Manav Institute of Pharmacy, Jevra, Hisar

Introduction:-

National Assessment and Accreditation Council (NAAC), Bangalore, for performance evaluation, assessment and accreditation and quality up-gradation of institutions of higher education, the NAAC proposes that every accredited institution establish an Internal Quality Assurance Cell (IQAC). In Manav Institute quality enhancement is a continuous process, the IQAC is a part of the institution's system and works towards realizing the goals of quality enhancement and sustenance. The prime task of the IQAC is to develop a system for conscious, consistent and catalytic improvement in the performance of institutions.

The **Internal Quality Assurance Cell (IQAC)** at *Manav Institute* plays a pivotal role in ensuring continuous quality improvement in all aspects of academic and administrative functioning. The cell actively works towards:

Curriculum Delivery Enhancement by promoting outcome-based education, use of ICT tools, and regular feedback mechanisms.

Faculty Development through training programs, workshops, and support for research and professional growth.

Student Support Services that ensure holistic development through mentoring, counselling , skill development, and career guidance.

Industry and Community Engagement by fostering partnerships, industrial visits, internships, and outreach activities.

Research and Innovation by encouraging scholarly publications, collaborative projects, and innovation-driven learning.

Governance and Best Practices by institutionalizing transparent processes, participative management, and systematic quality audits.

Together, these focus areas help foster an ecosystem of excellence, relevance, a

IQAC helps embed a culture of continuous improvement, reflective practices, and institutional transparency. It collaborates with all stakeholders—students, faculty, alumni, industry, and society—to achieve the institution’s vision of academic excellence and social contribution.

Objective of IQAC:-

The primary objective of the IQAC at *Manav Institute of Pharmacy* is to develop a structured mechanism for **conscious, consistent, and catalytic action** to improve the overall performance of the institution. Recognizing that **quality enhancement is a continuous process**, the IQAC is integrated into the institutional framework to ensure the realization of its academic and operational goals.

Key objectives include:

To establish a **systematic approach for quality assurance and enhancement**

To promote a **learner-centric and participative teaching-learning environment**

To embed **best practices and benchmarks** across departments and functions

To ensure **effective documentation, monitoring, and internal quality audits**

To support the institution in aligning with **national and global standards of higher education**

Through its sustained efforts, the IQAC plays a pivotal role in steering the institution toward **holistic development, academic excellence, and institutional credibility**.

The IQAC works to make a significant and meaningful contribution in the accreditation process of the college. Since quality enhancement is a continuous process, the IQAC will become a part of the institution's system & work towards realisation of the goals of quality enhancement & sustenance. The prime task of the IQAC is to develop a system for conscious, consistent & catalytic improvement in the overall performance of institutions. For this, it will channelize all efforts & measures of the institution towards promoting its holistic academic excellence.

Roles and Responsibilities:-

The Internal Quality Assurance Cell (IQAC) plays a vital role in driving continuous quality improvement and academic excellence at Manav Institute of Pharmacy. Its responsibilities are regularly reviewed through meetings and workshops to ensure alignment with institutional goals and accreditation standards.

The IQAC is responsible for formulating and implementing quality benchmarks in academic and administrative processes. It monitors the effectiveness of teaching-learning activities, promotes a learner-centric environment, and encourages the adoption of innovative and outcome-based education practices. The cell supports faculty development by organizing workshops, seminars, and training programs to enhance professional and research capabilities.

It plays a key role in strengthening student support systems such as mentoring, career counselling, and feedback mechanisms. The IQAC promotes a culture of research and innovation by facilitating project work, publications, and participation in academic events. It prepares and submits reports like the Annual Quality Assurance Report (AQAR) and ensures compliance with NAAC guidelines and other regulatory bodies.

Additionally, the IQAC coordinates with all stakeholders including students, faculty, alumni, and industry to promote transparency, participative governance, and the implementation of institutional best practices. Through proper documentation and internal reviews, it ensures the sustainability of quality initiatives and contributes to the overall development of the institution.

The IQAC's role and responsibilities were reviewed and clarified during a dedicated meeting or workshop and duties are provided accordingly. Emphasis was placed on understanding the IQAC's mandate as per institutional policies and accreditation requirements.

