COURSE OUTCOMES

M.Pharmacy

PHARMACEUTICS (MPH)

Semester-1

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES (MPH 101T)

After completion of course student is able to know, Chemicals and Excipients, The analysis of various drugs in single and combination dosage forms and Theoretical and practical skills of the instruments

DRUG DELIVERY SYSTEMS (MPH 102T)

Upon completion of the course, student shall be able to understand the various approaches for development of novel drug delivery systems. The criteria for selection of drugs and polymers for the development of delivering system and The formulation and evaluation of Novel drug delivery systems.

MODERN PHARMACEUTICS (MPH 103T)

Upon completion of the course, student shall be able to understand the elements of preformulation studies. The Active Pharmaceutical Ingredients and Generic drug Product Development Industrial Management and GMP Considerations. Optimization Techniques & Pilot Plant Scale up Techniques and Stability Testing, sterilization process & packaging of dosage forms.

REGULATORY AFFAIRS (MPH 104T)

Course designed to impart advanced 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: filing process of IND, NDA and ANDA and To know the chemistry, manufacturing controls and their regulatory importance To learn the documentation requirements and To learn the importance of RA

PHARMACEUTICS PRACTICALS – 1(MPH 105P)

Understand formulation and evaluation of Pharmaceutical solution and to understand formulation and evaluation of Pharmaceutical dispersed system, Understand formulation and evaluation of pharmaceutical powders, Understand formulation and evaluation of semisolid Dosage form.

Semester 2

MOLECULAR PHARMACEUTICS (NANO TECHNOLOGY & TARGETED DDS) (NTDS) (MPH 201T)

This course is designed to impart knowledge on the area of advances in novel Drug delivery systems. Able to understand the various approaches for development of novel drug delivery systems. The criteria for selection of drugs and polymers for the development of NTDS the formulation and evaluation of novel drug delivery systems.

ADVANCED BIOPHARMACEUTICS & PHARMACOKINETICS (MPH 202T)

This course is designed to impart knowledge and skills necessary for dose Calculations, dose adjustments and to apply biopharmaceutics theories in practical problem solving. Basic theoretical discussions of the principles of biopharmaceutics and pharmacokinetics are provided to help the students' to clarify the concepts. Upon completion of this course it is expected that students will be able understand,

The basic concepts in biopharmaceutics and pharmacokinetics.

The use raw data and derive the pharmacokinetic models and

Parameters the best describe the process of drug absorption, Distribution, metabolism and elimination.

The critical evaluation of biopharmaceutic studies involving drug Product equivalency.

The design and evaluation of dosage regimens of the drugs using Pharmacokinetic and biopharmaceutic parameters.

The potential clinical pharmacokinetic problems and application of Basics of pharmacokinetic

COMPUTER AIDED DRUG DEVELOPMENT (MPH 203T)

This course is designed to impart knowledge and skills necessary for computer Applications in pharmaceutical research and development who want to understand the application of computers across the entire drug research and development process. Basic theoretical discussions of the principles of more integrated and coherent use of computerized information (informatics) in the Drug development process are provided to help the students to clarify the concepts. Upon completion of this course it is expected that students will be able to understand,

History of Computers in Pharmaceutical Research and Development
Computational Modeling of Drug Disposition
Computers in Preclinical Development
Optimization Techniques in Pharmaceutical Formulation
Computers in Market Analysis
Computers in Clinical Development
Artificial Intelligence (AI) and Robotics
Computational fluid dynamics (CFD)

COSMETICS AND COSMECEUTICALS (MPH 204T)

This course is designed to impart knowledge and skills necessary for the fundamental need for cosmetic and cosmeceutical products.

PHARMACEUTICS PRACTICALS – II (MPH 205P)

Understand formulation and evaluation of NDDS
Understand formulation and evaluation of Pharmaceutical dispersed system
Understand formulation and evaluation of pharmaceutical powders
Understand formulation and evaluation of semisolid dosage form

INDUSTRIALPHARMACY (MIP)

SEMESTER 1

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES (MIP 101T)

This subject deals with various advanced analytical instrumental techniques for identification, characterization and quantification of drugs. Instruments dealt areNMR, Mass spectrometer, IR, HPLC, GC etc. After completion of course student is able to know,

The analysis of various drugs in single and combination dosage forms, Theoretical and practical skills of the instruments

PHARMACEUTICAL FORMULATION DEVELOPMENT (MIP 102T)

This course is designed to impart knowledge and skills necessary to train the students on par with the routine of Industrial activities in R&D and F&D.

NOVEL DRUG DELIVERY SYSTEMS (MIP 103T)

This course is designed to impart knowledge and skills necessary to train the students in the area of novel drug delivery systems. On completion of this course it is expected that students will be able to understand,

The need, concept, design and evaluation of various customized, sustained and controlled release dosage forms.

