**(2.6.1) Program outcomes, program specific outcomes and course outcomes for all programs offered by the institution are stated and displayed on website and communicated to teachers and students**

**Data Requirement for last five years (Academic years 2024 -2025)**

|  |  |  |
| --- | --- | --- |
| Upload COs for all courses (exemplars from Glossary-Notes) | Department | Upload a description of Mechanism of Communication |
| **Programme Outcomes – B. Pharm**1. **Pharmaceutical Knowledge:-** Students gain a deep knowledge regarding human body, its related diseases, analytical skills, drug molecules (Active Pharmaceutical Ingredients) along with excipients, natural drug resources, chemistry involved in API including synthesis of commonly used drugs, effect of drug on human body, toxicity and impurity profile, ADME studies of drugs (behaviour of drug in human body), dosage form studies including novel approaches, designing and development of formulation stability studies, analysis etc.
2. **Research Analysis:** Students could apply the knowledge in research field to make new discoveries.
3. **Design & Development of dosage forms:** Various dosage forms could be prepared by the a pharmacy students in the pharmaceutical companies for the ease of patients.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern methods usage:** Create, select, and apply appropriate techniques, resources, and modern methods with an understanding of the limitations and its usage. The student also learns to handle many instruments related to their studies which would help them work in a Pharmaceutical Industry, pharmacovigilance, regulatory requirements, legal processes etc.
6. **Pharmacy and society:** Pharmacist provides complete health care data and practices to the people of the society and guides them to be healthy. The student also learns drug distribution system, patient counselling, industrial laws etc. Student gains expertise in storage and distribution of drugs with all precautions and in-depth knowledge of dose, adverse effect and other health related issues to deal with indoor and outdoor patients admitted in hospitals and also in public.
7. **Environment and sustainability:** Understand the impact of the professional pharmacist in society and environment and make an impact of it on the people of the society.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the pharmacy practice. Student is also trained in ethical behaviour with physician, nurses and other paramedical staff for protecting patient’s health.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams acts as a multidisciplinary person in every context.Communicate effectively on pharmaceutical activities with the community and with society.
10. **Life-long learning:** Recognize the need forand have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
11. **Social Interaction:** Being a public welfare job a pharmacist would be able to interact with the people in a better way to cure them and make them feel healthy.
 | Pharmaceutical Sciences | * University website.
* Curriculum books (Academic calendar).
* Notice boards.
* Lesson plans.
* Brochure.
* Student awareness workshops.
* Student orientation programmes.

 |
| **Program Specific Outcomes – B. Pharm**1. Able to apply the knowledge gained during the course of the program from pharmacology, pharmaceutics, medicinal chemistry, Pharmacognosy, APHE, communication skills, pharmaceutical analysis, Biotechnology, biochemistry, cosmetology and environmental studies.
2. Able to apply the knowledge of ethical and management principles required to work in a team as well as to lead a team.
3. Able to do multidisciplinary jobs in the pharmaceutical industries in various branches and would be able to write effective project reports in multidisciplinary environment in the context of changing technologies.
4. Able to communicate easily and comfortably. Would be able to perform multitasks in multi fields including pharmaceutical & cosmetics. Research area would be strong.
 | Pharmaceutical Sciences | * University website.
* Curriculum books (Academic calendar).
* Notice boards.
* Lesson plans.
* Brochure.
* Student awareness workshops.
* Student orientation programmes.
 |
|

|  |
| --- |
| **Course outcomes - B. Pharm** |
| **B. Pharm. 1st Year** |

 |  |  |
| **B.Pharma. 1st Year** |  |  |
| **Human anatomy & Physiology:**This subject is designed to impart fundamental knowledge on the structure and functions of the various systems of the human body. It also helps in understanding both homeostatic mechanisms. The subject provides the basic knowledge required to understand the various disciplines of pharmacy. Practical’s allow the verification of physiological processes discussed in theory classes through experiments on living tissue, intact animals or normal human beings. This is helpful for developing an insight on the subject. | Pharmaceutical Sciences | * University website.
