



**Certificate Course in
GENOMIC TECHNOLOGIES
IN DIAGNOSTICS**

COURSE COORDINATORS:


MR. SREEJESH P C
Head, Dept. of Biotechnology


DR. RENITA MARIA DSOUZA
Associate Professor,
Dept. of Biotechnology

Course Highlights

- Molecular techniques for diagnosis.
- Theory and practical sessions on nucleic acid extraction methods.
- Theory and practical sessions on PCR.

HYBRID MODE

 **Monday & Wednesday**
(3.15 to 4.15 pm)

 **Department of Biotechnology,**
St Aloysius College (Autonomous), Mangaluru. 

Course Name: Genomic Technologies in Diagnostics

Course code: 23022

Course Duration: 30 hours

Course Type: Certificate Course

Mode: Hybrid mode (Offline/Online) with hands-on training.

Course Outcome:

Upon completion of the course, the participants should be able to:

- CO1: Acquire a comprehensive understanding of diverse molecular techniques utilized in the field of genomic diagnostics, including their principles, applications, and limitations.
- CO2: Develop proficiency in executing key molecular methods, encompassing the extraction, quantification, and quality analysis of nucleic acids, as well as the polymerase chain reaction (PCR), within the context of molecular diagnostics.

Course Coordinator:

Sreejesh P C

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Course Instructors:

Dr Renita Maria Dsouza

Associate Professor of Biotechnology & Associate Dean

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Module I: Molecular Techniques for Diagnosis. (15 Hours)

Analysis of gene expression: Southern blot, Northern blot and western blot. In situ

hybridization: FISH & GISH. DNA microarray. DNA sequencing- Sanger's, Next Generation Sequencing. DNA fingerprinting and its applications in forensics.

Module II: Theory and practical sessions on Molecular techniques: (15 Hours)

Basic introduction to molecular diagnosis, Molecular techniques: Nucleic acid extraction methods, Nucleic acid quantification and purity check. Agarose gel electrophoresis. PCR: Principle, procedure, and applications. Types of PCR- Multiplex, nested PCR, RT-PCR.