
Add on/ Value added certificate courses offer by Sandip Institute of Pharmaceutical Sciences 2021- 22

1. Introduction to Analytical Instruments
2. Medical Software Learning
3. Laboratory Safety
4. Communication Skills
5. Introduction to Animal Handling Course
6. Application of Computer in Pharmacy
7. Introduction to methods of extractions And Herbal Drugs
8. First aid
9. Methods of Extraction
10. Introduction to cosmetics science

Introduction to Analytical Instruments

Unit	Topic	Hours
1	Introduction to UV <ul style="list-style-type: none">• Instrumentation• Applications• Method development and validation• Interpretation of UV spectra	8
2	Introduction to HPLC <ul style="list-style-type: none">• Instrumentation• Applications• Method development and validation	8
3	Introduction to IR <ul style="list-style-type: none">• Instrumentation• Applications• Interpretation of IR spectra	7
4	Introduction of GC <ul style="list-style-type: none">• Instrumentation• Applications• Method development and validation	7

Medical Software Learning

Chapter	Topic	Hours
1	<ul style="list-style-type: none"> • Introduction to Medical Software (3 hours) • Overview of pharmacy software systems and their role in pharmacy operations. • Introduction to pharmacy management systems and their benefits. • Discussion on inventory control software for pharmacies. • Ethical considerations and regulatory requirements in pharmacy software usage. 	3
2	<ul style="list-style-type: none"> • Pharmacy Management Systems • Understanding the functionalities and components of pharmacy management systems. 	6

	<ul style="list-style-type: none"> • Navigating a pharmacy management system. • Inventory management and control using pharmacy software. • Prescription processing and medication dispensing. • Reporting and analytics in pharmacy management software 	
3	<ul style="list-style-type: none"> • Prescription Processing and Medication Therapy Management • Workflow and prescription processing using pharmacy software. • Medication therapy management using pharmacy software tools. • Drug interactions, allergies, and contraindications alerts in pharmacy software. • Medication reconciliation and patient counseling. 	8
4	<p>Inventory Control and Ordering</p> <ul style="list-style-type: none"> • Managing pharmacy inventory using software tools. • Setting reorder points and managing stock levels. • Ordering and receiving medications through pharmacy software. 	4

	<ul style="list-style-type: none"> • Utilizing barcodes and scanning technologies for inventory control. 	
5	<p>Billing and Claims Processing</p> <ul style="list-style-type: none"> • Pharmacy billing processes and claims management. • Third-party billing and reimbursement using pharmacy software. • Managing insurance information and prior authorizations. • Handling rejected claims and resubmission processes. 	5
6	<ul style="list-style-type: none"> • Data Security and Privacy • Ensuring data security and privacy in pharmacy software usage. • HIPAA compliance and patient data protection. • Best practices for data backup and disaster recovery. • Training pharmacy staff on data security and privacy. 	4

Laboratory Safety

Chapter	Topic	Hours
1	Hap/ Biotech Lab SOP & Information of- <ul style="list-style-type: none"> • Autoclave • Laminar air flow • Centrifuge • Orbital Shaker 	5
2	Pharmacognosy Lab SOP & Information of- <ul style="list-style-type: none"> • Incubator • Hot air oven • Muffle furnace • Autoclave 	4
3	Pharmaceutics Lab SOP & Information of- <ul style="list-style-type: none"> • Stirrer • Digital Melting point apparatus • Hot air oven • Bulk density apparatus • Preparation room • Aseptic cabinet • Sieve shaker • Hot plate 	6

4	<p>Chemistry Lab</p> <p>SOP & Information of-</p> <ul style="list-style-type: none"> • Hot air oven • Filtration Assembly • Fuming Hood • Hazardous Chemicals • Magnetic Stirrer 	6
5	<p>Pharmacology Lab</p> <p>SOP & Information of-</p> <ul style="list-style-type: none"> • Analgesiometer • Rota rod • Hot plate • Student organ bath • Rotating drum • Neurotransmitter • LED 	5
6	<p>Analysis Lab</p> <p>SOP & Information of-</p> <ul style="list-style-type: none"> • Hot air Oven • Centrifuge • Hazardous Chemicals • Apparatus 	4

Communication Skills

Chapter	Topic	Hours
1	Introduction to Communications <ul style="list-style-type: none"> • Importance • Communication Process • Feedback • Importance of Feedback 	3
2	Barriers to Communications <ul style="list-style-type: none"> • Physiological • Physical • Cultural • Language • Gender • Interpersonal • Psychological • Emotional 	5
3	Letter Writing <ul style="list-style-type: none"> • Types of Letters • Friendly Letter • Business Letter • Letter of Application • Letter of Enquiry • Orders & Complaints 	2
4	Oral Presentation <ul style="list-style-type: none"> • Presentation • Meeting • Notice • Agenda 	3