* Curriculum books (Academic calendar).
* Notice boards.
* Lesson plans.
* Brochure.
* Student awareness workshops.
* Student orientation programmes.
 |
| **Mathematics & Biostatics:** This is an introductory course in mathematics. This subject deal with the introduction to Partial fraction, Logarithm, matrices and Determinant, Analytical geometry, Calculus, differential equation and Laplace transform. The students were able to use the knowledge obtained, in further fields of pharmacy like pharmaceutical engineering. | Pharmaceutical Sciences |
| **Pharm. Engineering-I :**The knowledge of basic unit operations and their importance in day to day running of a pharmaceutical unit is emphasized to the students. This knowledge is further improved in the ensuing pharm. Engineering and pharmaceutics subjects. | Pharmaceutical Sciences |
| **Computer Application :**The knowledge of hardware and software components along with hands on knowledge on programming tools comes handy in operation of a pharmacy and also serves as a stepping stone for the computaional chemistry covered in higher semesters. | Pharmaceutical Sciences |
| **Pharmacognosy-I:**The subject involves the fundamentals of Pharmacognosy like scope, classification of crude drugs, their identification and evaluation, phytochemicals present in them and their medicinal properties. | Pharmaceutical Sciences |
| **Pharmaceutics-I:** This course is designed to impart a fundamental knowledge on the preparatory pharmacy with arts and science of preparing the different conventional dosage forms. | Pharmaceutical Sciences |
| **Pharm. Inorganic Chemistry-I:**This subject deals with the monographs of inorganic drugs and pharmaceuticals. The students were well acquainted with the principle of limit tests, different classes of inorganic pharmaceuticals and their analysis. | Pharmaceutical Sciences |
| **Pharm. Organic Chemistry-II:** Compounds, structural isomerism, intermediates forming in reactions, important physical properties, reactions and methods of preparation of these compounds. The syllabus also emphasizes on mechanisms and orientation of reactions. | Pharmaceutical Sciences |
| **B. Pharm 2nd Year** |  |  |
| **Dispensing Pharmacy :**Learn about different types of pharmaceutical formulations and preparation and dispensing of them. | Pharmaceutical Sciences | * University website.
* Curriculum books (Academic calendar).
* Notice boards.
* Lesson plans.
* Brochure.
* Student awareness workshops.
* Student orientation programmes.
 |
| **Pharm. Analysis-I:** This course deals with the fundamentals of analytical chemistry and principles of electrochemical analysis of drugs including their principles, titrations and analytical skills. The students become well versed in sampling, analysis of data,  ready to perform different types of titrimetric and gravimetric analysis . | Pharmaceutical Sciences |
| **Medicinal Chemistry-I:** This subject is designed to impart fundamental knowledge on the structure, chemistry and therapeutic value of drugs. The subject emphasizes on structure activity relationships of drugs, importance of physicochemical properties and metabolism of drugs. The syllabus also emphasizes on chemical synthesis of important drugs under each class. | Pharmaceutical Sciences |
| **Pharmaceutical Microbiology:** The knowledge in this subject is a perquisite for both biotechnology and medicinal chemistry. It also helps them in project planning. | Pharmaceutical Sciences |
| **Pharmacognosy-II:** The main purpose of subject is to impart the students the knowledge of how the secondary metabolites are produced in the crude drugs, how to isolate and identify and produce them industrially. Also this subject involves the study of producing the plants and phytochemicals through plant tissue culture, drug interactions and basic principles of traditional system of medicine. | Pharmaceutical Sciences |
| **Pharmacology-I:** The main purpose of the subject is to understand what drugs do to the living organisms and how their effects can be applied to therapeutics. The subject covers the information about the drugs like, mechanism of action, physiological and biochemical effects (pharmacodynamics) as well as absorption, distribution, metabolism and excretion (pharmacokinetics) along with the adverse effects, clinical uses, interactions, doses, contraindications and routes of administration of different classes of drugs. | Pharmaceutical Sciences |
| **Physical Chemistry:** The students were able to use the knowledge obtained on various states of gases, liquids; colloids, thermodynamics etc in the ensuing fields like pharmaceutical engineering, physical pharmacy and medicinal chemistry. | Pharmaceutical Sciences |
| **Pathophysiology Toxicology, & Health Education:** The knowledge of pathophysiology helps the students to understand the etiology and pathogenesis of the selected disease states and also about the signs and symptoms of the diseases. Identify the complications of the diseases. Know most commonly encountered pathophysiological state(s) and/or disease mechanism(s), as well as any clinical testing requirements. | Pharmaceutical Sciences |
| **B. Pharm 3rd Year** |  |  |
| **Pharmacology-II:** This subject is intended to impart the fundamental knowledge on various aspects (classification, mechanism of action, therapeutic effects, clinical uses, side effects and contraindications) of drugs acting on different systems of body and in addition, emphasis on the basic concepts of bioassay. | Pharmaceutical Sciences | * University website.
