**Curriculum Plan (Odd Semester 2022-23)**

Teacher Name: **Dr. Renu Bala**

Course: **B.Sc. Life Sciences, II year, Sem III**

Paper Name: **Pharmaceutical Chemistry** **(SEC)**

UPC: **32173909**

Month: **August’22 to December’22**

|  |  |  |  |
| --- | --- | --- | --- |
| **Contents** | **Allocation of Lectures** | **Month wise schedule to be followed** | **Assignments/ Presentations/ Preparation in Lab etc.** |
| **Unit 1*** Introduction
* Drug discovery, design and development
* Sources of drugs: biological, marine, minerals and plant tissue culture
* physio-chemical aspects (optical, geometric and bioisosterism) of drug molecules and biological action,
* drug receptor interaction, basic retro-synthetic approach for development of drug.
* Cause of side effect of drugs like ibuprofen, cetirizine, thalidomide.
* Difference between drug and poison.
 | Hands on Exercise: 60 lectures | Fourth week of August to September | Syllabus OverviewClass discussion Presentations |
| **Unit 2:*** Drugs and Pharmaceuticals
* Study of pharmaceutical aids like talc, diatomite, kaolin, bentomite, gelatin and natural colours
* Synthesis of the representative drugs of the following classes:
	+ analgesics agents,
	+ antipyretic agents,
	+ anti-inflammatory agents (Aspirin);
	+ antibacterial and antifungal agents (Sulphonamides; Sulphanethoxazol, Sulphacetamide, Trimethoprim)
 | First week of October to Second week of October | Assignments allotment Presentations |
| **Unit 2 (Continued):*** Synthesis of the representative drugs of the following classes:
	+ antiviral agents (Acyclovir),
	+ central nervous system agents (Phenobarbital Diazepam),
	+ Cardiovascular (Glyceryl trinitrate),
	+ antilaprosy (Dapsone),
	+ HIV-AIDS related drugs (AZT- Zidovudine).
 | Third week of October to fourth week of October | Presentation and discussion |
| **Unit 3:** * Fermentation Aerobic and anaerobic fermentation.
* Production of (i) Ethyl alcohol and citric acid, (ii)Antibiotics; Penicillin, Cephalosporin, Chloromycetin and Streptomycin,
 | First week of November to third week of November | Class test |
|  **Unit 3 (Continued)** * Production of

(iii) Lysine, Glutamic acid, (iv) Vitamin B2, Vitamin B12 and Vitamin C. | Fourth week of November to first week of December | Previous year question paper and discussion |

**Dr. Renu Bala, Department of Chemistry**