

SHIVAJIRAO S. JONDHLE COLLEGE OF PHARMACY, ASANGAON.

TAL.- SHAHAPUR, DIST.- THANE (M.S.) -421 601

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Affiliated to MSBTE & University of Mumbai

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P.17 List of program specific labs and computing facility within department

Sr. No	Name of the Laboratory	Room No.	Technical Manpower Support		
			Name of the technical Staff	Designation	Qualification
01	Pharmaceutics	207	Mr. Chetan AnantDeshmukh	Lab Technician	Bsc
02	Pharmaceutical Chemistry	208	Ms. Karuna Keshav Harne	Lab Technician	Bsc
03	Pharmacognosy	212	Ms. Meghana Narendra Talpade	Lab Technician	Bsc
04	Human Anatomy and Physiology	215	Ms. Meghana Narendra Talpade	Lab Technician	Bsc
05	Social Pharmacy	212	Mr. Chetan AnantDeshmukh	Lab Technician	Bsc
06	Pharmacology	210	Mr. Rakesh Shriram Bhadane	Lab Technician	D Pharm
07	Community Pharmacy & Management	-	Ms. Karuna Keshav Harne	Lab Technician	Bsc
08	Biochemistry and Clinical Pathology	208	Ms. Vrushali Shivram Bangar	Lab Technician	Bsc
09	Pharmacotherapeutics	207	Ms. Vrushali Shivram Bangar	Lab Technician	Bsc
10	Hospital and Clinical Pharmacy	215	Mr. Chetan AnantDeshmukh	Lab Techniciann	Bsc



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1. Pharmaceutics Lab (207):



Introduction:

Pharmaceutics is the science of preparing and dispensing drugs. The laboratory component of this field involves the practical application of theoretical knowledge to create and test various pharmaceutical forms. The primary focus is on formulating, compounding, and analyzing different types of medications to ensure their safety, efficacy, and quality.





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Objectives:

- •Understand the principles of drug formulation.
- •Learn techniques for compounding various dosage forms (e.g., tablets, capsules, ointments).
- •Gain proficiency in the use of laboratory equipment.
- •Conduct quality control tests on pharmaceutical products.
- •Develop problem-solving skills in pharmaceutical contexts.

Equipment and Materials:

- Mortar and pestle
- Analytical balance
- •Weighing boats/papers
- •Graduated cylinders
- •Pipettes and micropipettes
- •pH meter
- •Various excipients and active pharmaceutical ingredients (APIs)

Safety and Good Laboratory Practices (GLP):

- •Personal Protective Equipment (PPE): Proper use of gloves, lab coats, and goggles.
- •Chemical Handling: Safe handling, storage, and disposal of chemicals.
- •Instrument Calibration: Regular calibration and maintenance of lab equipment.
- •Documentation: Accurate record-keeping and documentation of all experiments.

Conclusion:

The pharmaceutics lab is integral to the education of pharmacy students, providing hands-on experience in the formulation and quality control of pharmaceuticals. The skills learned are crucial for ensuring the development of safe, effective, and high-quality medicinal products.





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2. Pharmaceutical Chemistry Lab (208):



Introduction:

Pharmaceutical chemistry involves the study of drugs and drug development, focusing on the chemical aspects of drug design, synthesis, and analysis. The laboratory component provides practical experience in synthesizing, analyzing, and understanding the chemical properties of pharmaceutical compounds.





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Objectives:

- •Understand the principles of drug design and synthesis.
- •Gain proficiency in organic synthesis techniques.
- •Learn methods for the structural elucidation of compounds.
- •Conduct qualitative and quantitative analysis of pharmaceuticals.
- •Develop problem-solving skills in chemical contexts.

Equipment and Materials:

- Analytical balance
- •Melting point apparatus
- •Reagents and solvents
- •Various glassware (e.g., beakers, flasks, pipettes)

Safety and Good Laboratory Practices (GLP):

- •Personal Protective Equipment (PPE): Proper use of lab coats, gloves, and safety goggles.
- •Chemical Handling: Safe handling, storage, and disposal of chemicals and solvents.
- •Instrument Maintenance: Regular calibration and maintenance of analytical instruments.
- •Documentation: Accurate record-keeping and proper documentation of experiments and results.

