



Course Outcomes

PQA-MIP101T: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

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

Upon completion of this course the student should be able to understand -

CO 1: The theory and working of sophisticated analytical instruments for quality control of drugs and pharmaceuticals.

CO 2: The analysis of various drugs in single and combination dosage forms.

CO 3: Applications of various analytical techniques for drug analysis.

PCE-MIP102T: PHARMACEUTICAL FORMULATION DEVELOPMENT

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.

Upon completion of this course the student should be able to study -

CO 1: The scheduled activities in a pharmaceutical firm.

CO 2: The pre formulation studies of pilot batches of pharmaceutical industry.

CO 3: The significance of formulation additives, solubility, dissolution and product stability in the formulation development.

PCE-MIP103T: NOVEL DRUG DELIVERY SYSTEMS

This course is designed to impart knowledge and skills necessary in the area of development and evaluation of novel drug delivery systems.

On completion of this course student will be able to -

CO 1: Design a drug delivery system according to the properties of drug, therapeutic use and the intended drug release.

CO 2: Select polymers required for designing novel drug delivery system.

CO 3: Understand the methods to formulate and evaluate various drug delivery systems.

CO 4: Understand the need and types of personalized drug delivery systems.

CO 5: Understand the various mechanisms which can be used to give controlled drug delivery systems

PMA-MIP104T: INTELLECTUAL PROPERTY RIGHTS

This course deals with Intellectual Property Rights with an emphasis on Patents. It also includes Licensing and Technology Transfer.

After completion of this course a student should know -

CO 1: Types of Intellectual Property Rights.

CO 2: Patent searching and drafting a patent.

PCE-MIP 105P: INDUSTRIAL PHARMACY PRACTICAL I

This subject is designed to gain practical skills on formulation and evaluation of various dosage forms, drug delivery systems and cosmetic preparations. This course also provides knowledge on different analytical techniques used for estimation of pharmaceutical active ingredients and their formulations, and stability studies.

Upon completion of this course the student should be able to -

CO 1: Gain knowledge on analytical techniques for estimation of pharmaceutical active ingredients and their formulations.

CO 2: Understand the importance of stability studies and perform the stability studies of formulations.

CO 3: Understand the formulation techniques for various types of tablets and novel drug delivery systems and evaluate them.



PCE-MIP106S: SEMINAR IN INDUSTRIAL PHARMACY

The subject is designed to create an environment where teachers provide the students a critical eye and openness to fortify the presentation and academic writing skills of students in the field of industrial pharmacy and Pharmaceutics.

Upon completion of the course the student shall be able to -

CO 1: Develop skills to gather, organize, deliver information, and defend a given topic in industrial pharmacy and Pharmaceutics.

CO 2: Learn to organize complex concepts using audio-visual aids.

CO 3: Acquire communication and presentation skills.

CO 4: Effectively respond to the questions raised by peers and stand scientific scrutiny.

CO 5: Develop a write-up on the subject of seminar presentation.

CO 6: Cultivate a sense of upgradation of knowledge through self and continuous learning.

PCE-MIP201T: ADVANCED BIOPHARMACEUTICS AND PHARMACOKINETICS

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 the student should be able to understand -

CO 1: The basic concepts in biopharmaceutics and pharmacokinetics.

CO 2: The use of raw data and derive the pharmacokinetic models and parameters that describe the process of drug absorption, distribution, metabolism and excretion.

CO 3: To critically evaluate biopharmaceutics studies involving drug product equivalency.

CO 4: To design and evaluate dosage regimens of the drugs using pharmacokinetic parameters.

CO 5: The potential clinical pharmacokinetic problems and application of basics of pharmacokinetics.

PCE-MIP202T: SCALEUP AND TECHNOLOGY TRANSFER

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.

Upon completion of this course the student should be able to -

CO 1: Manage the scale up process in pharmaceutical industry.

CO 2: Assist in technology transfer.

CO 3: To establish safety guidelines, which prevent industrial hazards.

PCE-MIP203T: PHARMACEUTICAL PRODUCTION TECHNOLOGY

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.

At completion of this course it is expected that the students will be able to -

CO 1: Handle the scheduled activities in a Pharmaceutical firm.

CO 2: Manage the production of large batches of pharmaceutical formulations.



PMA-MIP204T: ENTREPRENEURSHIP MANAGEMENT

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

After completing this course it is expected that student will be able to understand -

- CO 1: The role of an enterprise in a national and global economy.
- CO 2: Dynamics of motivation and concepts of entrepreneurship.
- CO 3: Demands and challenges of Growth Strategies and Networking.

PCE-MIP205P: INDUSTRIAL PHARMACY PRACTICAL II

This subject is designed to provide practical skills on formulation and evaluation of various dosage forms, in vitro studies, bioavailability studies, protein binding concepts, and quality control testing of pharmaceuticals as per pharmacopoeial requirements.

Upon completion of this course the student should be able to -

- CO 1: Gain knowledge on formulation skills and QC testing of various dosage forms.
- CO 2: Understand the importance of critical process parameters and in vitro studies.

PCE-MIP206S: SEMINAR IN INDUSTRIAL PHARMACY

The subject is designed to create an environment where teachers provide the students a critical eye and openness to fortify the presentation and academic writing skills of students in the field of industrial pharmacy and Pharmaceutics.

Upon completion of the course the student shall be able to -

- CO 1: Develop skills to gather, organize, deliver information, and defend a given topic in industrial pharmacy and Pharmaceutics.
- CO 2: Learn to organize complex concepts using audio-visual aids.
- CO 3: Acquire communication and presentation skills.
- CO 4: Effectively respond to the questions raised by peers and stand scientific scrutiny.
- CO 5: Develop a write-up on the subject of seminar presentation.
- CO 6: Cultivate a sense of upgradation of knowledge through self and continuous learning.

PHA-MRM301T: RESEARCH METHODOLOGY AND BIostatISTICS

This subject is designed to understand the advanced knowledge for research methodology, ethics in research, medical research, design, conduct and interpretation of results. This subject deals with principles of statistics and their applications in biostatistics involving parametric tests, non-parametric tests, correlation, regression, probability theory and statistical hypotheses.

Upon completion of the course, the student shall be able to -

- CO 1: Know the various components of research design and methodology.
- CO 2: Appreciate advanced statistical techniques in solving the research problems.

MJC 302P: JOURNAL CLUB IN INDUSTRIAL PHARMACY

The subject is designed to create an environment where students present a published research paper, and critically analyse it, that would enhance the communication, presentation and analytical skills of the students.

Upon completion of the course the student shall be able to:

- CO 1: Learn to organize complex research concepts using audio-visual aids.
- CO 2: Acquire communication and presentation skills.
- CO 3: Effectively respond to the questions raised by peers and stand scientific scrutiny.
- CO 4: Cultivate a sense of upgradation of knowledge through self and continuous learning.