

## **PHARM-D DEGREE PROGRAMME UNIVERSITY OF SWABI**

### **1. Program Description & Learning Outcomes.**

In pursuance of the Higher Education Commission Ordinance 2002 along with the professional mandate of the Pharmacy Council of Pakistan under the Pharmacy Act 1967, University of Swabi, through its Academic Council adopted the Curriculum for its Doctor of Pharmacy (Pharm D) Programme in 2013.

### **Aims & Objectives of the PharmD Programme:**

The aims and objectives of Doctor of Pharmacy (Pharm D) curriculum are to prepare graduates who will have the capacity, up to date knowledge, strong ethical values, behaviour, communication, writing and social skills that will enable them to pursue careers in:

1. Pharmaceutical care in health systems and community environment where appropriate medication usage and patient's safety is paramount.
2. Pharmaceutical industry and its quality systems,
3. Academia, research, and development.

### **Aims:**

To prepare pharmacy graduates whose scientific knowledge and skills enable them to work with the pace to ensure the quality in the design, manufacture, distribution, and safe and effective use of pharmaceuticals in the society and clinical setting.

### **Objectives:**

1. To keep pace with the advancements in the modern sciences.
2. To prepare the students to fulfil their industrial needs and they should be well versed with the basic medical and pharmaceutical sciences in order to prepare a dosage regimen for an individual patient.
3. Community pharmacy practice should be comprehensive.
4. Internship in various disciplines of Pharmacy should be implemented.
5. Update the syllabi of the Pharmacy keeping in view the current proposals, requirements, and the Needs of the profession.

6. To make our graduates more skilful, competitive, and knowledgeable both practically and theoretically.
7. To cater the local and international pharmacy needs.
8. Uniformity in the curriculum of Pharmacy at national level.
9. Credit hours should be harmonized i.e., practical and theory credit hours.
10. To make a health care practitioner who is expert in the use of medicine in all practical fields and are capable of disease state management specially to improve public health at large.
11. Upon graduation, the graduates should have the capacity, knowledge, and capability to undertake career in;
12. Enhance patient safety to safe medication usage in community and health care systems
13. To work in the pharmaceutical industry and its quality system
14. To engage in academics and research i.e., Practice and Academics.
15. To prepare students as good human beings in serving the community i.e., ethics, communication skills, writing skills, behaviour etc.
16. After graduation, he should become a member of health care team.
17. To help the stakeholders of pharmacy about the implications of WTO and TRIPS.
18. The syllabi should be more practical rather theoretical.
19. To include new things regarding OTC Pharmacy (Patient Pharmacist interaction).
20. To prepare pharmacy graduates for better pharmacy practice in the areas including clinical pharmacy, community pharmacy, hospital pharmacy and industrial pharmacy.
21. To add further in the curriculum clinical oriented areas as per demand of Pharm-D degree.
22. To update the current syllabi according to the needs of the national and international demand.
23. To develop graduates capable of catering the needs of national and international health organizations or authorities to help adapt the paradigm shift in the health care system.
24. To bring uniformity in the contents of the syllabi in line with International trends/ international universities imparting Pharm D education.
25. To produce the graduates to meet the challenges of 21<sup>st</sup> century of health care problems.

## 2. STUDY PLAN

**PHARM D FIVE-YEAR COURSE  
SCHEME OF STUDIES FOR ANNUAL SYSTEM**

**First Professional**

<b><u>Theory</u></b>			
<b>Paper #</b>	<b>Subject</b>	<b>Marks</b>	<b>Teaching Hrs./week</b>
1.	Pharmaceutical Chemistry-I (Organic)	100	4
2.	Pharmaceutical Chemistry-II (Biochemistry)	100	4
3.	Pharmaceutics-I (Physical Pharmacy)	100	4
4.	Physiology	100	4
5.	Anatomy & Histology	50	2
6.	English	100	4
	<b>Total</b>	<b>550</b>	<b>22</b>
<b><u>Practical Training</u></b>			
7.	Pharmaceutical Chemistry-I (Organic)	100	2
8.	Pharmaceutical Chemistry-II (Biochemistry)	100	2
9.	Pharmaceutics-I (Physical Pharmacy)	100	2
10.	Physiology	100	2
11.	Anatomy & Histology	50	2
	<b>Total</b>	<b>450</b>	<b>10</b>
	<b>Gande Total</b>	<b>1000</b>	<b>32</b>

