

Curriculum For

Certificate Training Programme in

Fundamentals of Molecular Pathology

Certificate Program



SRI AUROBINDO UNIVERSITY

SAIMS HOSPITAL CAMPUS, Indore Ujjain, State Highway, Bhawrasla, Indore, Madhya Pradesh 453555

Course Overview

Title: Fundamentals of Molecular Pathology Certificate Program

Education: Certificate Program

Eligibility: MD (Pathology, Biochemistry, Microbiology) or DNB (Pathology, Biochemistry, Microbiology) and M.Sc. (any discipline of Life Sciences) or PhD.

Intake Capacity: 5 Fellows

Duration: 1 Month

Food/Accommodation: Not provided

Vacation: Not applicable

Timings: Monday to Friday (9:00 AM – 4:30 PM)

Attendance Requirement: Minimum 80%

Goals: The Fundamentals of Molecular Pathology Certificate Program is a skill-based, technical course tailored for students in life sciences, medical, and paramedical fields who aspire to pursue careers in molecular pathology.

Program Description

The Certificate Program in Molecular Pathology is a specialized program designed to equip participants with the knowledge and skills necessary to excel in the rapidly advancing field of molecular diagnostics and pathology. This comprehensive course bridges the gap between traditional pathology and modern molecular techniques, enabling participants to apply molecular approaches in both clinical and research settings.

Program Objectives

1. **Understanding Core Concepts:** Participants will learn the fundamental principles of molecular biology and pathology, providing a solid foundation for molecular diagnostics.
2. **Mastering Techniques:** Hands-on experience with molecular techniques like PCR, RT-PCR, and Next-Generation Sequencing (NGS) will prepare participants for diagnostics, research, and clinical applications.
3. **Clinical Relevance:** Emphasis will be placed on the role of molecular pathology in diagnosing and treating diseases, particularly in oncology, hematology, and infectious diseases, with a focus on personalized medicine.

4. **Ethics and Legal Aspects:** The course includes ethical and legal considerations of molecular diagnostics to prepare participants for professional challenges in the field.

Program Structure

The program is divided into three comprehensive modules, culminating in hands-on training sessions:

Module 1: Introduction to Molecular Pathology

- Basics of molecular biology
- Overview of molecular pathology
- Clinical relevance and applications

Module 2: Techniques in Molecular Pathology

- DNA extraction, PCR, and RT-PCR
- Next-Generation Sequencing (NGS)

Module 3: Practical Training

- Hands-on training sessions in molecular labs
- Interpretation of molecular data
- Report writing and clinical correlation

Assessment and Certification

Assessment:

- Multiple-choice quizzes and assignments after each module

Certification:

- Participants who successfully complete the course will receive a certificate in Fundamentals of Molecular Pathology, signifying their proficiency in this specialized field.

This program offers a unique blend of theoretical knowledge and hands-on practical training, making it an invaluable addition to the professional development of individuals interested in molecular pathology.

Learning Outcomes

Upon completion, participants will be able to:

- Comprehend and apply molecular biology concepts in pathology.
- Perform and interpret advanced molecular diagnostic techniques.
- Integrate molecular pathology into clinical decision-making processes.

- Conduct independent research in molecular pathology and present findings effectively.
- Navigate the ethical and legal landscape of molecular diagnostics.