Plan and Strategy for NAAC:-

To ensure a systematic and effective approach to the NAAC accreditation process, a **NAAC Steering Committee** was constituted at Manav Institute of Pharmacy. The committee includes experienced faculty members, senior administrative staff, and external experts with a deep understanding of accreditation frameworks and quality benchmarks.

The committee is entrusted with the responsibility of guiding the institution through the entire accreditation process. It coordinates all preparatory activities including data collection, documentation, stakeholder engagement, and compliance with NAAC guidelines. Strategic planning sessions were conducted to align institutional goals with NAAC criteria, emphasizing quality enhancement, student-centric practices, and academic excellence.

Specific action plans were developed for each criterion, and internal sub-committees were formed to address curricular aspects, teaching-learning processes, research output, infrastructure development, governance, and best practices. Regular meetings, mock assessments, and quality audits are organized to monitor progress and ensure readiness for peer team visits.

This structured and participative approach not only ensures compliance with accreditation requirements but also fosters a culture of continuous improvement and accountability across the institution.

A NAAC Steering Committee was formed comprising experienced faculty members, administrative staff, and external experts. The committee was tasked with overseeing the accreditation process, coordinating activities, and ensuring compliance with NAAC standards.

Seminar for NAAC:-

A one-day seminar was organized at *Manav Institute of Pharmacy* to orient and train faculty and staff on the National Assessment and Accreditation Council (NAAC) accreditation process. The seminar aimed to build institutional capacity by deepening the understanding of NAAC standards, self-assessment mechanisms, and effective documentation practices required for quality assurance.

The session was conducted by Dr. C.P. Gupta, who provided an insightful overview of the accreditation framework, including the grading system, qualitative and quantitative metrics, and the significance of Institutional Assessment Reports (IAR). He emphasized the importance of aligning institutional practices with NAAC's seven criteria and offered practical guidance on preparing required documents, compiling Activity Reports, and drafting Action Taken Reports (ATR).

Participants were also briefed on best practices in data organization, evidence-based reporting, and the role of IQAC in coordinating the accreditation-related efforts. The seminar concluded with an interactive Q&A session, encouraging active faculty involvement in the preparation for upcoming assessments.

This seminar marked a key step toward creating a shared understanding and readiness among all stakeholders for achieving excellence in the NAAC accreditation process.

One day seminar covering key topics such as understanding NAAC standards, self-assessment, documentation preparation, and strategies for successful accreditation was provided to all members in the institute Dr. C.P. Gupta has informed in brief about the Accreditation process and grading system by the NAAC committee. Accordingly, he has guided about how to prepare documents, report of the activity, ATR etc.

Documentation for Various Events & Seminar: -

In the academic year **2024–25**, ***Manav Institute of Pharmacy*** organized several academic seminars, workshops, and placement activities to enhance the knowledge, skills, and employability of its students. These events were designed to address current trends in pharmaceutical sciences and industry demands.

Among the key academic programs were seminars on **Clinical Trial Design and Implementation**, **Pharmacovigilance and Drug Safety**, and **Pharmaceutical Biostatistics**. These sessions helped students and faculty gain practical insights into real-world pharmaceutical applications, regulatory processes, drug safety monitoring, and data analysis in research. Each seminar was conducted by domain experts and was well-attended by both students and staff.

In addition to academic enrichment programs, the institute also organized **campus placement drives** during the session. These drives facilitated interactions between graduating students and pharmaceutical companies, helping bridge the gap between academic learning and industry requirements.

For each of these events, proper documentation was maintained, which includes the event schedule, invitation letters, attendance records, photographs, feedback from participants, certificates issued, and an **Action Taken Report (ATR)** highlighting the outcomes and follow-up actions. This systematic documentation reflects the institute's commitment to transparency, quality assurance, and continuous improvement, as per NAAC and IQAC standards.

These documented initiatives not only contribute to student development but also demonstrate the institute's proactive approach toward academic excellence, professional preparedness, and institutional growth.

Multiple seminars/ workshops were conducted in the academic year 2024-25 i.e. Clinical Trial Design and Implementation Seminar, Pharmacovigilance and Drug Safety Forum, Pharmaceutical Biostatistics Clinic etc. Campus placement drives were also conducted.

