Pharmacoinformatics

Semester No 7-**8**	**Code BI-424**	**Credit Hours 3-0**

Course description:

Pharmacoinformatics is a specialized degree that builds upon the reputation of the School of Pharmacy. For over 175 years, the School of Pharmacy has been advancing scientific knowledge. Students who complete this degree can enter a few of exciting and rewarding careers, including research, operations, and management. Here are the benefits of this program. You'll have a better understanding of drug development and biopharmaceuticals. This course is to provide basic training of bioinformatics tools application in drug discovery and development process. It presents the student with emerging strategies and tools of computer aided drug design.

Recommended Books:

1. *Benfenati, E. (Ed.). (2016). In silico methods for predicting drug toxicity. Humana Press.*
2. *Kenakin, T. (2016). Pharmacology in Drug Discovery and Development: Understanding Drug Re- sponse. Academic Press.*
3. *Kenakin, T. P. (2017). Pharmacology in drug discovery and development.*

Prerequisite:

1. Proteomics

Course Learning Outcomes:

After completing this course, students will understand the application of bioinformatics tools in the drug discovery and development process. They will acquire additional skills in Pharmacoinformatics for workforce required in pharma industries, vaccine development, clinical research projects, research, etc. This course will add skills to the students for designing novel drugs for the treatment of untreatable diseases.

Assessment system:

Quizzes	10-15%
Assignments	5-10%
MSE	30-40%
ESE	40-50%

Week wise Lecture Plan:

Week	Lecture Topic	Quizzes	Assignments
1	General Pharmacology		
2			
3	Overview of Bioinformatics and Information Technology	1	1
4	Pharmacophore Kinetics		
5	Drug Discovery and Development		
6			
7	Bioinformatics in Pharmacology	2	2
8			
9	**MIDTERMS**		
10	Structure representation systems		3
11			
12	Chemical Databases	3	
13			
14	Modeling of small molecules		4
15			
16	Principles of Chemo-informatics	4	
17			
18	**END SEMESTER EXAMINATION**		