

**KNOWLEDGE
& BEYOND...**



FOR FURTHER INFORMATION

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**UNIVERSITY OF SWABI
DEPARTMENT OF PHARMACY**

**STUDY
GUIDE
| 2024
-**

PHARM.D

**1st - 5th
Proff**

University of Swabi endeavors to develop in each student, the virtues and values of humanity, dignity and worthiness: a desire and capacity for critical reasoning; an appreciation and understanding of the social sciences, biomedical sciences and arts; the ability to communicate; and the skills for acquiring new knowledge and meeting the challenges of an exponential growth of information.

The institution focuses on developing competence, personal fulfillment and responsible leadership in the professions, sciences, and in public service.

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(1) INTRODUCTION

1.1. WHY WE NEED STUDY GUIDE?

- To inform students how the learning programme has been organized year wise and how it will be implemented.
- To help students to organize or to manage their studies throughout the year.

The Guide provides:

- Information on organization and management of the year. This will help you to contact the right individual in case you have any difficulty.
- A description of the course objectives, which you will be expected to achieve at the end of each course.
- Information on learning methods that you will experience during the course. The methods include Tutorials, Lectures, Skills/Practical's, Presentations and Visit to Pharmaceutical Industries. These learning methods should help you to achieve the course objectives.
- A description of the learning resources available for the year. These may include books, videos and others.
- Information regarding rules and regulations of annual examination.
- Information on the methods of assessments that will be held to determine your achievement of objectives.

1.2. THE CURRICULUM:

Curriculum Organization:

One annual curriculum shall be offered in one academic year with credit hours of 32 per week.

Weekly Schedule:

This is posted on the notice board weekly. You **MUST** read the notice board to find out the schedule and/or announcement. All courses and continuous assessment of the annual will be held according to the schedule.

Course Number:

Each course is identified by a number.

Course Objective:

All courses have defined objectives in terms of what students are expected to achieve on completion of each course. Your academic

experiences including learning methods and assessment have been designed relevant to the objectives.

1.3. LEARNING METHODS:

The following learning methods/strategies are used to promote better understanding:

- ◆ Tutorials
- ◆ Lectures
- ◆ Practicals
- ◆ Assignments
- ◆ Presentations / Seminars
- ◆ Seminars
- ◆ Field visits
(Hospitals / Pharmaceutical Industries)

In addition to the above programme emphasis is given on:

- **Self-Directed Study:** Students may achieve objectives by assuming responsibilities of their own learning **HOW?** By sharing and discussing with peers, working individually, seeking information from LRC, inter and intranet, teachers and resource persons within the Faculty. This is possibly achieved by utilizing scheduled self-study periods in the Faculty.

(2) UNIVERSITY OF SWABI (UoS) STUDENTS CODE OF CONDUCT

2.1. INTRODUCTION:

- 2.1.1. The UoS was established with the objective of developing human resources appropriately equipped to deal with the problems which are of particular relevance to its environment. The University considers its students to be mature and responsible individuals and makes all efforts for developing and matching professional attributes.
- 2.1.2. The University expects that behavior of the students within and outside the premises of the University will be in conformity with the highest standards of honesty, morality and discipline. The students will respect the rights and privileges of the members of the university community at all times. They will refrain from conduct that might damage the reputation of the University or any of its programmes.
- 2.1.3. The students will refrain from any conduct that may lead to the disruption of an academic programme of the University and from cheating and plagiarism in any set up of the University.

2.2. THE CONDUCT OF STUDENTS:

2.2.1. General Conduct:

All students shall present themselves with dignity befitting their status as mature, professional and responsible citizens.

- a. Students in all settings on campus are expected to dress in a simple and decent manner.
- b. Students individually or as a group, will obtain written UoS approval before organizing or assisting in organizing demonstrations, rallies or picketing on campus.
- c. Students individually or as a group will refrain from disseminating or cause to disseminate material or engage in activity which hinder or prevent the full participation of another person or group in the life of the University.
- d. Religious and social activities held on campus must have prior written University authorization.
- e. Students will ensure that their actions do not endanger or threaten the health, safety or wellbeing of other persons.

- f. Students will refrain from such any behavior, which can be interpreted by others as sexual harassment.
- g. Students will obtain written authorization before making any public statements, communication, or correspondence with the press or other media for mass communication on behalf of the University.
- h. Unless otherwise authorized in writing the students will refrain from inviting government and/or foreign dignitaries, ministers, representatives of foreign governments/agencies or other public personalities in their official capacity on campus.
- i. Students will refrain from any activity, which is subversive of discipline and may constitute misconduct.

2.2.2. ACADEMIC CONDUCT:

All students will diligently apply themselves to their registered courses of study. They will maintain confidentiality of information and will use it in no other circumstances than for professional and authorized academic purposes.

- a. Students are required to attend lectures, tutorials, seminars, Practicals, industrial tours / visits, clerkships, examinations and other scheduled courses and activities assignments given by the except for such reasons acceptable to the University.
- b. Students will ensure that any original academic writing, including essays, theses, research projects or assignments in a course or programme of study either represents their own words, ideas, images or data is appropriately referenced.
- c. Students will obtain authorization, before procuring, possessing, distributing or receiving any confidential material pertaining to academic tests, examinations and research or laboratory results from any source.
- d. Students will respect the confidentiality of information pertaining to patients, including their records or files.