Action Taken Reprt:-

Outcomes:-

PO, PSO and CO (Program Outcomes, Program Specific Outcome & Course Outcome)

PO.1 – 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.

PO.2 – 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.

PO.3 – Problem Analysis

Utilize the principles of scientific inquiry, think analytically, clearly, and critically while solving problems and making decisions during daily pharmacy practice. Find, analyze, evaluate, and apply information systematically, and make defensible decisions.

PO.4 – Modern Tool Usage

Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of their limitations.

PO.5 – Leadership Skills

Understand and consider leadership principles and demonstrate them in professional practice while working in teams and in multidisciplinary settings.

PO.6 – 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).

PO.7 – Pharmaceutical Ethics

Honor 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, relate them to individual judgments and professional decisions.

PO.8 – Communication

Communicate effectively with pharmacy community members, patients, and society. Able to read, write, listen, and speak clearly, as well as document and present information effectively.

PO.9 – The Pharmacist and Society

Apply reasoning informed by contextual knowledge to assess societal, health, safety, and legal issues and responsibilities relevant to pharmacy practice.

PO.10 – Environment and Sustainability

Understand the impact of professional pharmacy solutions in societal and environmental contexts and demonstrate knowledge of sustainable development.

PO.11 – Life-long Learning

Recognize the need for and engage in independent and life-long learning in the broadest context of technological change and pharmaceutical advancement.

Program Specific Outcomes (PSOs)

B. Pharmacy Program

Upon successful completion of the B. Pharmacy program, graduates will be able to:

PSO.1 – Foundational Knowledge

Demonstrate comprehensive knowledge of pharmaceutical sciences and life sciences, including human anatomy, physiology, microbiology, and biochemistry relevant to pharmacy practice.

PSO.2 – Problem-Solving Skills

Identify, formulate, and solve problems in pharmaceutical industry operations, community and hospital pharmacy settings through logical reasoning and evidence-based decision-making.

PSO.3 – Experimental and Analytical Skills

Design and conduct experiments, analyze and interpret pharmaceutical data in areas such as drug formulation, production, quality control, and quality assurance.

PSO.4 – Formulation and Process Design

Apply knowledge to design and optimize drug formulations, synthetic pathways, and manufacturing processes according to industrial and regulatory standards.

PSO.5 – Pharmacological Understanding

Understand drug actions, mechanisms, pharmacokinetics, and pharmacodynamics, and apply this knowledge to therapeutic decisions and laboratory practices.

PSO.6 – Modern Tool Usage

Utilize modern pharmaceutical tools, software, instrumentation, and digital technologies to analyze, design, and solve real-world pharmacy problems.

PSO.7 – Professional and Ethical Responsibility

Demonstrate awareness of and adherence to legal, ethical, and professional responsibilities in accordance with the principles of pharmaceutical jurisprudence.

PSO.8 – Communication Skills

Communicate effectively in both oral and written forms with healthcare professionals, patients, industry personnel, and regulatory bodies.

PSO.9 – Societal and Environmental Awareness

Understand the societal, health, and environmental impact of pharmaceutical sciences and contribute to addressing contemporary healthcare issues.

PSO.10 – Lifelong Learning

Engage in continuous self-learning, skill development, and professional advancement to adapt to evolving scientific and technological landscapes.

PSO.11 – Research and Competitive Readiness

Acquire knowledge and competence in pharmaceutical research and development, and demonstrate readiness for national and international competitive exams and higher education.

Program Outcomes (POs)

Diploma in Pharmacy (D. Pharmacy)

Upon successful completion of the Diploma in Pharmacy program, the graduate will be able to:

PO.1 – Applied Pharmaceutical Knowledge

Apply fundamental knowledge of pharmaceutical sciences in various professional and practical contexts.

PO.2 – Health Communication

Communicate effectively with healthcare professionals and patients to ensure safe and effective medication use.

PO.3 – Interdisciplinary Communication

Collaborate and communicate effectively with individuals from diverse multidisciplinary backgrounds.

PO.4 – Ethics and Responsibility

Demonstrate an understanding of professional, ethical, and legal responsibilities in pharmacy practice.

PO.5 – Experimental Skills

Design and conduct experiments in pharmaceutical sciences and interpret their outcomes accurately.

