Details of course:-

Course Title	Course Structure			Pre-Requisite
	L	T	P	
Current topics in Biotechnology (BT319)	3	0/1	0	NIL

Course Objectives: To make the students aware of the thrust research areas in Biotechnology

Course Outcomes:

1. Classify stem cell research based on its characteristics, types and application.
2. Explain the different types of nuclear and molecular medicines.
3. Outline emerging field of nanotechnology and its applications.
4. Identify the type of GMO's their production and their current status.
5. Apprehend the applicability of biotechnology in Pharmacogenetics and translational research

S. No.	Contents	Contact Hours
1	**Stem cell research:** Stem cell: characteristics, types, preparation, applications, ethical concerns; Therapeutic and reproductive cloning; Regenerative medicine; Functional tissue engineering	**8**
2	**Molecular and Nuclear medicine:** Gene mutations; SNPs; Allele specific oligonucleotides; ARMS-PCR; Disease diagnostics using genetic markers; Molecular targeting of cancer cells; Radiotracers; PET/CT; MRI	**8**
3	**Nanobiotechnology:** Concepts; Applications; Molecular machines for biotechnology and medicine	**9**
4	**Transgenic technology:** Genetically modified organisms (GMOs); Legal requirements in the production of GMOs; Case study: Bt cotton; Current trends and consumer acceptance	**9**
5	**Pharmacogenetics and translational research:** Drug responses; Adverse drug reactions; Role in drug discovery and drug development; Conventional medicine versus personalized medicine; Clinical trial formulations; Advances in translational research	**8**
	Total	**42**

Books: -

S. No.	Name of Authors / Books / Publishers