

OPJS UNIVERSITY SCHOOL OF PHARMACY



SCOPE OF PHARMACY

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DEFINITION OF PHARMACY

1. Pharmacy: Derived from the Greek word Pharmakon means medicine or drug.
2. Pharmacy: Is the art and science of preparing, dispensing and proper utilization of medications and the provision of drug-related information to the public.

DEFINITION OF DRUG

- ▶ According to the FDA (Food and Drug Administration), Drug is a substance intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease.



▶ **The material may be:**

- 1. Natural in origin (plant-animal-minerals).**
- 2. Synthetic drugs like aspirin.**
- 3. Semi synthetic like ampicillines.**



PHARMACY PROFESSION

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graph TD; A[PHARMACY PROFESSION] --> B[Patient services]; A --> C[Drug Services]; A --> D[Innovating new Drugs]; B --> B1[Direct Activities]; B --> B2[Indirect activities]; C --> C1[Direct Activities]; C --> C2[Indirect activities]; D --> D1[Screening for effect and safety]; D --> D2[Analysis]; D --> D3[Formulation]; D --> D4[In process quality control]; D --> D5[Production]; D --> D6[Final quality control]; D --> D7[Distribution];
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Patient services

Direct Activities

- Hospital Pharmacy
- Clinical Pharmacy
- Community Pharmacy
- Bio chemical analysis- National Screening
- Microbiological analysis - Preventive Measures
- Immunological analysis - For epidemic diseases

Drug Services

Indirect activities

- Drug promotion
- Family planning program
- Dehydration treatment program

Innovating new Drugs

- Screening for effect and safety
- Analysis
- Formulation
- In process quality control
- Production
- Final quality control
- Distribution

PHARMACIST CAREER

1. **Community pharmacist**
2. **Hospital pharmacist**
3. **Clinical pharmacist**
4. **Industrial pharmacist**
5. **Medical representative pharmacist**
6. **Academic (research) pharmacist**

AIMS OF MODERN PHARMACEUTICAL EDUCATION

Provide scientific background

Provide professional skills and knowledge

Provide business training

Provide broad general education

REAL PHARMACY PRACTICAL CLASSES PROVIDES KNOWLEDGE OF

- **Basic Laboratory skills**
- **Handling of apparatus**
- **Handling of chemicals**
- **Handling of biological compounds**
- **Safety measures**
- **Documentations**

Nature of practical classes in pharmacy

1. **Evaluation of drugs**
2. **Compounding of drugs**
3. **Extraction of drugs from natural source**
4. **Titrations**
5. **Synthesizing new drugs**
6. **Evaluation of biological properties**
7. **Manufacturing formulations**
8. **Packing of drugs**
9. **Stability studies**
10. **Health and safety measures**

LIST OF PHARMACY PRACTICAL'S AND LABORATORIES

- 1. Pharmaceutics**
- 2. Pharmacognosy**
- 3. Pharmaceutical chemistry**
- 4. Biochemistry**
- 5. Anatomy physiology**
- 6. Pharmacology & toxicology**
- 7. Pharmaceutical Analysis**
- 8. Pharmaceutical biotechnology**
- 9. Clinical Pharmacy**

SOP LABORATORY OF PHARMACEUTICS



Learnings in Pharmaceuticals laboratory

- ▶ **Compounding of formulations such as**
 - Solutions**
 - Syrups**
 - Ointment**
 - Cream**
 - Tablet etc.**
- ▶ **Evaluation of formulations to ensure quality**
- ▶ **Stability studies to ensure safety**
- ▶ **Development of new formulations**

SOP Laboratory of Pharmaceutical Chemistry



Learnings in Pharmaceutical chemistry laboratory

- ▶ **Study of chemical agents in view to ensure quality and efficacy such as**

Assay (%purity of drugs)

Purities and impurities

Qualitative studies

Quantitative studies

SOP laboratory of Pharmacognosy



SOP

Learnings in Pharmacognosy laboratory

- ▶ **Study of herbal drugs in view of**

Identification of herbs by

morphological studies

macroscopic & microscopic studies

phytochemical studies

- ▶ **Extraction methods**
- ▶ **Isolation techniques**
- ▶ **Preparation of herbal formulations**

SOP laboratory of Anatomy physiology



Learnings in Anatomy Physiology Laboratory

- ▶ **Study of body organs**
- ▶ **Study of functions of body organs**
- ▶ **Study of vital signs**

Pulse rate

Heart rate

BP

Body temperature

Respiratory rate

- ▶ **Counting of blood elements**

SOP laboratory of Pharmaceutical Analysis



Learnings in Pharmaceutical Analysis laboratory

- ▶ **Analysis of chemical agents in view of establishing its chemical nature such as**

Assay (%purity of drugs)

Standardization (HPLC & HPTLC)

Structural analysis (UV, IR, NMR & MASS)

SOP laboratory of Pharmaceutical Biotechnology



Learnings in Pharmaceutical Biotechnology laboratory

- ▶ ***Invitro* studies such as**
 - Nitric oxide scavenging activity
 - DPPH radical scavenging activity
 - Hydrogen peroxide scavenging activity
- ▶ **Cytotoxic studies of cancer cells**
- ▶ **Microbial assays**

SOP laboratory of Pharmacology & toxicology



Learnings in Pharmacology and toxicology laboratory

- ▶ ***Invivo studies***

 - Bio assays using animals and isolated organs

 - Analgesic

 - Antipyretic

 - Anti-inflammatory

 - Anticancer

 - Antiulcer etc

- ▶ **Developing new animal models**

- ▶ **Toxicological studies**

SOP of Pharmacy Practice



Learnings in Pharmacy practice

- **Compounding of drugs**
- **Dispensing of drugs**
- **Labeling of drugs**
- **Learning expiry details**
- **Clean and organize the working area.**
- **Maintenance of stock registers and documents**
- **Proper recording of the drugs (inventory control)**

JOB OPPORTUNITIES

Central government opportunities

- Pharmacist in railway, harbor, army & health services

State government opportunities

- Drug inspector
- Forensic scientist
- Lecturer / Professor in Government Colleges
- Pharmacist in Government hospitals

JOB OPPORTUNITIES

Pharmaceutical Industries

- Manufacturing pharmacist
- Quality control & quality assurance
- R&D scientist
- Pharmacist in formulation development
- Production Pharmacist

JOB OPPORTUNITIES

Marketing

- Medical Representatives
- Medical Sales Executives
- Areas business manager

Self employment

- Medical wholesaler
- Medical retailer
- Own industry (small & large scale)

JOB OPPORTUNITIES

Foreign employments

- Pharmacist in Government and Private hospitals
- Pharmacy teachers in Government and Private Universities
- Marketing professionals

JOB OPPORTUNITIES

Other opportunities

- Lecturer / Assistant/Associate Professor
in private Colleges
- Medical Coding & Billing
- Medical Transcriptionist
- Medicinal Plant Cultivator
- Medicinal Plant Raw Material Trader

HIGHER STUDIES

- M.Pharm in Pharmaceutics, Pharmaceutical Chemistry, Pharmacognosy, Pharmacology, Pharmaceutical analysis, Pharmacy Practice, Biotechnology, Pharmacognosy and Phytochemistry, Industrial pharmacy etc.,
- Pharm.D.
- PG Diploma in Hospital administration
- MBA in Hospital Management
- M.Sc. in Fermentation, Forensic & Bio-informatic sciences
- Master of Business Administration
- Doctor of Philosophy (Ph.D)

Thank you

From

OPJS UNIVERSITY

SCHOOL OF PHARMACY &

PHARMACY DEPARTMENT...