PO.6 – Professional Identity Development

Cultivate a strong professional identity as a competent and responsible pharmacy practitioner.

PO.7 – Community and Social Responsibility

Understand the pharmacist's role in promoting public health and contributing to community well-being.

PO.8 – System Design and Integration

Design pharmacy-related systems, processes, or components within realistic constraints like ethical, environmental, and economic considerations.

PO.9 – Technical Proficiency

Utilize appropriate pharmaceutical tools, techniques, and technologies for effective practice.

PO.10 – Contemporary Awareness

Demonstrate awareness and understanding of current issues in pharmacy, healthcare, and society.

PO.11 – Lifelong Learning

Recognize the importance of lifelong learning and professional development in pharmacy practice.

Program Specific Outcomes (PSOs)

Diploma in Pharmacy (D. Pharma)

Upon completing the D. Pharma program, the student will be able to:

PSO.1 – Pharmaceutics Fundamentals

Understand various dosage forms, their classification, manufacturing processes, and therapeutic uses.

PSO.2 – Dosage Forms and Traditional Medicines

Demonstrate knowledge of allopathic and traditional formulations (e.g., Ayurvedic), immunological products, and their applications.

PSO.3 – Problem-Solving in Pharmacy Practice

Identify, analyze, and solve issues in pharmaceutical industries, hospital, and community pharmacy settings.

PSO.4 – Ethics and Law

Demonstrate awareness of professional responsibilities and legal frameworks under pharmaceutical jurisprudence.

PSO.5 – Pharmacognosy and Natural Products

Explain the importance of natural products as sources of drugs, common adulterants, and quality control measures.

PSO.6 – Clinical and Laboratory Collaboration

Work effectively with clinicians to support laboratory diagnostics and ensure patient safety in healthcare settings.

PSO.7 – Anatomy and Physiology Communication

Develop appropriate terminology and understanding of human anatomy and physiology to communicate effectively and support healthcare delivery.

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Program Outcomes :

Name of Program: Bachelor of Pharmacy (B.Pharm.)

Pharmacy Knowledge: Possess knowledge of the core pharmacy subjects such as pharmaceutics, pharmacology, pharmaceutical chemistry and other allied subjects like pharmacy administration, cosmetics, marketing etc.

Planning Abilities: Showcase 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: Apply the scientific principles, analytical and critical thinking, while solving problems and making decisions during daily practice.

Modern tool usage: Select, and apply appropriate procedures, resources, and modern pharmacy-related computing and analytical tools with an understanding oftheir working principles.

Leadership skills: Inculcate leadership and team-building skills required for fulfilment of, professional and societal responsibilities. Undertake participatory roles as responsible citizens or leadership roles to facilitate improvement in health and well- being.

Professional Identity: Comprehend, evaluate and communicate the professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).

Pharmaceutical Ethics: Respect personal values and ethical principles in professional and social contexts. 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 appropriate knowledge to assess health, safety and legal issues and following the responsibilities relevant to the professional pharmacy practice.

Environment and sustainability: Understand the impact of the professional pharmacy practices in environmental contexts, and showcase the knowledge of, and need for sustainable development.

The Bachelor of Pharmacy Programme will prepare its graduates to:

Apply knowledge to assess health, safety and legal issues and following the responsibilities relevant to the professional pharmacy practice.

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.

Undertakeparticipatoryrolesasresponsiblecitizensorleadershiprolestofacilitatei mprovement in health and well- being

Select, and apply appropriate procedures, resources, and modern pharmacy-related computing and analytical tools with an understanding of their working principles.