Conclusion:

The pharmaceutical chemistry lab is essential for understanding the chemical basis of drug action and development. It equips students with the practical skills needed for synthesizing and analyzing pharmaceutical compounds, ensuring they are prepared for careers in drug research and development.





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3. Pharmacognosy Lab (212):



Pharmacognosy Lab (212):

Introduction:

Pharmacognosy is the study of natural products and their applications in medicine. This field focuses on the discovery, characterization, and analysis of bioactive compounds derived from plants, animals, and microorganisms. The laboratory component of pharmacognosy involves hands-on experience in identifying, extracting, and analyzing these natural products.

Objectives:

- •Learn techniques for the identification and classification of medicinal plants.
- •Understand methods for the extraction and isolation of natural products.
- •Gain proficiency in the qualitative and quantitative analysis of bioactive compounds.
- •Study the pharmacological activities of natural products.



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•Develop skills in the standardization and quality control of herbal medicines.

Equipment and Materials:

- •Microscopes
- •Plant samples
- •solvents, and reagents

Safety and Good Laboratory Practices (GLP):

- •Personal Protective Equipment (PPE): Proper use of lab coats, gloves, and safety goggles.
- •Chemical and Biological Safety: Safe handling, storage, and disposal of chemicals, solvents, and biological materials.
- •Instrument Maintenance: Regular calibration and maintenance of laboratory instruments.
- •Documentation: Accurate record-keeping and proper documentation of experiments and results.

Conclusion:

The pharmacognosy lab is crucial for understanding the medicinal potential of natural products. It equips students with practical skills in the identification, extraction, and analysis of bioactive compounds, preparing them for careers in natural product research and herbal medicine development.





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4. Human Anatomy and Physiology Lab (215):



Human Anatomy and Physiology Lab (215)

Introduction:

The Human Anatomy and Physiology lab is an essential component of biomedical education. It provides hands-on experience in studying the structure and function of the human body. This lab helps students understand the complex interactions between different body systems and the physiological processes that maintain homeostasis.





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Objectives:

- •Understand the structure and function of various human body systems.
- •Learn to identify anatomical structures through dissection and imaging techniques.
- •Gain proficiency in physiological experiments to assess body functions.
- •Develop skills in using laboratory equipment and techniques relevant to human anatomy and physiology.
- •Analyze and interpret experimental data to understand physiological mechanisms.

Equipment and Materials:

- •Anatomical models and charts
- •Dissection tools (scalpels, scissors, forceps)
- •Specimens (human cadavers, animal organs)
- •Microscopes and slides
- •Blood pressure monitors
- •Stethoscopes
- •Reagents and consumables for biochemical assays

Safety and Good Laboratory Practices (GLP):

- •Personal Protective Equipment (PPE): Using lab coats, gloves, goggles, and masks as required.
- •Biological Safety: Safe handling and disposal of biological specimens and waste.
- •Chemical Safety: Proper use, storage, and disposal of chemicals and reagents.
- •Documentation: Accurate record-keeping and documentation of all experiments and procedures.

Conclusion:

The Human Anatomy and Physiology lab is vital for comprehending the structural and functional aspects of the human body. It provides students with practical experience in dissecting, observing, and experimenting with various physiological processes, thus laying a strong foundation for careers in healthcare, biomedical research, and related fields.





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5. Social Pharmacy Lab (212):



Social Pharmacy Lab (212)

Introduction:

Social Pharmacy is the study of the impact of medications on individuals and society, focusing on the social, behavioral, and economic aspects of pharmacy practice. The Social Pharmacy lab provides practical experience in understanding and addressing public health issues, medication use, patient behavior, and healthcare systems.





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Objectives:

- •Understand the social and behavioral factors affecting medication use and health outcomes.
- •Learn methods to assess and improve patient adherence and medication management.
- •Gain proficiency in health communication and education techniques.
- •Analyze healthcare policies and their impact on pharmacy practice.
- •Develop skills in research and data analysis related to social pharmacy topics.