	<ul style="list-style-type: none"> • Minutes • Dealing with Fears • Techniques of Delivery 	
5	<p>Correct Usage</p> <ul style="list-style-type: none"> • Proper use of Words • Sentence forming • Differentiating pair of words 	2
6	<p>Advertising</p> <ul style="list-style-type: none"> • Importance of Advertisement • Types of Media • Use of Language • Graphic Aids • Use of Graph, Music, Videos 	4
7	<p>Interview Skills</p> <ul style="list-style-type: none"> • Purpose of Interview • Types of Interviews • Do's & Don'ts • Technique of Handling Question 	6
8	<p>Group Discussion</p> <ul style="list-style-type: none"> • Introduction • Communication skills in Discussion • Essentials of Group Discussion • Difference between Group Discussion & Debate • Steps Involved 	5

Introduction to Animal Handling Course

Chapter	Topics	Credit hours
1	Introduction to Different types of Laboratory animals and importance <ul style="list-style-type: none"> • Rats • Mice • Guinea Pigs • Rabbits 	2
2	Ethical bodies for animal studies <ul style="list-style-type: none"> • CPCSEA and approval • OECD guidelines 	6
3	Importance of pre-clinical studies for drug discovery	6
4	Euthanasia techniques of animals after study as per CPCSEA	2
5	Preparation of study protocols according to standard guidelines	2
6	Practical training <ul style="list-style-type: none"> • Animal Handling • Introduction to experimental techniques • Peri-operative care and post operative care • Dosing and different routs of administration like oral, IV, IP, Ocular etc • Blood withdrawal techniques 	8
7	Practical training <ul style="list-style-type: none"> • Collection and preservation tissues for Histopathology • Euthanasia & Anesthesia • Discard of dead animal according to CPCSEA procedure 	4

Application of Computer in Pharmacy

Units	Syllabus	Hours
1	<p>Introduction to Computer Applications in Pharmacy</p> <ul style="list-style-type: none"> • Overview of computer technology and its significance in pharmacy. • Historical development and milestones in the field of computer applications in pharmacy. • Current trends and future prospects of computer utilization in pharmacy. 	2 Hours
2	<p>Basics of Computer Systems and Software</p> <ul style="list-style-type: none"> • Understanding computer hardware, software, and operating systems. • Introduction to common software applications used in pharmacy practice. • Overview of computer network systems and their importance in pharmacy settings. 	4 Hours
3	<p>Pharmacy Information Systems</p> <ul style="list-style-type: none"> <input type="checkbox"/> Introduction to pharmacy information systems (PIS). <input type="checkbox"/> Electronic health records (EHR) and their integration with pharmacy practice. <input type="checkbox"/> Overview of medication order entry and computerized physician order entry (CPOE) systems 	6 Hours

4	<p>Drug Information Management and Retrieval</p> <ul style="list-style-type: none"> • Introduction to drug information databases and resources. • Techniques for efficient drug information retrieval using computer-based tools. • Evaluation of drug information sources for accuracy, reliability, and relevance. • Introduction to clinical decision support systems (CDSS) in pharmacy practice. 	6 hours
5	<p>Computer Applications in Pharmaceutical Research</p>	6 hours
6	<p>Emerging Trends in Computer Applications in Pharmacy</p> <ul style="list-style-type: none"> • Exploration of emerging technologies, such as artificial intelligence (AI) and machine learning in pharmacy. • Internet of Things (IoT) applications in pharmacy practice. • Telepharmacy and its role in expanding access to pharmaceutical care. • Ethical considerations and challenges in the use of computers in pharmacy. 	6 hours

Introduction to methods of extractions And Herbal Drugs

Units	Syllabus	Hours
1	<p>Introduction to extraction of medicinal plants.</p> <ul style="list-style-type: none"> • Overview of various extraction techniques and their significance in pharmacy. • Historical development and milestones in the field of extraction technology. • Current trends and future prospects of extraction methods. • Steps involved in the preparation of various extracts. 	6 Hours
2	<p>Selection of an appropriate extraction method</p> <ul style="list-style-type: none"> • Introduction to maceration, decoction, and hot continuous extraction techniques. • Introduction to counter current extraction, aqueous alcoholic extraction by fermentation, microwave assisted extraction, pressurized extraction techniques. • Selecting an appropriate method for extracting the essential oils. 	6 Hours
3	<p>Selecting the solvent selection and steps involved in extraction of medicinal plants.</p> <ul style="list-style-type: none"> • Types of solvents, solubility and properties of various solvents 	4 hours

	<ul style="list-style-type: none"> • . details of steps involved in extraction of plants e.g. size reduction, extraction, filtration, concentration, drying. 	
4	<p>Extraction techniques for aromatic plants</p> <ul style="list-style-type: none"> • Hydro distillation techniques (water distillation, steam distillation, steam and water distillation.) • Solid phase micro extraction, microdistillation, molecular distillation. 	3 hours
5	<p>Advanced extraction techniques</p> <ul style="list-style-type: none"> • Introduction, Principle, Working, Advantages, Disadvantages and uses of Enzyme extraction, molecular distillation, supercritical fluid extraction, ultrasound extraction. 	6 hours
6	<p>Applications of extraction techniques</p> <ul style="list-style-type: none"> • Super critical fluid extraction of pepper. • Separation of essential oil by hydro distillation (clove oil) • Preparation of water extract of amla fruit by microwave assisted extraction. 	5 hours