B. Pharmacy Semester-I Course Outcomes:

Course Code	Course Name	Course Outcomes
BP101T	**Human Anatomy and Physiology – I (Theory)**	1. Impart fundamental knowledge on the structure and functions of various systems of the human body. 2. Understand homeostatic mechanisms. 3. Provide basic knowledge required to understand various disciplines of pharmacy.
BP102T	**Pharmaceutical Analysis (Theory)**	1. Understand fundamentals of analytical chemistry and electrochemical analysis of drugs. 2. Understand principles of volumetric and electrochemical analysis. 3. Carry out various volumetric and electrochemical titrations. 4. Develop analytical skills.
BP103T	**Pharmaceutics – I (Theory)**	1. Impart knowledge of preparatory pharmacy and the art of preparing conventional dosage forms. 2. Know the history of the pharmacy profession. 3. Understand basics of dosage forms, pharmaceutical incompatibilities, and

Course Code	Course Name	Course Outcomes
		pharmaceutical calculations. 4. Learn professional handling of prescriptions. 5. Prepare various conventional dosage forms.
BP104T	**Pharmaceutical Inorganic Chemistry (Theory)**	1. Know sources of impurities and methods for determining them in inorganic drugs and pharmaceuticals. 2. Understand medicinal and pharmaceutical importance of inorganic compounds.
BP105T	**Communication Skills (Theory)**	1. Prepare pharmacy students to interact effectively with healthcare professionals. 2. Develop soft skills to work as a team player. 3. Understand behavioral needs of a pharmacist. 4. Communicate effectively (verbal & non-verbal). 5. Manage teams effectively. 6. Develop interview skills. 7. Build leadership qualities.
BP106RBT	**Remedial Biology (Theory)**	1. Understand plant and animal kingdom structures and functions. 2. Learn classification and features of five kingdoms of life. 3. Understand anatomy & physiology of plants. 4. Understand anatomy & physiology of animals with special reference to humans.
BP106RMT	**Remedial Mathematics (Theory)**	1. Understand theory and applications of mathematics in pharmacy. 2. Solve different problems using mathematical concepts. 3. Appreciate mathematical applications in pharmacy.

Course Code	Course Name	Course Outcomes
BP107P	**Human Anatomy and Physiology (Practical)**	1. Complement theoretical physiology with practical understanding. 2. Verify physiological processes through experiments on living tissues or humans. 3. Develop deeper insight into the subject.
BP108P	**Pharmaceutical Analysis (Practical)**	1. Perform limit tests, standardization of solutions, and determination of drug purity. 2. Handle instruments like pH meter and conductometer.
BP109P	**Pharmaceutics – I (Practical)**	1. Understand formulation development of dosage forms. 2. Learn labeling and packaging techniques of pharmaceutical containers.
BP110P	**Pharmaceutical Inorganic Chemistry (Practical)**	1. Perform limit tests and identification of pharmaceutical compounds. 2. Detect impurities and prepare pharmaceutically important drugs.
BP111P	**Communication Skills (Practical)**	1. Learn modules using Wordsworth English language lab software. 2. Improve writing, communication, and presentation skills.
BP112RBP	**Remedial Biology (Practical)**	1. Perform plant biology experiments (cutting, staining, permanent slide preparation). 2. Determine blood group, blood pressure, and tidal volume of humans.

B. Pharmacy Semester-II Course Outcomes:

Course Code	Course Name	Course Outcomes
BP201T	**Human Anatomy and Physiology – II (Theory)**	1. Impart fundamental knowledge on the structure and functions of various systems of the human body. 2. Understand homeostatic mechanisms. 3. Understand the various disciplines of pharmacy. 4. Explain the gross morphology, structure, and functions of various organs. 5. Describe homeostatic mechanisms and their imbalances. 6. Identify various tissues and organs of different systems. 7. Perform hematological tests (blood cell counts, hemoglobin estimation, bleeding/clotting time) and record blood pressure, heart rate, pulse, and respiratory volume. 8. Appreciate the coordinated working pattern of organs of each system. 9. Appreciate interlinked mechanisms in maintaining homeostasis.
BP202T	**Pharmaceutical Organic Chemistry – I (Theory)**	1. Write the structure, name, and type of isomerism of organic compounds. 2. Write and name reactions and explain their orientation. 3. Account for reactivity/stability of compounds. 4. Identify and confirm the identification of organic compounds.
BP203T	**Biochemistry (Theory)**	1. Understand molecular-level chemical processes in living cells. 2. Provide biochemical facts and principles to understand nutrient metabolism in physiological and pathological conditions. 3. Emphasize genetic organization of the mammalian genome and catalytic functions of DNA.