Equipment and Materials:

- •Patient education materials
- •Charts
- •Videos

Conclusion:

The Social Pharmacy lab is crucial for understanding the broader context of pharmacy practice, including the social, economic, and behavioral factors influencing medication use and health outcomes. It equips students with the skills needed to address public health challenges, improve patient care, and contribute to healthcare policy and research.





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6. Pharmacology lab (210):



Introduction: Pharmacology is the study of drug actions on biological systems. The Pharmacology lab provides practical experience in understanding how drugs interact with biological systems, their therapeutic effects, and potential side effects. It involves the study of pharmacokinetics (drug absorption, distribution, metabolism, and excretion) and pharmacodynamics (drug-receptor interactions and effects).





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Objectives:

- •Understand the mechanisms of action of various drugs.
- •Learn methods to evaluate the pharmacological effects of drugs.
- •Gain proficiency in experimental techniques for studying drug actions.
- •Analyze data to interpret drug efficacy and safety.
- •Develop skills in using laboratory equipment relevant to pharmacology.

Conclusion:

The Pharmacology lab is essential for understanding the effects of drugs on biological systems. It equips students with practical skills in evaluating drug actions, understanding pharmacokinetics and pharmacodynamics, and ensuring the safety and efficacy of therapeutic agents.





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7. Community Pharmacy & Management Lab:



Community Pharmacy & Management Lab

Introduction: The Community Pharmacy & Management lab for second-year Diploma in Pharmacy (D. Pharm) students focuses on the practical aspects of running a community pharmacy. It combines knowledge of drug dispensing, patient interaction, inventory management, and business operations to prepare students for real-world pharmacy practice.





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Objectives:

- •Understand the role and responsibilities of a community pharmacist.
- •Learn techniques for effective patient communication and counseling.
- •Gain proficiency in dispensing medications accurately and safely.
- •Develop skills in inventory management and procurement.
- •Understand the legal and ethical aspects of pharmacy practice.
- •Learn basic business management principles applicable to a pharmacy setting.

Key Activities:

- •Prescription Handling: Learning to read and interpret prescriptions, ensuring legality, appropriateness, and accuracy.
- •Medication Dispensing: Practicing the accurate dispensing of medications, including labeling and packaging.
- •Patient Counseling: Developing communication skills to provide effective patient education and counseling on medication use, side effects, and adherence.
- •Over-the-Counter (OTC) Medications: Understanding the use of OTC medications and providing recommendations to patients.
- •Inventory Management: Techniques for managing pharmacy inventory, including ordering, stocking, and controlling expiry dates.
- •Pharmacy Record Keeping: Maintaining accurate records of prescriptions, patient profiles, and inventory.
- •Business Management: Basics of managing a pharmacy business, including financial management, customer service, and marketing.
- •Legal and Ethical Issues: Understanding the legal and ethical responsibilities of a pharmacist, including confidentiality, professional conduct, and regulatory compliance.

Conclusion:

The Community Pharmacy & Management lab equips D. Pharm students with the practical skills needed to effectively manage a community pharmacy. It emphasizes patient care, accurate dispensing, inventory control, and the application of business principles to ensure the successful operation of a pharmacy.





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8. Biochemistry and Clinical Pathology Lab (208):



Biochemistry and Clinical Pathology Lab (208)

Introduction:

The Biochemistry and Clinical Pathology lab for second-year Diploma in Pharmacy (D. Pharm) students provides essential training in the biochemical analysis and clinical pathology techniques necessary for understanding disease mechanisms and diagnosing health conditions. This lab combines theoretical knowledge with practical skills to prepare students for various diagnostic and analytical roles in healthcare.





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Objectives:

- •Understand the principles of biochemistry and clinical pathology.
- •Learn techniques for analyzing biological samples.
- •Gain proficiency in conducting biochemical tests and interpreting results.
- •Develop skills in maintaining laboratory equipment and ensuring quality control.
- •Understand the clinical relevance of biochemical and pathological tests.