First aid

Units	Syllabus	Hours
1	Introduction to First Aid <ul style="list-style-type: none"> • Importance of first aid- Legal and ethical considerations- • Role of a first aider • Personal safety and infection control 	2 Hours
2	Basic Life Support <ul style="list-style-type: none"> • Recognizing an emergency situation • Assessing the scene and calling for help • Performing cardiopulmonary resuscitation (CPR) Using an automated external defibrillator (AED) 	4 Hours
3	Airway Management <ul style="list-style-type: none"> • Airway anatomy and obstruction • Techniques for clearing an obstructed airway • -Rescue breathing and recovery position 	3 Hours
4	Bleeding and Wound Care <ul style="list-style-type: none"> • Different types of wounds and bleeding • Controlling bleeding: direct pressure, elevation, and pressure points • Dressing wounds and applying bandages 	3 hours
5	Fractures, Sprains, and Strains <ul style="list-style-type: none"> • Types of fractures, sprains, and strains • Initial management and immobilization techniques • Recognizing and managing dislocations 	3 hours

6	Burns and Thermal Injuries <ul style="list-style-type: none"> • Classification of burns • First aid for thermal burns, chemical burns, and electrical burns • Managing sunburn and frostbite 	2 hours
7	Environmental Emergencies <ul style="list-style-type: none"> • Heat-related emergencies: heat exhaustion and heatstroke • Cold-related emergencies: hypothermia and frostbite • Allergic reactions and anaphylaxis • Poisoning and overdose management 	4 hours
8.	Medical Emergencies <ul style="list-style-type: none"> • Seizures and epilepsy • Diabetic emergencies: hypoglycemia and hyperglycemia • Asthma attacks and respiratory distress • Stroke recognition and initial care 	4 hours
9.	Musculoskeletal Injuries <ul style="list-style-type: none"> • Back and neck injuries • Spinal immobilization techniques • Soft tissue injuries: bruises, strains, and sprains 	2 hours
10.	Pediatric First Aid <ul style="list-style-type: none"> • Unique considerations for providing first aid to children • Recognizing and managing common pediatric emergencies • CPR and choking in infants and children 	2 hours
11.	Review and Practical Skills <ul style="list-style-type: none"> • Recap of key concepts and techniques • Hands-on practice of CPR, bandaging, splinting, etc • Scenario-based simulations and role-playing exercises 	1 hours

Basic Principles in Cosmetic Technology

Units	Syllabus	Hours
1	<ul style="list-style-type: none"> Introduction to Cosmetic Technology Definition and scope of cosmetic technology Historical overview of cosmetics Role of cosmetic technologists Introduction to cosmetic regulations and standards	5 Hours
2	<ul style="list-style-type: none"> Cosmetic Ingredients Classification of cosmetic ingredients (active vs. inactive) Commonly used ingredients: emollients, humectants, preservatives, colorants, fragrances, etc. Functions and properties of cosmetic ingredients Safety considerations and regulations for cosmetic ingredients	05 Hours
3	<ul style="list-style-type: none"> Cosmetic Formulations Introduction to cosmetic formulation principles Formulation types: creams, lotions, gels, powders, etc. Formulation ingredients and their interactions Formulation techniques and procedures Packaging considerations for cosmetic formulations	05 Hours

<p>4</p>	<p style="text-align: center;">• Manufacturing Processes in Cosmetics</p> <p>Overview of cosmetic manufacturing processes Mixing and blending techniques Emulsification methods Heating and cooling processes Filling, packaging, and labelling of cosmetic products</p>	<p>5hours</p>
<p>5</p>	<p style="text-align: center;">• Quality Control in Cosmetics</p> <p>Importance of quality control in cosmetic production Quality control tests: physical, chemical, and microbiological Good Manufacturing Practices (GMP) for cosmetics Stability testing and shelf-life determination Documentation and record-keeping in quality control</p>	<p>05 hours</p>
<p>6</p>	<p style="text-align: center;">• Stability and Shelf-Life of Cosmetics</p> <p>Factors affecting cosmetic product stability Formulation considerations for stability Packaging and storage conditions for maintaining product integrity Testing methods for assessing product stability Determining the shelf-life of cosmetic products Regulatory authorities and guidelines for cosmetics</p>	<p>05 hours</p>

Introduction to methods of extractions

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4	<p>Extraction techniques for aromatic plants</p> <ul style="list-style-type: none"> • Hydrodistillation techniques (water distillation, steam distillation, steam and water distillation.) • Solid phase micro extraction, microdistillation, molecular distillation. 	3 hours
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