Course Code	Course Name	Course Outcomes
		4. Understand the catalytic role of enzymes and their role in drug design and diagnostics. 5. Understand metabolism of nutrient molecules in various conditions. 6. Understand the role of DNA in RNA and protein synthesis.
BP204T	**Pathophysiology (Theory)**	1. Study causes of diseases and body reactions. 2. Gain thorough knowledge of pathology for pharmacological applications. 3. Obtain baseline knowledge required to practice medicine safely and effectively. 4. Describe the etiology and pathogenesis of selected disease states. 5. Identify signs and symptoms of diseases.
BP205T	**Computer Applications in Pharmacy (Theory)**	1. Introduce database and DBMS, applications in clinical studies. 2. Understand computer applications in pharmacy. 3. Learn types of databases. 4. Understand database applications in pharmacy.
BP206T	**Environmental Sciences (Theory)**	1. Study environmental systems and changes impacting organisms. 2. Understand physical, biological, social, and cultural factors impacting the environment. 3. Create awareness about environmental problems. 4. Impart basic knowledge of environment and its issues. 5. Develop concern for the environment. 6. Motivate learners to participate in environmental protection. 7. Acquire skills for solving environmental problems. 8. Strive for harmony with nature.
BP207P	**Human Anatomy and Physiology (Practical)**	1. Verify physiological processes discussed in theory through experiments.

Course Code	Course Name	Course Outcomes
		2. Develop subject insight. 3. Study integumentary and special senses using specimens/models. 4. Study nervous and endocrine systems. 5. Demonstrate general neurological examination. 6. Test olfactory nerve function. 7. Examine taste sensations. 8. Demonstrate visual acuity. 9. Demonstrate reflex activity. 10. Record body temperature. 11. Demonstrate feedback mechanisms.
BP208P	**Pharmaceutical Organic Chemistry – I (Practical)**	1. Identify unknown organic compounds using preliminary tests, functional group tests, and melting/boiling point measurement. 2. Construct molecular models.
BP209P	**Biochemistry (Practical)**	1. Identify biomolecules such as carbohydrates and proteins using tests. 2. Determine important parameters in blood and urine.
BP210P	**Computer Applications in Pharmacy (Practical)**	1. Create HTML web pages for personal information. 2. Retrieve drug information and adverse effects using online tools. 3. Generate mailing labels using MS Word and Label Wizard.

Semester-III Course Outcomes:

Course Code	Course Name	Course Outcomes
BP301T	**Pharmaceutical Organic Chemistry – II (Theory)**	1. Understand preparation and reactions of organic compounds, including their mechanisms and orientation of reactions. 2. Write the structure, name, and identify the type of isomerism of organic compounds. 3. Write and name reactions, along with orientation of reactions. 4. Account for reactivity and stability of compounds. 5. Prepare organic compounds.
BP302T	**Physical Pharmaceutics – I (Theory)**	1. Study various physical and physicochemical properties and principles involved in dosage forms/formulations. 2. Understand theory and practical components to gain insight into formulation research and stability studies. 3. Analyze physicochemical properties of drug molecules for dosage form design. 4. Apply principles of chemical kinetics for stability testing and expiry date determination. 5. Demonstrate the use of physicochemical properties in formulation development and evaluation.
BP303T	**Pharmaceutical Microbiology (Theory)**	1. Study various microorganisms, especially those used in the production of alcohol, antibiotics, vaccines, vitamins, and enzymes. 2. Understand identification, cultivation, and preservation methods of

Course Code	Course Name	Course Outcomes
		microorganisms. 3. Recognize the importance and implementation of sterilization in pharmaceutical processing and industry. 4. Learn sterility testing of pharmaceutical products. 5. Conduct microbiological standardization of pharmaceuticals. 6. Understand cell culture technology and its applications in pharmaceutical industries.