**Second Professional**

<b><u>Theory</u></b>			
<b>Paper #</b>	<b>Subject</b>	<b>Marks</b>	<b>Teaching Hrs./week</b>
1.	Pharmaceutics-II (Dosage Forms Science)	100	4
2.	Pharmacology and Therapeutics-I	100	4
3.	Pharmacognosy-I (Basic)	100	4
4.	Pharmaceutics-III (Pharmaceutical Microbiology & Immunology)	100	4
5.	Pakistan Studies and Islamic Studies (Compulsory)	100	4
6.	Pharmacy Practice-I (Pharmaceutical Mathematics and Biostatistics)	100	4
	<b>Total</b>	<b>600</b>	<b>24</b>
<b><u>Practical Training</u></b>			
7.	Pharmaceutics-II (Dosage Forms Science)	100	2
8.	Pharmacology and Therapeutics-I	100	2
9.	Pharmacognosy-I (Basic)	100	2
10.	Pharmaceutics-III (Pharmaceutical Microbiology & Immunology)	100	2

	<b>Total</b>	<b>400</b>	<b>8</b>
	<b>Grande Total</b>	<b>1000</b>	<b>32</b>

**Third Professional**

<b><u>Theory</u></b>			
<b>Paper #</b>	<b>Subject</b>	<b>Marks</b>	<b>Teaching Hrs./week</b>
1.	Pathology	50	2
2.	Pharmacology and Therapeutics-II	100	4
3.	Pharmacognosy-II (Advanced)	100	4
4.	Pharmacy Practice-II (Dispensing, Community, Social & Administrative Pharmacy)	100	4
5.	Pharmaceutical Chemistry-III (Pharmaceutical Analysis)	100	4
6.	Pharmacy Practice -VIII (Computer & its Applications in Pharmacy)	50	2
	<b>Total</b>	<b>500</b>	<b>20</b>
<b><u>Practical Training</u></b>			
7.	Pathology	50	2
8.	Pharmacology and Therapeutics-II	100	2
9.	Pharmacognosy-II (Advanced)	100	2
10.	Pharmacy Practice-II (Dispensing, Community, Social & Administrative Pharmacy)	100	2
11.	Pharmaceutical Chemistry-III (Pharmaceutical Analysis)	100	2
12.	Pharmacy Practice -VIII (Computer & its Applications in Pharmacy)	50	2
	<b>Total</b>	<b>500</b>	<b>12</b>
	<b>Grande Total</b>	<b>1000</b>	<b>32</b>

**Fourth Professional**

<b><u>Theory</u></b>			
<b>Paper #</b>	<b>Subject</b>	<b>Marks</b>	<b>Teaching Hrs./week</b>
1.	Pharmacy Practice-III (Hospital Pharmacy)	100	4
2.	Pharmacy Practice -IV (Clinical Pharmacy-I)	100	4
3.	Pharmaceutics-IV (Industrial Pharmacy)	100	4
4.	Pharmaceutics-V (Biopharmaceutics and Pharmacokinetics)	100	4
5.	Pharmaceutics-VI (Pharmaceutical Quality Management)	100	4
	<b>Total</b>	<b>500</b>	<b>20</b>
<b><u>Practical Training</u></b>			
6.	Pharmacy Practice -IV (Clinical Pharmacy-I)	100	-
	A. Department Lab.		2
	B. Clinical Pharmacy Clerkship		[A total of 150 hrs.]
7.	Pharmaceutics-IV (Industrial Pharmacy)	100	2

8.	Pharmaceutics-V (Biopharmaceutics and Pharmacokinetics)	100	2
9.	Pharmaceutics-VI (Pharmaceutical Quality Management)	100	2
	<b>Total</b>	<b>400</b>	<b>8</b>
	<b>Grande Total</b>	<b>900</b>	<b>28</b>

**Fifth Professional**

<b><u>Theory</u></b>			
<b>Paper #</b>	<b>Subject</b>	<b>Marks</b>	<b>Teaching Hrs./week</b>
1.	Pharmaceutical Chemistry-IV (Medicinal Chemistry)	100	4
2.	Pharmacy Practice -V (Advanced Clinical Pharmacy-II)	100	4
3.	Pharmaceutics-VII (Pharmaceutical Technology)	100	4
4.	Pharmacy Practice -VI (Forensic Pharmacy)	100	4
5.	Pharmacy Practice-VII (Pharmaceutical Management and Marketing)	100	4
	<b>Total</b>	<b>500</b>	<b>20</b>
<b><u>Practical Training</u></b>			
6.	Pharmaceutical Chemistry-IV (Medicinal Chemistry)	100	2
7.	Pharmacy Practice -V (Advanced Clinical Pharmacy-II) [Clinical Pharmacy Clerkship along with research project and report]	100	[A total of 300 hrs.]
8.	Pharmaceutics-VII (Pharmaceutical Technology)	100	2
	<b>Total</b>	<b>300</b>	<b>4</b>
	<b>Grade Total</b>	<b>800</b>	<b>24</b>
	<b>Grande total Marks of 5 Professions</b>	<b>4700</b>	<b>32</b>

