

## **BASIC MICROBIOLOGICAL TECHNIQUES**

**Course code: 011001**

**Days: 10**

**Module code: MICRO-01**

**Hours: 30**

### **Objective:**

After getting training in this module a person can handle the testing's in a pharmaceutical industries

### **TOPICS:**

- ❖ Introduction and safety aspects of microbiology lab
- ❖ Instructions and handling of microbiology equipments & tools such as
  - ★ Autoclave
  - ★ LAF
  - ★ Hot air oven
  - ★ Microscope
  - ★ Incubator
  - ★ BOD incubator
  - ★ Balance
  - ★ pH meter
  - ★ UV-VIS spectrophotometer
  - ★ Zone reader
  - ★ Colony counter
  - ★ Shaker with incubator
  - ★ Micropipette
  - ★ Membrane filtration
- ❖ Sterilization techniques
  - ★ Moist heat
  - ★ Dry heat
  - ★ Chemical
- ❖ Microbial culture media and its importance
- ❖ Isolation of microorganisms from soil, Air and water
  - ★ Soil – Serial dilution Method
  - ★ Air- Viable plate count method
  - ★ Water – Pour plate method
- ❖ Plating techniques
  - ★ Pour plate
  - ★ Spread plate
  - ★ Streak plate
- ❖ Streaking methods
  - ★ Quadrant
  - ★ Simple
  - ★ T- streak
- ❖ Pure culture preparation
  - ★ Sub culturing of microbes in solid and liquid media
- ❖ Screening of desired organism
  - ★ Morphological behavior of microbes
  - ★ Staining techniques
    - ▲ Simple staining
    - ▲ Gram's staining
- ★ Identification by Biochemical test

▲ IMViC

Production of secondary metabolites

❖ Antibiotic sensitivity assay

★ Liquid study-UV method  
diffusion

Disc diffusion

Well