B. Pharm Course Outcomes (Semester-wise)

Semester IV

Course Code	Course Name	Course Outcomes
BP304T	Pharmaceutical Engineering (Theory)	1. Impart fundamental knowledge on various unit operations used in the pharmaceutical industry. 2. Understand various material handling techniques. 3. Perform different processes in pharmaceutical manufacturing. 4. Conduct tests to prevent environmental pollution. 5. Appreciate plant layout design for optimum use of resources. 6. Learn preventive methods for corrosion control in pharmaceutical industries.
BP305P	Pharmaceutical Organic Chemistry-II (Practical)	1. Understand practical aspects of re crystallization and distillation techniques. 2. Synthesize pharmaceutically important

Course Code	Course Name	Course Outcomes
		organic compounds using various organic reactions.
BP306P	Physical Pharmaceutics – I (Practical)	1. Understand key parameters during the development of pharmaceutical dosage forms. 2. Apply physical parameters in formulation development.
BP307P	Pharmaceutical Microbiology (Practical)	1. Gain hands-on training in sterilization techniques. 2. Learn sub-culturing of bacteria/fungi, nutrient stab/slant preparations, and staining methods.
BP308P	Pharmaceutical Engineering (Practical)	1. Understand practical aspects of unit operations and processes. 2. Learn newer techniques and pharmaceutical process parameters.

Semester V

Course Code	Course Name	Course Outcomes
BP501T	Medicinal Chemistry – II (Theory)	1. Gain knowledge of drug structure, chemistry, and therapeutic value. 2. Study structure-activity relationships and physicochemical properties. 3. Emphasize chemical synthesis of important drugs. 4. Understand metabolism, adverse effects, and SAR of drugs.

Course Code	Course Name	Course Outcomes
BP502T	Industrial Pharmacy I (Theory)	1. Understand pharmaceutical additives and dosage form performance. 2. Study manufacturing techniques of various dosage forms. 3. Develop and evaluate solid, liquid, and semi-solid dosage forms.
BP503T	Pharmacology – II (Theory)	1. Understand classification, mechanism of action, therapeutic effects, and bioassay concepts. 2. Correlate drug action with disease treatment and pharmacological experiments.
BP504T	Pharmacognosy & Phytochemistry II (Theory)	1. Understand production and isolation of secondary metabolites. 2. Learn plant tissue culture, extraction, and herbal formulation principles.
BP505T	Pharmaceutical Jurisprudence (Theory)	1. Understand laws, regulations, and ethics governing pharmaceuticals in India. 2. Gain knowledge of regulatory bodies, pharmaceutical acts, and quality standards.

Manav Institute of Pharmacy:

D.Pharm Course Outcomes

D.Pharm – ER 2020 (Part I)

1. PHARMACEUTICS

Theory (ER20-11T)

1. Describe the different dosage forms and their formulation aspects.
2. Explain the advantages, disadvantages, and quality control tests of different dosage forms.
3. Discuss the importance of quality assurance and good manufacturing practices.

Practical (ER20-11P)

1. Calculate the working formula from the given master formula.
2. Formulate the dosage form and dispense it in an appropriate container.
3. Design the label with the necessary product and patient information.
4. Perform the basic quality control tests for common dosage forms.

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2. PHARMACEUTICAL CHEMISTRY

Theory (ER20-12T)

1. Describe the chemical class, structure, and chemical name of commonly used drugs (organic and inorganic).
2. Discuss pharmacological uses, dosage regimens, stability issues, and storage conditions of chemical substances.
3. Describe quantitative and qualitative analysis, and impurity testing from official monographs.
4. Identify dosage forms and brand names of popular drugs and pharmaceuticals.

Practical (ER20-12P)

1. Perform limit tests for various inorganic elements and report results.

2. Prepare standard solutions using volumetric analysis.
3. Test the purity of selected inorganic and organic compounds.
4. Synthesize selected chemical substances as per standard synthetic schemes.
5. Perform qualitative tests to identify unknown chemical substances.

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3. PHARMACOGNOSY

Theory (ER20-13T)

1. Identify important/common crude drugs of natural origin.
2. Describe the uses of herbs in nutraceuticals and cosmeceuticals.
3. Discuss principles of alternative systems of medicines.
4. Describe the importance of quality control of natural drugs.

Practical (ER20-13P)

1. Identify given crude drugs based on morphological characteristics.
2. Take transverse sections of crude drugs.
3. Describe anatomical characteristics under microscopic conditions.
4. Perform physical and chemical tests to evaluate crude drugs.

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4. HUMAN ANATOMY AND PHYSIOLOGY

Theory (ER20-14T)

1. Describe the various organ systems of the human body.
2. Discuss anatomical features of important organs and tissues.
3. Explain homeostatic mechanisms regulating normal physiology.
4. Discuss significance of vital physiological parameters of the human body.