* Curriculum books (Academic calendar).
* Notice boards.
* Lesson plans.
* Brochure.
* Student awareness workshops.
* Student orientation programmes.
 |
| **Applied Biochemistry:** The students learn about the chemistry and biological importance of biological macromolecules. And in the practical paper they get hands on knowledge on qualitative and quantitative estimation of these. This knowledge is helpful for them in learning about pharmacology, medicinal chemistry and pharmacology. | Pharmaceutical Sciences |
| **Pharmacognosy-III:**The biosynthesis of different plant secondary metabolites are introduced to the students. This helps them in identifying biomolecules as pharmacophores and correlate this knowledge with medicinal chemistry and pharmacology. | Pharmaceutical Sciences |
| **Medicinal Chemistry-II:** This subject is designed to impart fundamental knowledge on the structure, chemistry and therapeutic value of drugs. The subject emphasizes on structure activity relationships of drugs, importance of physicochemical properties and metabolism of drugs. The syllabus also emphasizes on chemical synthesis of important drugs under each class. | Pharmaceutical Sciences |
| **Hospital and Clinical Pharmacy:** This course deals majorly with the different professional aspects of pharmacy. It helps the students to develop a keen inquisitive mind that is needed by a practising pharmacist. | Pharmaceutical Sciences |
| **Pharm. Analysis-Physical:**The students learn about different types of fundamental instrumental methods of analysis along with complexometric and non-aqueous titration that helps them in project planning and also in subjects like medicinal chemistry, pharmaceutics etc. | Pharmaceutical Sciences |
| **Drug Regulatory Affairs:** This course is designed to impart basic knowledge on important legislations related to the profession of pharmacy in India. This builds up their fundamental knowledge on the ethics associated with the profession of pharmacy. | Pharmaceutical Sciences |
| **Industrial Pharmacy & Cosmetology:**Course enables the student to understand and appreciate the influence of pharmaceutical additives and various pharmaceutical dosage forms on the performance of the drug product. It gives students proper skills for understanding, introduction, application and evaluation of modern techniques and methods for the use in the professional and research fields of cosmetology, ability to search for and classify new information. | Pharmaceutical Sciences |
| **B. Pharm 4th Year** |  |  |
| **Medicinal Chemistry-III:** This subject is designed to impart fundamental knowledge on the structure, chemistry and therapeutic value of drugs. The subject emphasis on modern techniques of rational drug design like quantitative structure activity relationship (QSAR), Prodrug concept, combinatorial chemistry and Computer aided drug design (CADD). The subject also emphasizes on the chemistry, mechanism of action, metabolism, adverse effects, Structure Activity Relationships (SAR), therapeutic uses and synthesis of important drugs. | Pharmaceutical Sciences | * University website.
* Curriculum books (Academic calendar).
* Notice boards.
* Lesson plans.
* Brochure.
* Student awareness workshops.
