Faculty of Pharmacy
Program: B. Pharm.

Syllabus | Semester: 5
Course code with name: 13PH0505 Pharmaceutical Biotechnology

Scope: Biotechnology has a long promise to revolutionize the biological sciences and technology. Scientific application of biotechnology in the field of genetic engineering, medicine and fermentation technology makes the subject interesting. Biotechnology is leading to new biological revolutions in diagnosis, prevention and cure of diseases, new and cheaper pharmaceutical drugs. Biotechnology has already produced transgenic crops and animals and the future promises lot more. It is basically a research-based subject.

Objectives: Upon completion of the course the student shall be able to
1. Understanding the importance of Immobilized enzymes in Pharmaceutical Industries.
2. Genetic engineering applications in relation to production of pharmaceuticals.
3. Importance of Monoclonal antibodies in Industries.
4. Appreciate the use of microorganisms in fermentation technology.

Teaching and examination scheme:

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<th>Teaching scheme (Hours/week)</th>
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Theory syllabus:

Unit-1

Unit-2

Unit-3

Unit-4
8 Hours

w.e.f. academic year (AY) 2020-21 and onwards
a) Immuno blotting techniques- ELISA, Western blotting, Southern blotting. b) Genetic organization of Eukaryotes and Prokaryotes. c) Microbial genetics including transformation, transduction, conjugation, plasmids and transposons. d) Introduction to Microbial biotransformation and applications. e) Mutation: Types of mutation/mutants.

**Unit-5**

7 Hours

a) Fermentation methods and general requirements, study of media, equipments, sterilization methods, aeration process, stirring. b) Large scale production fermenter design and its various controls. c) Study of the production of - penicillins, citric acid, Vitamin B12, Glutamic acid, Griseofulvin. d) Blood Products: Collection, Processing and Storage of whole human blood, dried human plasma, plasma Substitutes.

Tutorials will be based on above syllabus.  

Teaching hours: 15 Hours

**Recommended Books (Latest edition):**

2. RA Goldshy et. al., : Kuby Immunology.