**PHARM D FIVE YEARS (ANNUAL SYSTEM) TEACHING AND TRAINING HRS. SUMMARY**

<b>Profession</b>	<b>Teaching Hrs./Week</b>	<b>Training Hrs./Week</b>	<b>Total Hrs./Week</b>
1 <sup>st</sup> Profession	22	10	32
2 <sup>nd</sup> Profession	24	8	32
3 <sup>rd</sup> Profession	20	12	32
4 <sup>th</sup> profession	20	8	28
5 <sup>th</sup> Profession	20	4	24
<b>Total</b>	<b>106</b>	<b>42</b>	<b>148</b>
<b>Professional Training</b>			
<b>Clinical Pharmacy (4<sup>th</sup> &amp; 5<sup>th</sup> Professions) Clerkship a Total of:</b>			<b>450 hrs.</b>
<b>An Internship, in any of the given tracks is mandatory for the award of degree i.e., Pharmaceutical Industry, Community Pharmacy, Hospital / Clinical Pharmacy, Pharmaceutical Marketing, Management &amp; Regulatory Affairs a total of:</b>			<b>450 hrs.</b>

### 3. TRAINING PLAN.

#### CLINICAL PHARMACY CLERKSHIP TRAINING

- Outcome of the Training Program
- Training location
- Evaluation method

#### Outcome of the Training Program

- **Real-World Preparedness:**  
Equipping graduates to handle real-world scenarios, including training to monitor pharmacotherapy-related clinical outcomes and address complications arising from medication.
- **Medication System Navigation:**  
Safely and efficiently navigating the medication system, encompassing pharmacy informatics, medication order validation, medication safety principles, and handling both sterile and non-sterile products.
- **Pharmacist Care Practices:**  
Practicing pharmacist care by conducting effective patient assessments, follow-ups, and identifying, resolving, and preventing drug-related problems.
- **Research Project Completion:**  
Developing skills in project management, organization, problem-solving, critical appraisal of literature, data analysis, evaluation, and presentation through the completion of a research project.
- **Clinical knowledge:**  
Undertaking practical training during clinical clerkships, where students engage in different hospital units, such as pediatrics, psychiatry, pulmonology, cardiology, dermatology, and gynecology.
- **Dose Adjustments and Interactions Monitoring:**  
Collecting patient cases and monitoring for drug-related problems, dose adjustments in hepatic and renal impairments, and drug-drug interactions.
- **Hospital Exposure:**  
Participating in medical rounds, familiarizing themselves with drug distribution, procurement, and consumption through hospital management and information systems (HMIS).
- **Effective Communication:**  
Developing effective interpersonal and communication skills to enhance patient care and contribute to hospital pharmacy practice.

### **Training Locations:**

Gaining exposure in diverse healthcare settings, including public medical teaching institutions/hospitals and private tertiary care hospitals. These training centers have well developed and organized pharmacy services and include:

- MTI Lady Reading Hospital (Medical Teaching Institute), Peshawar.
- MTI Gaju Khan Teaching Hospital (Medical Teaching Institute), Swabi.
- MTI Mardan Medical Complex (Medical Teaching Institute), Mardan.
- Rehman Medical Institute, Peshawar, and
- Northwest General Hospital, Peshawar.

### **Description of Training Program**

#### **• 4<sup>th</sup> Profession Pharm D:**

- The training plan entails 150 contact hrs. in hospital settings. Students, organized into groups, monitor patient cases for drug-related issues, dose adjustments, and interactions.
- Departmental Lab Work: 2 hrs. per week.

#### **• 5<sup>th</sup> Profession PharmD:**

- The 5th-year clerkship spans 300 contact hrs. in hospital settings involving medical rounds, familiarity with hospital management systems, and weekly patient case presentations aligned with standard treatment guidelines.
- Clinical pharmacy project: Short research projects enhance interpersonal and communication skills for effective patient care.

### **Clinical Training Evaluation:**

#### **• 4<sup>th</sup> Profession PharmD:**

- External Examiner evaluation of cases collected during training.
- Written-paper on topics related to clinical pharmacy practice
- Viva-Voce examination
- Total 100 Marks.

#### **• 5<sup>th</sup> Profession PharmD:**

- These evaluation methods aim to provide a holistic assessment of the students' knowledge, skills, and abilities acquired during the pharmacy clinical training. The inclusion of external examiner assessments ensures an unbiased and thorough evaluation process.
- External Examiner evaluates the project report completed by students during clinical pharmacy training that involves the following:
  - Comprehensive research project completion demonstrating various skills.

- Showcasing project management abilities in organizing and executing the research.
- Critical appraisal of existing literature relevant to the chosen research topic.
- Proficiency in data analysis and interpretation.
- Effective evaluation and presentation of research findings.
- External examiner assessment to maintain objectivity and rigor in evaluation.

**Internship:**

An Internship, in any of the given tracks is mandatory for the award of degree i.e., Pharmaceutical Industry, Community Pharmacy, Hospital / Clinical Pharmacy, Pharmaceutical Marketing, Management & Regulatory Affairs a total of 450 hours.

**4. Program link on the university's website.**

<https://www.uoswabi.edu.pk/cmcategory/index/24>