Equipment and Materials:

- •Biochemistry analyzers (spectrophotometers, glucometers)
- •Microscopes and slides
- •Centrifuges and pipettes
- •pH meters and balances
- •Reagents and chemicals for biochemical tests
- •Blood and urine sample collection materials
- •Laboratory glassware (test tubes, beakers, flasks)
- •Reference books and laboratory manuals

Conclusion:

The Biochemistry and Clinical Pathology lab is crucial for D. Pharm students to understand the biochemical basis of diseases and the clinical applications of laboratory tests. It equips students with the skills needed for accurate diagnosis, monitoring, and management of health conditions through laboratory analysis.





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9. Pharmacotherapeutics Lab (207):



Pharmacotherapeutics Lab (207)

Introduction:

The Pharmacotherapeutics lab for second-year Diploma in Pharmacy (D. Pharm) students focuses on the practical application of drug therapy in the treatment of diseases. It aims to equip students with the knowledge and skills necessary to design, implement, and monitor therapeutic regimens effectively, ensuring optimal patient outcomes.





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Objectives:

- •Understand the principles of pharmacotherapy and its role in patient care.
- •Learn to design appropriate therapeutic plans based on clinical guidelines and patient-specific factors.
- •Gain proficiency in monitoring drug therapy and managing adverse drug reactions.
- •Develop skills in patient counseling and education on medication use.
- •Understand the ethical and professional responsibilities in pharmacotherapeutics.

Key Experiments and Activities:

- •Case Study Analysis: Evaluating patient cases to identify therapeutic problems and propose appropriate interventions.
- •Therapeutic Planning: Designing individualized therapeutic plans, including drug selection, dosing, and monitoring strategies.
- •Drug Interaction Checks: Using software tools to check for potential drug-drug and drug-food interactions.
- •Adverse Drug Reaction (ADR) Management: Identifying and managing ADRs through case scenarios and patient simulations.
- •Patient Counseling Simulations: Practicing effective communication techniques for counseling patients on medication adherence, side effects, and lifestyle modifications.
- •Clinical Guidelines Application: Applying evidence-based clinical guidelines to develop treatment plans for common diseases.
- •Therapeutic Drug Monitoring (TDM): Understanding the principles of TDM and its application in optimizing drug therapy for specific medications.

Conclusion:

The Pharmacotherapeutics lab is essential for D. Pharm students to bridge the gap between theoretical knowledge and practical application in patient care. It prepares students to make evidence-based therapeutic decisions, manage drug therapy effectively, and provide high-quality patient education and counseling.





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10. Hospital and Clinical Pharmacy Lab (215):



Hospital and Clinical Pharmacy Lab (215)

Introduction:

The Hospital and Clinical Pharmacy lab for second-year Diploma in Pharmacy (D. Pharm) students focuses on practical training in the specialized aspects of pharmacy practice within hospital settings. It aims to prepare students for roles that involve direct patient care, medication management, and collaboration with healthcare teams to ensure safe and effective drug therapy.





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Objectives:

- •Understand the role of pharmacists in hospital and clinical settings.
- •Learn to manage medication distribution and supply chain within hospitals.
- •Gain proficiency in pharmaceutical care, including patient counseling and medication reconciliation.
- •Develop skills in sterile compounding and preparation of parenteral medications.
- •Understand the regulatory and ethical considerations in hospital pharmacy practice.

Key Experiments and Activities:

- •Medication Order Processing: Practicing medication order entry, verification, and dispensing using hospital pharmacy software.
- •IV Admixtures: Learning aseptic techniques for preparing sterile IV solutions and admixtures.
- •Unit Dose Packaging: Understanding the principles and methods of unit dose packaging for patient safety.
- •Patient Counseling: Simulating patient counseling scenarios to provide information on medication use, side effects, and adherence.
- •Medication Reconciliation: Conducting medication reconciliation to ensure accuracy in patient medication histories and current regimens.
- •Clinical Rounds Participation: Shadowing healthcare teams during clinical rounds to observe pharmacist's role in patient care and medication management.
- •Drug Information Services: Providing drug information and consultations to healthcare providers and patients.
- •Quality Assurance: Participating in quality assurance activities related to medication safety and regulatory compliance.

Conclusion:

The Hospital and Clinical Pharmacy lab is essential for D. Pharm students to gain practical skills and experience in hospital pharmacy operations. It prepares students for roles that involve direct patient care, medication management, and collaboration with healthcare teams to ensure safe and effective drug therapy.