Practical (ER20-14P)

1. Perform hematological tests on human subjects and interpret results.
2. Record, monitor, and document vital physiological parameters.
3. Describe anatomical features of tissues under microscopy.
4. Discuss significance of anatomical and physiological characteristics.

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5. SOCIAL PHARMACY

Theory (ER20-15T)

1. Discuss roles of pharmacists in various national health programs.
2. Describe sources of health hazards and disease preventive measures.
3. Discuss healthcare issues related to food and nutrition.
4. Describe general roles and responsibilities of pharmacists in public health.

Practical (ER20-15P)

1. Describe roles of pharmacists in national health programs.
2. Design promotional materials for public health awareness.
3. Describe various health hazards including microbial sources.
4. Advise on preventive measures for diseases.
5. Provide first aid for various emergency conditions.

Manav Institute

D.Pharm – ER 2020 (Part II)

1. PHARMACOLOGY

Theory (ER20-21T)

1. Describe basic concepts of pharmacokinetics and pharmacodynamics.
2. List classes and drugs of choice for various diseases.
3. Advise on dosage regimen, route, and contraindications.
4. Describe common adverse drug reactions.

Practical (ER20-21P)

1. Study and report local anaesthetic, mydriatic, and mitotic effects on rabbit eye.
2. Choose appropriate animal models to study CNS drug effects and report.
3. Perform effects of drugs on isolated organs/tissues (simulated) and interpret results.
4. Interpret dose-dependent responses of drugs in animal models.

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2. COMMUNITY PHARMACY AND MANAGEMENT

Theory (ER20-22T)

1. Describe establishment, legal requirements, and administration of community pharmacy.
2. Professionally handle prescriptions and dispense medicines.
3. Counsel patients on diseases, prescription, and non-prescription medicines.
4. Perform basic health screening and interpret reports.

Practical (ER20-22P)

1. Handle and fill prescriptions professionally.
2. Counsel patients on diseases and minor ailments.
3. Counsel on prescription and OTC medicines.
4. Design and prepare patient information leaflets.
5. Perform basic health screening tests.

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3. BIOCHEMISTRY & CLINICAL PATHOLOGY

Theory (ER20-23T)

1. Describe functions of biomolecules.
2. Discuss enzyme functions in the human system.
3. Explain metabolic pathways in physiological and pathological conditions.
4. Describe principles of organ function tests and their clinical significance.
5. Determine biomolecules/metabolites qualitatively and quantitatively.
6. Describe clinical pathology of blood and urine.

Practical (ER20-23P)

1. Qualitatively determine biomolecules/metabolites in biological samples.
2. Determine normal and abnormal constituents in blood and urine and interpret results.

4. PHARMACOTHERAPEUTICS

Theory (ER20-24T)

1. Assess subjective and objective parameters of patients in common diseases.
2. Assist healthcare providers in drug-related problem analysis and interventions.
3. Plan rational medicine therapy for common diseases.
4. Design and deliver discharge counselling.

Practical (ER20-24P)

1. Write SOAP (Subjective, Objective, Assessment, and Plan) notes for clinical cases.
2. Counsel patients on disease conditions, drug use, administration, lifestyle modifications, and monitoring.

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5. HOSPITAL AND CLINICAL PHARMACY

Theory (ER20-25T)

1. Explain basic concepts of hospital pharmacy administration.
2. Manage supply chain and distribution of medicines in hospitals.
3. Assist healthcare providers in drug therapy monitoring and address drug-related problems.
4. Interpret lab reports for optimizing drug therapy.

Practical (ER20-25P)

1. Handle and answer drug information queries.
2. Interpret common laboratory reports.
3. Report suspected adverse drug reactions.
4. Handle medical/surgical aids and devices.
5. Interpret and report drug-drug interactions for optimizing therapy.

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6. PHARMACY LAW AND ETHICS (ER20-26T)

1. Describe history and evolution of pharmacy law in India.

2. Interpret acts and rules regulating pharmacy profession in India.
3. Discuss codes of ethics related to pharmacy practice.
4. Interpret fundamentals of patent laws from the pharmacy perspective.

Contact

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