## PROGRAMME CONTENTS/ SYLLABUS OF THE COURSE

**MANAGEMENT DEVELOPMENT PROGRAM ON**

**OPERATION, MAINTENANCE AND CALIBRATION OF BIOMEDICAL EQUIPMENT**

**Introductory**

* Activity of CSIR-Central Scientific Instruments Organisation (CSIO)
* Importance of Operation, Maintenance & Calibration of Biomedical Equipment in Health Sector
* Sensors & Transducers used in Biomedical Instruments
* Electronic/SMD & Optical Components used in Bio-medical Equipment
* Fabrication and Testing of Electronic Components

**Maintenance Management & Safety Aspects**

* Maintenance Management of Bio-Medical Equipment
* Test, Measuring & Calibrating Equipment Used for Preventive Maintenance & Calibration of Bio-Medical Equipment
* Safety Aspects in Bio-Medical Instrumentation and Diagnostic Radiology
* Calibration Procedures in Medical Instrumentation as per ISO/IEC 17025 Standards

**Bio-Medical Instrumentation**

* Colorimeters
* Spectrophotometers (UV-VIS, IR)
* Chemistry Analyser
* Blood Cell Counters
* Centrifuges
* Incubators
* Flame Photometer
* Nebuliser
* Electro-cardiograms
* Multi Para Monitors
* Defibrillator Monitor
* Pulse Oximeter
* Autoclaves
* Sterilizers
* Blood Gas Analyser
* Surgical Diathermy
* Infusion Devices
* Endoscopy
* Ventilators
* Dental Chair

**Optical Instrumentation for Bio-Medical Applications**

* Microscopes (Research & Operating)
* Laser based Instruments

**Medical Imaging Equipment**

* X-ray Imaging & Fluoroscopy
* Ultrasonic Imaging
* CT Scanning
* MR Imaging

**Neurological Equipment**

* Generation and Measurement of Neuro-Signals
* E.M.G
* E.E.G

**Cardiac Care Instrumentation**

* Generation and Measurements of Cardiological Signals
* Principals of Physiological Monitoring
* E.C.G machines
* Multipara Monitors
* Pacemakers
* Defibrillators

**Physiotherapy Equipment**