

SKILL ENHANCEMENT COURSES

SYLLABUS FOR THE

SUBJECT: MICROBIOLOGY

for the award of the Degree in

BACHELOR OF ARTS/ BACHELOR OF SCIENCE

(Offered under 3-year UG Degree Programme)

(Credit Based Grading System)
under NEP 2020

Batch: 2025–28



GURU NANAK DEV UNIVERSITY AMRITSAR

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SCHEME**SKILL ENHANCEMENT COURSE****MICROBIOLOGY****SEC-I**

Sr. No.	Course Code	Course Title	Credits L-T-P	Marks
1.		BASIC TECHNIQUES IN MICROBIOLOGY (THEORY)	2-0-0	50
2.		BASIC TECHNIQUES IN MICROBIOLOGY (PRACTICAL)	0-0-1	25

MICROBIOLOGY
SKILL ENHANCEMENT COURSE
(SEC-I)
BASIC TECHNIQUES IN MICROBIOLOGY
(THEORY)

Time : 3 Hours

Credits : L-T-P
2-0-0
Marks : 50

Instructions for the Paper Setters: -

Eight questions of equal marks (specified in the syllabus) are to be set, two in each of the four sections (A-D). Questions may be sub divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

Learning Outcomes: The course content will familiarize the students with various tools and techniques of microbiology. The students will gain knowledge about various methods of sterilization, isolating and culturing microorganisms. The skills acquired will be beneficial to them for gaining entry in clinical labs, pharmaceutical, food industries etc.

SECTION-A

General account of instruments used in Microbiology techniques: Basic principles and working of Light Microscope, autoclave, laminar flow, incubator.

SECTION-B

Maintenance of aseptic conditions: Sterilization of growth medium and glassware by physical methods (high temperature, low temperature, filtration and UV rays) and Chemical methods : Phenols and phenolic compounds, alcohol

SECTION-C

Culturing of microorganisms: media preparation for bacterial and fungal cultures, isolation techniques (serial dilution, pour plating, spreading, streaking), Incubation conditions (temperature, oxygen availability)

SECTION-D

Growth curve , measurement of growth (biomass determination, Direct Microscopic Count, Plate count), Staining techniques: Gram staining, simple staining, negative.

MICROBIOLOGY
SKILL ENHANCEMENT COURSES
(SEC-I)
BASIC TECHNIQUES IN MICROBIOLOGY
(PRACTICAL)

Credits : L-T-P
0-0-1
Marks : 25

1. To study the working of different instruments used in microbiology (autoclave, laminar air flow, incubator, pH meter etc.)
2. To prepare different culture media
3. To study different methods of sterilization
4. To study various culture techniques such as spreading, streaking and pouring techniques
5. To perform staining (Gram staining, simple staining)