* Student orientation programmes.
 |
| **Pharm. Analysis-III:**The instrumental methods of analysis that are required in pharmaceutical research are covered in this course. The practical applications of these instruments are also illustrated to the students. | Pharmaceutical Sciences |
| **Pharmacognosy-IV:** The use of modern analytical techniques for screening and analysing secondary plant metabolites is elaborated to the students thereby helping them to plan their further research plan while pursuing higher studies. | Pharmaceutical Sciences |
| **Pharmacology-III:** This subject is intended to impart the fundamental knowledge on various aspects (classification, mechanism of action, therapeutic effects, clinical uses, side effects and contraindications) of drugs acting on respiratory and gastrointestinal system, infectious diseases, immuno-pharmacology and in addition, emphasis on the principles of toxicology and chronopharmacology. | Pharmaceutical Sciences |
| **Biopharmaceutics and Pharmacokinetics:** This subject enables the students to visualize the effect of pharmacokinetic (ADMET) parameters on the biological effect of the drug. The correlation of pharmacokinetics and pharmacodynamics is thus introduced and is experimentally explained to them | Pharmaceutical Sciences |
| **Pharma. Technology:**The dosage form design is introduced to the students. This enables them to work in the pharma Formulation and Development. | Pharmaceutical Sciences |
| **Industrial Training:**Identify the role of Pharmacy professional in Pharma industry. Explain the theoretical aspects directly viewing production and other activity live in industry and can decide his/her career. Develop the practical knowledge while working in industry to apply theoretical principle of Manufacturing. Demonstrate the planning and implementation of skill in Pharma industry | Pharmaceutical Sciences |
| **M. PHARM** |  |  |
| **Program Outcomes-M. Pharm (Pharmaceutics)** 1. Pharmaceutical Sciences knowledge: Apply the knowledge of mathematics, science, pharmaceutical fundamentals, and a Pharmacy specialization to the solution of complex Pharmaceutical problems.
2. Physicochemical properties of Formulations: The knowledge of importance of physical properties of the different pharmaceutical ingredients and the factors influencing them is very valuable for pharmaceutical dosage form design.
3. Unit Operations: Pharm. Engineering renders knowledge about the basic unit operations that are taking place in pharmaceutical industry and the different factors associated with it. This information is useful for both pharmaceutics and pharmaceutical engineering.
4. Entrepreneurship: The knowledge on different pharmaceutical dosage forms are imparted on students. This knowledge comes while handling a pharmacy or a manufacturing unit or in the further courses.
5. Design/Development of solutions: The information on solid dosage forms like tablets and capsules, their formulation and quality control serve as an important perquisite for dosage form design.
6. Application oriented Knowledge: The knowledge of biopharmaceutics enables the students to visualize the effect of pharmacokinetic (ADMET) parameters on the biological effect of the drug. The correlation of pharmacokinetics and pharmacodynamics is thus introduced and is experimentally explained to them. PO6: Environment and Sustainability: Enable extension of pharmaceutical dosage forms and enables the students to learn about different packaging materials used in pharmaceutical industry and the factors governing their use.
7. Conduct investigations of complex problems: To understand biopharmaceutical principles and pharmacokinetic principles through different compartment models, multiple dosage regimens, non-linear pharmacokinetics, and assessment of bioavailability and bioequivalence.
8. Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
9. Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
10. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
11. Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes
 | Pharmaceutical Sciences | * University website.
* Curriculum books (Academic calendar).
* Notice boards.
* Lesson plans.
* Brochure.
* Student awareness workshops.
* Student orientation programmes.
 |
| **Program Specific Outcomes:****M. Pharm (Pharmaceutics)**1. Impart knowledge on the novel drug delivery systems, approaches, criteria for selection of polymers and drugs and their formulation and evaluation.
2. To know various preformulation elements, industrial management and GMP considerations, Pilot Plant Scale Up Techniques, Stability testing, sterilization and packaging of dosage forms.
3. To impart knowledge and skills in generic drug development, various regulatory filings the approval process, and concept of generics across the globe.
4. To impart knowledge and skills for dose calculations, dose adjustments and apply biopharmaceutics theories in practical problem solving. The pharmacokinetic models, bioequivalence and potential clinical pharmacokinetic problem analysis.
