(PO): Programme Outcomes of the Department of Pharmaceutical Sciences

Department of Pharmaceutical Sciences currently offers:
- A two year, master in Pharmacy (M.Pharm) degree program in Pharmaceutics
- A two year, master in Pharmacy (M.Pharm) degree program in Pharmacology
- A Ph.D. degree in Pharmaceutical Sciences

The Department of Pharmaceutical Sciences (DPS) offers students two degree tracks: M. Pharm and PhD. Upon post graduation, the Ph.D. degree will provide them knowledge and tools necessary to become independent researchers, and also the passion and enthusiasm to make impactful contributions to the pharmaceutical sciences field through their career.

Master of Pharmacy (M.Pharm) in Pharmaceutics

M.Pharm. in Pharmaceutics is a 2-year, year dissertation-based program for students who are engrossed in development and formulation of new drugs and therapies. The Master of Pharmacy in Pharmaceutics includes research related to drug delivery, molecular pharmaceutics, nanoformulations and the regulatory affairs pertaining to the pharmaceutical industry. This program has a structure to sustain the students in the field of academia, pharmaceutical industry and also to opt for higher education. This postgraduate course will provide the experimental skills, knowledge, logical thinking to conduct and interpret the experimental data of pharmaceutical experiments.

Master of Pharmacy (M.Pharm) in Pharmacology

M.Pharm. in Pharmacology is a 2-year, year dissertation-based program for students who are interested to study the fundamental principles of pharmacology, mechanisms of drug action and current topics in drug discovery. Students will be trained in basic biochemical, cellular and molecular techniques. This program prepares student lifelong expert with the knowledge in pharmacological and toxicological research, in pharmaceutical and biotechnology industries as well as in research laboratories.

Doctor of Philosophy (Ph.D.) in Pharmaceutical Sciences

This program provides Ph.D. in the Pharmaceutical Sciences Pharmacology and Pharmaceutics. It is aimed at students with M.Pharm or M.S.(Pharm) Degrees. Studies conclude with the award of a Doctor of Philosophy (Ph.D.) in Pharmaceutical Sciences, with an emphasis on research in formulations development and their pharmacological activities in metabolic disorders, rheumatoid arthritis and cancer as well as other diseases. Students are trained for excellent positions in academia, research, education, government, and pharmaceutical industry. The Ph.D. program is intended to foster student development as critical thinkers, skilled researchers and honed for leadership roles.

(CO) Course Outcomes:

DRUG DELIVERY SYSTEMS (MPH102T): This course will provide the knowledge on the area of advances in novel drug delivery systems. Student shall be able to understand the various approaches for development of novel drug delivery systems, criteria for selection of drugs and polymers for the development of formulation and evaluation.

MODERN PHARMACEUTICS (MPH 103T): **This** course is designed to impart advanced knowledge and skills required to learn various aspects and concepts at pharmaceutical industries. Student shall be able to understand the elements of preformulation studies and Generic drug. They will also gain the knowledge about the product development, industrial management and packaging of dosage forms.

REGULATORY AFFAIRS (MPH 104T): Students will gain the advance knowledge and skills required to learn the concept of generic drug and their development, various regulatory filings in different countries, different phases of clinical trials and submitting regulatory documents.

MOLECULAR PHARMACEUTICS (NANO TECHNOLOGY & TARGETED DDS) (NTDS) (MPH 201T): Student shall be able to understand the advances in novel drug delivery. It would also help them to know what are the selection criteria for drugs and polymers in development of NTDS systems.

ADVANCED BIOPHARMACEUTICS & PHARMACOKINETICS (MPH 202T): Students shall be gain the knowledge and skills necessary for dose calculations, dose adjustments and to apply biopharmaceutics theories in practical problem solving.

COMPUTER AIDED DRUG DELIVERY SYSTEMS (MPH 203T): Student shall be able to learn the knowledge and skills necessary for computer applications in entire drug research and development process. This course would also help them to clarify the concepts.

COSMETICS AND COSMECEUTICALS (MPH 204T): This course is designed to impart knowledge and skills necessary forth fundamental need for cosmetic and cosmeceutical products. Students shall be able to understand the key ingredients used in cosmetics and cosmeceuticals, current technologies in the market.

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUE (MPL and MPH101T): Student shall be able to learn the various advanced analytical instrumental techniques for identification, characterization and quantification of drugs.

ADVANCED PHARMACOLOGY - I (MPL 102T): Students shall be gain the basic knowledge in the field of pharmacology and to impart recent advances in the drugs used for the treatment of various diseases. In addition, it will help the students to understand the concepts of drug action and mechanisms involved.

PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING METHODS - 1 (MPL 103T): Students will gain the knowledge on preclinical evaluation of drugs and recent experimental

techniques and models used in the drug discovery and development. It also provides basic to understand the maintenance of laboratory animals as per the guidelines, various in-vitro and in-vivo preclinical evaluation processes.

CELLULAR AND MOLECULAR PHARMACOLOGY (MPL 104T): Students will expand the fundamental knowledge on the structure and functions of cellular components and it will further help the student to apply the knowledge in drug discovery process.

ADVANCED PHARMACOLOGY - II (MPL 201T): Students will understand the mechanism of drug actions at cellular and molecular level including the adverse effects, contraindications and clinical uses of drugs used in treatment of diseases.

PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING METHODS-II (MPL 202T): This subject imparts knowledge on the preclinical safety and toxicological evaluation of drug & new chemical entity. This knowledge will make the student competent in regulatory toxicological evaluation

PRINCIPLES OF DRUG DISCOVERY (MPL 203T): The students will learn basic knowledge of drug discovery process. This information will make the student competent in drug discovery process.

CLINICAL RESEARCH AND PHARMACOVIGILANCE (MPL 204T): This course will provide a value addition and current requirement for the students in clinical research and pharmacovigilance. It will teach the students on conceptualizing, designing, conducting, managing and reporting of clinical trials.

MPL-301T& MPH – 301T (RESEARCH METHODOLOGY AND BIOSTATISTICS): Students will learn the fundamental methodology to carry out experimental design and research. They will also learn the different statistical methods to interpret the experimental data.

Program Specific Outcomes (PSOs):

1. Our Post Graduate and Doctoral scholars would be compassionate, skilled, and ethical professionals and researchers committed to the cause of health and wellness.
2. Capable of new knowledge and mechanistic approach to the effects of chemical and biological entities and innovative formulations as applied to human health, while displaying leadership and professionalism.