

Program Outcomes (POs) for B. Pharmacy

- **Pharmacy Knowledge:** Possess knowledge and comprehension of the core and Basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.
- **Planning Abilities:** Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.
- **Problem analysis:** Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
- **Modern tool usage:** Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.
- **Leadership skills:** Understand and consider the human reaction to change, Motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.
- **Professional Identity:** Understand, analyze and communicate the value of their Professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).
- **Pharmaceutical Ethics:** Honour personal values and apply ethical principles in Professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
- **Communication:** Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.
- **The Pharmacist and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.
- **Environment and sustainability:** Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

Program Outcomes (POs) for M. Pharmacy

Subject: Pharmaceutics

- 1. Scientific knowledge:** To apply the scientific and technological principles to design, develop pharmaceutical dosage forms and drug delivery systems for better therapeutic results.
- 2. Technological applications:** To utilize technical knowledge and identify any factors affecting the quality of pharmaceutical manufacturing processes.
- 3. Modern tool usage:** Learn, select, apply appropriate methods, procedures, resources and modern computing tools with an understanding of the limitations for formulation development.
- 4. Entrepreneurship:** To understand the basics of establishing and management of pharmaceutical enterprise and manufacturing.
- 5. Practical skills:** To gain practical expertise in formulating and evaluating various user-friendly drug delivery systems for minor ailments to major diseases.
- 6. Applied sciences:** To employ contemporary scientific knowledge viz., pharmacology, biotechnology for designing patient-centric pharmaceuticals.
- 7. Computational and Statistical Methodologies:** Applying and utilizing the statistical tools with the aid of computer software to optimize the formulation development process.
- 8. Pharmaceutical ethics:** To respect personal values and apply ethical principles in professional and social contexts. Demonstrate behaviors that recognize cultural, personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
- 9. Environment and sustainability:** To understand, protect and cooperate environmental concerns for sustaining biodiversity in pharmaceutical product development.
- 10. Life-long learning:** To develop the habit of updating knowledge from time to time to meet industrial demands and social needs for having a fruitful career in Pharmacy.

Program outcomes (POs) for M. Pharmacy

Subject: Pharmaceutical Quality Assurance (MPQA)

1. **Knowledge:** To acquire knowledge on analytical techniques, product development, technology transfer, quality management systems, hazard management systems, quality control and quality assurance procedures, validation, computing methods, statistical methods, guidelines and regulations pertaining to pharmaceuticals and biopharmaceuticals.
2. **Analytical Reasoning:** To make sound judgements and decisions by gathering, analyzing and interpreting data, information and guidelines relevant to quality of pharmaceuticals.
3. **Problem Solving:** To systematically solve problems and issues by utilizing principles, tools, processes and systems relevant to the pharmaceutical industry.
4. **Modern Techniques:** To learn, choose and apply appropriate hyphenated methods, advanced instrumental techniques, quality management techniques and tools, computing and statistical tools and procedures with thoughtfulness of their applications.
5. **Experimental Ethics:** To uphold the moral standards and regulations outlined by the regulatory bodies of other nations and the Indian government that are pertinent to the pharmaceutical sector.
6. **Interdisciplinary engagement:** To utilize the knowledge and skills to engage in interdisciplinary work related to pharmaceuticals and healthcare activities
7. **Professional Identity:** To be a committed and responsible professional with skills and expertise in laboratory practices, analytical techniques, scientific tools, manufacturing and regulatory guidelines for ensuring safe and quality pharmaceutical products.
8. **Statistical Skills:** To apply and evaluate quantitative metrics to assure safety and quality of pharmaceuticals.
9. **Environment and Sustainability:** To develop methods, procedures and systems consistent with safety, environment preservation and sustainability.
10. **Lifelong Learning:** To actively participate in independent and lifelong learning in wider context of growing research, technological changes and regulatory changes.