5. Skill development in Pharmaceutical research, Pharmacoinformatics, in drug development in Computational modelling, Preclinical development, clinical development, Artificial Intelligence and Robotics, and Computational fluid dynamics
6. To impart knowledge and skills necessary for cosmetics and cosmeceuticals, their safety and efficacy and current technologies in cosmetic industry.
7. To gain knowledge in use of advanced instrumentation, formulation and evaluation of controlled release formulations, floating drug delivery systems, transdermal drug delivery systems, micromeritics, and mathematical simulations.
 | Pharmaceutical Sciences |
|

|  |
| --- |
| **Course Outcomes – M. Pharm** |
|  |
| **M. Pharm. (Pharmaceutics)** **Modern Pharmaceutical Analytical Techniques (MATI&II)****(common for all streams)**To understand the basic knowledge on assay of single and multiple component pharmaceuticals by using various analytical instruments • To develop basic practical skills using instrumentation techniques • Skills in selecting the suitable techniques for analysis of drugs and pharmaceuticals • To expand the theoretical knowledge on various instrumental techniques available for analysis of organic substances • To apply the knowledge learnt in developing new procedures of their own design • Comparing various methods of analysis and their outcomes |
| **Product Development & Packaging Technology (MPT-I)**Describe new concepts in pharmaceutical packaging and their control. Explain the pharmacopoeial testing, defects and stability of blister and strip packaging materials. Demonstrate sterilization of packaging materials used in parenterals, ophthalmic and aerosols as per their legal requirement. |
| **(BIOPHARMACEUTICS/PHARMACOKINETICS AND NOVEL DRUG DELIVERY SYSTEM) (MPT-II)**This course gives a detailed information about transporting a pharmaceutical compound in the body as needed to safely achieve its desired therapeutic effect. The various approaches for development of novel drug delivery systems. •Also it refers to approaches, formulations, technologies, and systems for transporting a pharmaceutical compound in the body as needed to safely achieve its desired therapeutic effect with suitable drug delivery. • Vaccine delivery and different mode of application approach for clinical use. • They know the different types of Drug carrier used in the process of drug delivery which serves to improve the selectivity, effectiveness, and/or safety of drug administration. • The students will know the latest drug delivery knowledge and think to develop new formulation based on the individual Requirement. • Recent developments in protein and peptide for parenteral delivery approaches will give new dimension of drug deliver for antibiotics, insulin, etc. |
| **M. Pharm. (Pharmacognosy)**  |
| **Program Outcomes: -****M. Pharm (Pharmacognosy)**1. In a broad sense, the student acquire knowledge on plant products with therapeutic activity and on active principles with pharmaceutical, cosmetic and food interest, or their toxicity, derived from plant species.
2. The student has an overview of the various uses of plant species and acquire knowledge on techniques applicable to their quality control.
3. The programme focus is on the utility of natural products in the present-day scenario.
4. The programme covers all the leading subjects related to natural products like Recent advances in Pharmacognosy especially in the area of medicinal plants used as anti-cancer agents, anti-diabetic agents, hepatoprotective drugs, plants as an adaptogens and immunomodulators and also subjects like Phytochemistry, Industrial Pharmacognosy, Standardization of medicinal plants etc.
5. Critically evaluate the use of plant and plant products as medicinal agents.
6. The possible programme outcome will be patent, publications, thesis or dissertation etc.
 |
| **Program Specific Outcomes****M. Pharm. (Pharmacognosy)** 1. The Students get an opportunity to learn the techniques of isolation, purification and characterization of phytoconstituents by various sophisticated chromatographic techniques like TLC, HPLC, HPTLC and GC etc.