To formulate and evaluate various novel drug delivery systems

INTELLECTUAL PROPERTY RIGHTS (MIP 104T)

This course is designed to impart knowledge and skills necessary to train the students to be on par with the routine of Industrial activities in drug regulatory affairs

INDUSTRIAL PHARMACY PRACTICAL – I (MIP 105P)

Able to perform preformulation studies of tablets and capsule Understand the knowledge to formulate, evaluate and label of tablets and capsules, Prepare labels to suit regulatory requirements. Able to conduct the survey and report its finding.

SEMESTER II

ADVANCED BIOPHARMACEUTICS & PHARMACOKINETICS (MIP 201T)

This course is designed to impart knowledge and skills necessary for dose calculations, dose adjustments and to apply Biopharmaceutics theories in practical problem solving.

SCALE UP AND TECHNOLOGY TRANSFER (MIP 202T)

This course is designed to impart knowledge and skills necessary to train the students to be on scale up, technology transfer process and industrial safety issues.

PHARMACEUTICAL PRODUCTION TECHNOLOGY (MIP 203T)

This course is designed to impart knowledge and skills necessary to train the students to be on par with the routine of Industrial activities in Production On completion of this course it is expected that students will be able to understand,

Handle the scheduled activities in a Pharmaceutical firm.

Manage the production of large batches of pharmaceutical formulations.

ENTREPRENEURSHIP MANAGEMENT (MIP 204T)

This course is designed to impart knowledge and skills necessary to train the students on entrepreneurship management.

INDUSTRIAL PHARMACY PRACTICAL – II (MIP 205P)

Able to perform preformulation studies of tablets and capsule Understand the knowledge to formulate, evaluate and label of tablets and capsules, Prepare labels to suit regulatory requirements.

PHARMACEUTICAL ANALYSIS (MPA)

SEMESTER 1

MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES (MPA 101T)

This subject deals with various advanced analytical instrumental techniques for identification, characterization and quantification of drugs. Instruments dealt are NMR, Mass spectrometer, IR, HPLC, GC etc.

ADVANCED PHARMACEUTICAL ANALYSIS (MPA 102T)

This subject deals with the various aspects of Impurity, Impurities in new drug products, in residual solvents, Elemental impurities, Impurity profiling and characterization of degradents, Stability testing of phytopharmaceuticals and their protocol preparation. It also covers the biological testing of various vaccines and their principle and procedure.

PHARMACEUTICAL VALIDATION (MPA 103T)

The main purpose of the subject is to understand about validation and how it can be applied to industry and thus to improve the quality of the products. The subject covers the complete information about validation, types, methodology and application.

FOOD ANALYSIS (MPA 104T)

This course is designed to impart knowledge on analysis of food constituents and finished food products. The course includes application of instrumental analysis in the determination of pesticides in variety of food products.

PHARMACEUTICAL ANALYSIS PRACTICALS – II (MPA 105P)

To learn appropriate safety measures while handling sophisticated instruments. Understanding validation of analytical methods as per as per USP or ICH guidelines using sophisticated instrument. Understanding system suitability parameters as per IP/BP/USP protocol for various HPLC methods. To study concept of structure elucidation using various analytical instruments as UV, IR, NMR, MS spectrophotometer

SEMESTER II

ADVANCED INSTRUMENTAL ANALYSIS (MPA 201T)

This subject deals with various hyphenated analytical instrumental techniques for identification, characterization and quantification of drugs. Instruments dealt are LC-MS, GC-MS, and hyphenated techniques

MODERN BIO-ANALYTICAL TECHNIQUES (MPA 202T)

This subject is designed to provide detailed knowledge about the importance of analysis of drugs in biological matrices.

QUALITY CONTROL AND QUALITY ASSURANCE (MPA 203T)

This course deals with the various aspects of quality control and quality assurance aspects of pharmaceutical industries. It covers the important aspects like cGMP, QC tests, documentation, quality certifications, GLP and regulatory affairs.

HERBAL AND COSMETIC ANALYSIS (MPA 204T)

This course is designed to impart knowledge on analysis of herbal products. Regulatory requirements, herbal drug interaction with monographs. Performance evaluation of cosmetic products is included for the better understanding of the equipments used in cosmetic industries for the purpose

PHARMACEUTICAL ANALYSIS PRACTICALS – I (MPA 205P)

To learn appropriate safety measures while handling sophisticated instruments. Understanding validation of analytical methods as per as per USP or ICH guidelines using sophisticated instrument. Understanding system suitability parameters as per IP/BP/USP protocol for various HPLC methods. To study concept of structure elucidation using various analytical instruments as UV, IR, NMR, MS spectrophotometer