Dayananda Sagar University
College of Pharmaceutical Sciences

Course Outcomes – M.Pharm Pharmacology

1st Sem M. Pharm (Pharmacology)

Sl No	Subject Code	Subject Name	Course Outcomes
1	17MPL101	Modern Pharmaceutical Analytical Techniques	**Upon completion of this course, the students will be able to –** 1. Measure and estimate the amount of drug present in the sample by UV, IR, Fluorimetry and Flame Photometry and describe the components of analytical instruments. 2. Apply the concepts of NMR and interpret the compound to elucidate the structure. 3. Describe the various types of Ionization techniques, Mass analyzers and interpret the compound by Mass spectrometry. 4. Demonstrate the chromatographic method to separate and identify the mixture of compounds. 5. Describe the types of Electrophoresis & Potentiometric titrations and apply the concepts of X-ray diffraction and Thermal methods.
2	17MPL102	Advanced Pharmacology– I	**Upon completion of this course, the students will be able to -** 1. Appreciate the basic knowledge in the field of pharmacology apply to the drugs and its therapeutic solicitations 2. Highlight the pathophysiology and pharmacotherapy of certain diseases 3. Value the mechanism at the cellular and molecular level.

			4. Recognize the negative effects, contraindications, and clinical applications of medications used to treat disorders. 5. Analyse the detrimental consequences, contraindications, and medical applications of medications used to treat disorders.
3	17MPL103	Pharmacological and Toxicological Screening Methods – I	**Upon completion of the course, the student shall be able to –** 1. Justify the regulations and ethical requirements for the usage of experimental animals. 2. Illustrate the various animals used in the drug discovery process and good laboratory practices in maintenance and handling of experimental animals 3. Evaluate various in-vitro and in-vivo preclinical evaluation processes 4. Review the various newer screening methods involved in the drug discovery process 5. Interpret and correlate the preclinical data to humans
4	17MPL104	Cellular & Molecular Pharmacology – I	**Upon completion of the course, the student shall be able to –** 1. Underline various cellular events, functions, pathways and transduction mechanisms and how a gene is expressed. 2. State cell signaling pathways based on receptors and second messengers in the cell. 3. Illustrate Principles and applications of genomic, proteomic tools, gene therapy and rDNA technology. 4. Name immunotherapeutic and application of omics in clinical practice. **5.** Relate principles and applications of various assays,

			biosimilars, and cell culture techniques, application of flow cytometry.

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2nd Sem M. Pharm (Pharmacology)

Sl No	Subject Code	Subject Name	Course Outcomes
1	17MPL201	Advanced Pharmacology – II	**Upon completion of this course, the students will be able to –** 1. Predict the mechanism of drug actions at cellular and molecular level 2. Reproduce the Pathophysiology and pharmacotherapy of certain diseases 3. Outline the adverse effects, contraindications and clinical uses of drugs used in treatment of diseases 4. Elaborate the recent advances of drugs used in the treatment of various diseases. 5 Relate the concept of free radicals and antioxidants and their role in various disorders
2	17MPL202	Pharmacological & Toxicological Screening methods – II	**Upon completion of this course, the students will be able to -** 1. List the various types of toxicity studies. 2. Appreciate the importance of ethical and regulatory requirements for toxicity studies. 3. Demonstrate the practical skills required to conduct the preclinical toxicity studies.
3	17MPL203	Principles of Drug Discovery	**Upon completion of the course, the student shall be able to –** 1. Outline the various stages of drug discovery. 2. Appreciate the importance of the role of genomics, proteomics and bioinformatics in drug discovery 3. Demonstrate various targets for drug discovery. 4. Apply various lead seeking method and lead

			optimization 5. Appreciate the importance of the role of computer aided drug design in drug discovery
4	17MPL204	Clinical Research & Pharmacovigilance	**Upon completion of the course, the student shall be able to –** 1. Outline the regulatory requirements for conducting clinical trial 2. Demonstrate the types of clinical trial designs 3. List the responsibilities of key players involved in clinical trials 4. Execute safety monitoring, reporting and close-out activities 5. Compile the principles of Pharmacovigilance 6. Detect new adverse drug reactions and their assessment 7. Perform the adverse drug reaction reporting systems and communication in Pharmacovigilance