2. The students know various aspects of plant drug standardization.
3. The students know the advancements in cultivation and production of drugs.
4. To understand the role of natural products in drug discovery and development.
5. The Students get trained in various spectral techniques like UV, IR, NMR & Mass Spectroscopy.
6. The students also learn to develop effective herbal formulations & cosmetics by bioactivity guided fractionation.
 |
| **Course Outcomes:****M. Pharm. (Pharmacognosy)** **ADVANCES IN PHARMACOGNOSY (MPG-I)**Separation of the active constituents obtained from natural sources (alkaloids – glycosides – hallucinating and anticancer drugs) in addition to the different methods of separation (chromatography).**Phytochemistry & Biogenesis (MPG-II)**The course aims to provide students with the necessary skills for:•To identify these active ingredients either in pure form of a mixture- as well as the different methods to evaluate these components and how to deal with the side effects of some components (if any) and how to overcome it and solve problems as well as how to deal with poisoning and abuse substances. • Herbal Drug discovery and development. • Optimisation of Lead compounds. • After finishing the course, the students get professional, Practical skills & time management skills in extraction, Isolation and Phytochemical analysis of Natural products. • Phytochemical documentation. |
| **Cultivation & Standardization of medicinal plants (MPG-III)**In this subject the student learns about the various methods and guidelines for evaluation and standardization of medicinal plants & their cultivation. |
| **M. Pharm (Pharmacology)** |
| **Program Outcomes****M. Pharm. (Pharmacology)**The programme covers all the leading subjects related to pharmacology especially in the area of medicinal plants used as anti-cancer agents, anti-diabetic agents, hepatoprotective drugs, plants as an adaptogens and immunomodulators.  |
| **Program Specific Outcomes****M. Pharm. (Pharmacology)** To impart knowledge and skills of drugs both from plant and synthetics origin, their safety and efficacy for the use in humans. |
| **Course Outcomes****M. Pharm. (Pharmacology)****Basic principles of drug therapy and clinical pharmacology (MPL-I)**The students would appreciate the knowledge in the field of pharmacology pertaining to the principles of drug therapy and clinical research. • They would get a better understanding in the regulatory requirements for conducting clinical trial. • They would understand the types of clinical trial designs. • They wouldstudy the responsibilities of key players involved in clinical trials • They would have an understandingof the safety monitoring, reporting and close-out activities. • They would have studied the principles of Pharmacovigilance. |
| **Recent advances and emergent trends in pharmacological sciences (MPL-II)**The students would appreciate the knowledge on the recent advances and emergent trends in pharmacological sciences. |
| **Pharmacological Methods & Toxicology (MPL-III)**The students would appreciate the knowledge on the preclinical safety and toxicological evaluation of drug & new chemical entity. • They would have better understanding in the regulatory aspects for the toxicological evaluation of drugs and chemicals. • They would have studied the various types of toxicity studies and their procedure. • They would appreciate the importance of ethical and regulatory requirements for toxicity studies. • They would have studied the practical skills required to conduct the preclinical toxicity studies. • They would appreciate the use of experimental animals for the different toxicological studies. |
| **M. Pharm. (Pharmaceutical Chemistry)** |
| **Program Outcomes****M. Pharm. (Pharmaceutical Chemistry)**1. Ability to independently carry out research/ investigation and development work to solve practical problems.
2. Ability to write and present a substantial technical report/ documents.
3. Ability to demonstrate a degree of mastery over the area as per the specialization of the program.
4. Ability to independently develop the business proposal in the specialized area.
5. Ability to use software and technology in research analysis and product/ process design.
 |
| **Program Specific Outcomes****M. Pharm. (Pharmaceutical Chemistry)**1. Are able to design, carry out, record and analyse the results of chemical experiments.
2. Are able to clearly communicate the results of scientific work in oral, written and electronic formats to both scientists and the public at large.
3. Are able to explore new areas of research in both chemistry and allied fields of science and technology.
4. Are able to relate the structure and physical properties of drugs to their pharmacological activity.
5. Describe the synthesis of important target compounds.
6. Describe the current challenges and opportunities in Pharmaceutical chemistry in light of contemporary developments in the field of drug discovery.
