The session focused on introducing the fundamentals of biochemistry, serving as a bridge between biology and chemistry to help us better understand human health, disease mechanisms, and metabolic processes.

The lecture covered the four major classes of biomolecules:Proteins – their structure, function, and role in enzymatic activity and cellular processes.Carbohydrates – their importance as energy sources and structural components.Lipids – their role in membrane formation, energy storage, and signaling.Nucleic Acids – the carriers of genetic information, including DNA and RNA.Throughout the session, Dr. Ezhilarasan emphasized the clinical relevance of each biomolecule group, connecting theoretical knowledge with real-world applications in healthcare and diagnostics.The session concluded with an online examination to assess our understanding of the concepts discussed.Overall, the session was informative and engaging, providing a strong foundation for further studies in biochemistry and its application in clinical settings.