Program Outcomes (POs) for M. Pharmacy

Subject: Pharmaceutical Chemistry

- 1 **Chemistry Knowledge:** Acquire knowledge on design, development, synthesis, purification, characterization and biological evaluation of new molecules.
- 2 **Planning Abilities:** Demonstrate effective planning abilities, develop and implement plans and organize work to meet deadlines.
- 3 **Problem Solving:** To utilize the principles of synthetic techniques with clear and critical thinking, while solving problems and making decisions. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
- 4 **Modern Techniques:** To learn, choose and apply appropriate spectroscopic, Insilco study, hyphenated methods and related computing tools with thoughtfulness of their applications.
- 5 **Experimental Ethics:** Honor personal values and apply ethical principles in professional and social contexts.
- 6 **Interdisciplinary Commitment:** To acquire skill oriented practical ability and utilize the needs of pharmaceutical chemistry in all other programs to emerge as potent researcher.
- 7 **Professional Identity:** Understand, analyze and communicate the role of pharmaceutical chemist in society.
- 8 **Rational Flexibility:** To engage in critical and logical thinking and to gain an overall knowledge in developing newer methods, impurity profiling and validation protocols those are useful in routine and laboratory purpose.
- 9 **Environment and Sustainability:** To understand and develop green chemistry approach.
- 10 **Lifelong Learning:** Understand and apply the concepts in day to day life activities for the benefit of self and for the welfare of society.

Program Outcomes (POs) for M. Pharmacy

Subject: Pharmacology

- 1 Drug Expertise:** Acquire knowledge on various classes of drugs and their mode of actions to unveil the remedies for many ailments.
- 2 Analytical Reasoning:** Identify assumptions and reveal the evidence-based reason for the disease or disorder take place, to select the type of relevant treatment.
- 3 Experimental Ethics:** Consider and follow ethics and guidelines specified by the authorities of various agencies and Government of India for animal congenial laboratory practice.
- 4 Interdisciplinary Engagement:** Obtain skill oriented practical proficiency by exposing and utilizing the needs of pharmacy in all disciplines to emerge as potent researcher.
- 5 Professional Identity:** Be committed and responsible person to play a proactive role with fidelity to community and empower society.
- 6 Statistical Skills:** Apply and analyze quantitative metrics to gain safety data on dosage, also to compare the effectiveness among experimental groups.
- 7 Intellectual Flexibility:** Engage in critical thinking and gain insight to identify, design and formulate pharmaceutical products that are in need of current aspects by using material from natural sources.
- 8 Lifelong learning:** Understand and apply the concepts in day to day life activities for the benefit of self and for the welfare of society and its concerns.

Program Outcomes (POs) for PHARM.D

1 Comprehensive pharmacy and clinical knowledge: Demonstrate mastery and application of core knowledge and skills in relation to the evolving pharmaceutical, biomedical, clinical and epidemiological sciences. This includes competency in areas supporting high quality pharmacy practice (e.g., pharmaceuticals, medicinal chemistry, pharmacokinetics, pharmacodynamics, pharmacology, pathophysiology, pharmacotherapeutics, and pharmaceutical care).

2 Patient centered care: Provide patient-centered care to diverse patients using the best available evidence and in consideration of patients' circumstances to devise, modify, implement, document and monitor pharmacotherapy care plans, either independently or as part of healthcare teams.

3 Problem solving and decision making: Demonstrate the ability to use observational, analytical and critical thinking skills to develop, implement and evaluate solutions that solve pharmacotherapy problems and build the ability to take decisions based on evidenced based practice.

4 Social and cultural awareness: Recognize social determinants of health and respect patients' cultural, social and religious perspectives to produce safe and appropriate medication use throughout society. Reflect their knowledge, experiences, values, attitudes, biases and beliefs, to show evidence of being self-aware and life-long learners.

5 Professionalism: Exhibit professional ethics, attitudes and behaviors by demonstrating patient advocacy, altruism, accountability, compassion, integrity and respect for others. Understand, analyze and communicate the value of their professional roles in society (Ex. Health care professionals, health promoters, educators, managers, employers and employees).

6 Innovation and entrepreneurship: Engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals. Utilize the principles of scientific enquiry and critical thinking while solving problems and making decisions in daily practice. Attain the key ability to start a community pharmacy or chain community pharmacies with patient care services.

7 Confidentiality and professional ethics: Practice ethically, maintaining patient confidentiality, responding to errors in care and professional misconduct (including plagiarism), and understanding principles of ethical research (including conflicts of interest and obtaining appropriate informed consent). Apply ethical principles while making decisions and take responsibility for the outcomes associated with decisions.

8 Interpersonal and communication skills: Demonstrate effective interpersonal written and verbal skills, adapt to socioeconomic and cultural factors as well as situational applications. Effectively educate families, patients, caregivers and other health care professional (HCPs). Function effectively in a team