7. Describe the overall process of drug discovery, and the role played by medicinal chemistry in this process.
8. Find gainful employment in industry or government, be accepted at graduate or professional schools, or find employment in school systems as instructors or administrators.
 |
| **Course Out Comes****M. Pharm. (Pharmaceutical Chemistry):****Drug designing including Organic name reactions (MPC-I)**A detailed understanding of the processes involved in the design, development and discovery of medicinal compounds. |
| **Chemistry of Natural products (MPC-II)**To attain detailed knowledge about chemistry of medicinal compounds from natural origin. • To understand general methods of structural elucidation of medicinally active natural compounds. • To attain knowledge regarding isolation and purification of medicinal compounds from natural origin. • To characterize products by physical and spectroscopic means including IR, NMR, GC, and MS. • To identify different types of natural products, their occurrence, structure, biosynthesis and properties. • To know the use of natural products as starting materials. |
| **Medicinal Chemistry (MPC-III)**It provides students with up-to-date knowledge in receptor theories, enzyme kinetics, principles of drug actions, modern methods of drug design, metabolism and pharmacokinetics and advanced organic chemistry. |
| **M. Pharm (Pharmacy Practice)** |
| **Program Outcomes****M. Pharm. (Pharmacy Practice)*** Understanding the importance of clinical laboratory tests used in the evaluation of disease states, and interpretation of test results required to arrive at a differential, provisional and final diagnosis. This includes compiling, analyzing and interpreting the data in an appropriate manner.
* Develope skills including detection of drug interactions, contra-indications, drug-related problems like adverse drug reactions, medication management skills.
 |
| **Program Specific Outcomes****M. Pharm. ((Pharmacy Practice)*** Gain sufficient knowledge and expertise in detection and management of adverse drug reactions, drug interactions, medication errors, if any, answering any drug related queries of patients and make necessary suggestions to the medical and paramedical staff towards resolution of any drug related problems and needs of patients. Learn the pros and cons of patient’s drug therapy and disease management by studying the patient record files, besides going through medication charts and interviewing patients or their attendants and consulting medical and nursing staff of the ward.
* Understanding the importance of clinical laboratory tests used in the evaluation of disease states, and interpretation of test results required to arrive at a differential, provisional and final diagnosis. This includes compiling, analyzing and interpreting the data in an appropriate manner.
 |
| **Course Out Comes****M. Pharm. (Pharmacy Practice)****CLINICAL PHARMACY, PHARMACOKINETICS AND TOXICOLOGY (MPP-I)**Students will demonstrate knowledge of and ability to use principles of therapeutics, quality improvement, communication, economics, health behaviour, social and administrative aspects, health policy and legal issues in the practice of pharmacy. Students will use knowledge of drug distribution methods in hospital and apply it in the practice of pharmacy. Students will effectively apply principles of drug store management and inventory control to medication use. Students will provide patient-centred care to diverse patients using the best available evidence and monitor drug therapy of patient through medication chart review, obtain medication history interview and counsel the patients, identify drug related problems. Students will engage in innovative activities by making use of the knowledge of clinical trials. Students will exhibit professional ethics by producing safe and appropriate medication use throughout society.  |
| **APPLIED PHARMACOTHERAPEUTICS INCLUDING PATHOPHYSIOLOGY (MPP-II)**With the increasing role of clinical pharmacists in pharmaceutical care that aims at maximizing the benefits and reducing the hazard of drug therapy, students need to be aware about the fundamentals of pathophysiology and applied pharmacotherapeutics so that they understand the etiology and pathogenesis and choice of drug therapy well. This paper aims to enhance the competencies of students in understanding drug therapy and disease management in the changing world where clinical pharmacists are becoming an integral part of the healthcare system and are delivering their professional services in maximizing the outcome of drug therapy. **HOSPITAL AND COMMUNITY PHARMACY (MPP-III)**In the changing scenario of pharmacy practice in India, for successful practice of Hospital Pharmacy, the students are required to learn various skills like drug distribution, drug information, and therapeutic drug monitoring for improved patient care. In community pharmacy, students will be learning various skills such as dispensing of drugs, responding to minor ailments by providing suitable safe medication, patient counselling for improved patient care in the community set up. Knowledge is also imparted regarding emerging disciplines like pharmacoeconomics, pharmacogenomics, pharmacoepidemiology and pharmacovigilance.  |

 | Pharmaceutical Sciences |
|  |  |  |