

CERTIFICATE COURSE IN LAB TECHNICIAN

Purpose of Program

Rapture Biotech is designed a one month Lab technician program to prepare trained Laboratory technicians under qualified supervisors, to perform different laboratory procedures. After completing this program, candidates can assist in different labs to isolating DNA samples, centrifuging, making slides using specified stains, autoclaving, handling instruments like PCR, spectrophotometer, electrophoretic unit, soxhlet apparatus and other common laboratory equipment's. They have also many scopes available in molecular diagnostics, molecular biotechnology companies and in vitro fertilization laboratories as well as in central research labs.

Overview of Courses

Module 1: Basics of lab techniques

Good Laboratory Practices, A brief introduction to major central laboratories and biotech companies (National & International). Introduction and General principles of Electrophoresis: Types of Electrophoresis, Applications, Separation of Sample Proteins by Agarose Gel Electrophoresis, Chromatography Techniques: Description of basic principle, operation and applications, Microscope : Fundamentals of Microscopy, Resolution & Magnification, Use and care of microscope, Glassware : Description of Glassware and its use, handling of Incubator, Hot Air Oven, Water Bath , Centrifuge, Autoclave, UV Trans illuminator etc.

Module 2: Biochemical calculations

Normal solution, Molar solution, molal solution, osmolar solution, standard solution (Primary & Secondary), ionic strength of solution: Acid, Base, Buffer. Principles of spectrophotometer, Methods of measuring liquids, Clinical Laboratory records, Modern Laboratory set up, Basics of quality control methods and Laboratory accreditation. Biosafety measures, norms (Both National & International) and disposal of laboratory waste. Clinical Enzymology (Definition of enzyme, classification with examples, types of enzyme-substrate reactions, assay of enzymes. End point & Kinetic, clinical importance of enzymes.), Basic concept of laboratory statistics.

Module 3: Microbial Techniques

Sterilization Techniques, Isolation of bacteria and fungus from different sources (air, soil and water) through different spreading and streaking methods. Identification of bacteria through different parameters: Gram's staining, Special staining methods – capsule, endospore, acid fast and different biochemical testing (catalase, urease, MRVP, amylase, citrate, different carbohydrate utilization, protease etc.). Disinfection practices in laboratory, Antibiotic sensitivity assay, MIC determination techniques.