DEPARTMENT OF MICROBIOLOGY

SMICVAC01– Advanced Techniques in Clinical Microbiology

Learning Objectives

To learn the basic and advanced techniques in clinical Laboratory.

Course Outcomes

At the end of this course, students will be able to,

- Understand laboratory safety methods.
- Understand pathological analysis of clinical specimens.
- Gain knowledge about automated techniques in Clinical Laboratory Technology.

Unit I Laboratory Safety

Organization of laboratory and safety precautions in laboratory – Personal hygiene and care – General health care – Vaccination Schedule for technicians – Laboratory care and cautions – Do's and Dont's – lab accidents – Cuts and wounds – Fire Accidents (Chemical Gas, Flammable Chemicals, Electrical , Spirit Lamp, Gas) – Chemical burns.

Unit II Sample Analysis

Sample collection, processing, preservation and transportation of various clinical pathology samples. Pathological Analysis of clinical specimens.

Unit III Microscopic Analysis

Microscopic analysis of clinical specimens – Urine, Stool, Sputum, Pus, Blood, CSF and other body fluids.

Unit IV Culture Methods

Culture methods – Culturing and isolation of pathogens from clinical specimens. Culture media – General purpose media – special media – selective media – differential media – transport media.

Unit V Advanced Techniques & Automation

ELISA – PCR- Fluorescence Microscopy – Automated culture systems – automated Blood culture – Automated Urine culture – Automated Antibiotic Sensitivity testing.

Text Books:

Anantha narayanan. R. and Paniker C.K.J. Text Book of Microbiology, 9th Edition Orient Longman, (2013).

Chakraborthy, A Text Book of Microbiology 3rd Edn, New Central book Agency (P) Ltd, Kolkata, India 2005.

James cappuccino, Natalie Sherman. (2004) Microbiology A Laboratory manual. 7th Edition.

Praful Godkar, Darsan, 2014. Text book of Medical Laboratory Technology Vol I & II, Bhalani Publishing House.