Sl. No	SEMINAR TITLE
1	MODULE 1: CELL BASIC UNIT OF LIFE Introduction.
2	Structure and functions of a cell.
3	Stem cells and their application.
4	Biomolecules: Properties and functions of Carbohydrates,
5	Properties and functions of Nucleic acids.
6	Properties and functions of proteins, lipids.
7	Importance of special biomolecules: Properties and functions of enzymes
8	Importance of special biomolecules: Properties and functions of vitamins and hormones.
9	MODULE 2 - APPLICATION OF BIOMOLECULES: Carbohydrates in cellulose-based water filters production
10	PHA and PLA in bioplastics production
11	Nucleic acids in vaccines and diagnosis
12	Proteins in food production
13	lipids in biodiesel and detergents production
14	Enzymes in biosensors fabrication
15	food processing, detergent formulation and textile processing
16	MODULE 3 - ADAPTATION OF ANATOMICAL PRINCIPLES FOR BIOENGINEERING DESIGN : Brain as a CPU system
17	Eye as a Camera system
18	Heart as a pump system
19	Lungs as purification system
20	Kidney as a filtration system.
21	MODULE 4- NATURE-BIOINSPIRED MATERIALS AND MECHANISMS: Echolocation
22	Photosynthesis
23	Bird flying
24	Lotus leaf effect
25	Plant burrs
26	Shark skin
27	Kingfisher beak.
28	Human Blood substitutes - hemoglobin-based oxygen carriers (HBOCs) and perflourocarbons (PFCs).

29	MODULE 5- TRENDS IN BIOENGINEERING: Muscular and Skeletal Systems as scaffolds
30	scaffolds and tissue engineering
31	Bioprinting techniques and materials
32	Electrical tongue and electrical nose in food science
33	DNA origami and Biocomputing
34	Bioimaging and Artificial Intelligence for disease diagnosis
35	Bioconcrete
36	Bioremediation
37	Biomining