2.3 RULES:

- Students of UOS are required to exhibit good attitude and discipline. Guidelines have been delineated in the University's Code of Conduct ("Code of Conduct") framed by the University to provide students with a reference to the standards for discipline. It is expected that all students will strictly uphold and adhere to the Code of Conduct, but in cases where there are grounds to suspect a breach or any infringement of the Code of Conduct or disregard or contempt of the Code of Conduct, disciplinary action may be initiated for such behavior committed either within or outside the premises of the

University or any establishment, project or setting thereof anywhere located. The reference to the expression "University" shall mean and include (unless the context provides otherwise), any establishment, project or setting of the University located anywhere in the world.

- The disciplinary procedure shall be followed on any breach and/or infringement of the Code of Conduct as defined hereunder. Along with the offences which are liable to disciplinary action and the decision-making authority.

2.4 DISCIPLINARY OFFENCE:

Without prejudice to the generality of the provisions of the Code of Conduct and the provisions of Rules 3.3.1 and 3.3.2 the following conduct will constitute disciplinary offence.

2.4.1 MINOR OFFENCES:

- Repeated failure to abide to scheduled instruction, practical work, examination, clinical assignments and or incite other students to act likewise.
- Smoking, eating, drinking in prohibited areas in settings of the University.

NOTE: All minor offenses will be dealt with as major if repeated.

2.4.2 MAJOR OFFENCES:

- Assault on students, members of staff, or patients.
- Any form of unauthorized picketing, rallies, demonstrations or organized obstructions of any student/ University staff/ University Hospital function in any manner whatsoever.
- Any attempt to conceive, design or affect any plan of whatever nature whose object or consequence is to disrupt academic programme of the University or its operations.
- Malicious acts, theft, willful damage or misuse of University property.
- Disorderly conduct and/or molestation and disrespect of other members of the University community within and outside the University premises.
- Bringing unauthorized persons in the university premises or any other academic settings.
- Cheating, plagiarism and / or use of unfair means in examinations or any other academic settings.
- Possession, use and display of firearms, drugs, alcohol or other contraband items in campus or at University related events.

- Any other offence, which is considered contrary to the academic atmosphere.

2.5 DISCIPLINARY ACTIONS:

The University shall have the powers to impose any one or more of the following actions. However, nothing will preclude the University from requiring any student or parent or both to execute any indemnity bond, assurance or undertaking to support expected conduct throughout his/her stay at the University.

MINOR DISCIPLINARY OFFENCE will be liable to one or more of the following sanctions:

- Counseling of the student.
- Probation: A student can be placed on probation for a specific period of time with mandatory periodic Counseling.
- A letter of warning or reprimand to the student with information to the parents.
- The payment of fine by the offender commensurate with the nature and gravity of the offence committed amounting up to 5% of the annual fees of the student.

MAJOR DISCIPLINARY OFFENCE will be liable to one or more of the following sanctions:

- Suspension from the University for a Specific Period.
- Expulsion from the University.
- Any other penalty, which the University may deem, fit to impose.

2.6 DISCIPLINARY PROCEDURE:

The following steps will be followed for disciplinary procedure.

- 2.6.1** Any disciplinary offence not of serious nature may be brought to the attention of the offender by an affected student through the /staff member concerned of the University. The purpose of this in the first instance is to resolve the matter through constructive criticism, counseling and/or admonition. The expression “offence not of serious nature” appearing herein above shall be such offence as is considered as an offence of not a serious nature by the /staff member of the University in his/her sole discretion. The expression “/staff member of the University” shall, in relation to the following Units of the University namely:
Faculty of Pharmacy and proctorial committee mean the members of the staff/ nominated by the head of each of the said Units as the member of the staff/ to deal with matters related to students’ complaints or any offence by students.

- 2.6.2** If the matter is not resolved or the student repeats an offence or if the offence is a serious one, the head of the Unit concerned of the University i.e. (i) in case of the Faculty of Pharmacy – the Chair Person, He/She may act upon the recommendation of the Disciplinary Committee or in accordance with his/her judgment.

The decision shall then be communicated or in accordance with his/her judgment. The decision shall then be communicated to the offender. The matter shall be resolved normally within fourteen working days from the day of Head of the Unit is informed of the offence.

- 2.6.3** A student may appeal in writing against such a decision to the Head of his Unit within ten working days of the decision having been communicated in writing to the student. The student shall within the said period of time submit his/her appeal to the Head of his Unit. The Head of the Unit shall request the Vice Chancellor to constitute an Appeal Committee and refer the matter to it for consideration of the Appeal.

- 2.6.4** The Appeal Committee shall take up and review the case and communicate its decision in writing to the VC normally within ten working days. The VC may act upon the recommendations of the Appeal Committee or in accordance with his/her own judgment.

- 2.6.5** If the decision is not acceptable to the student, he/she may request a final review by the VC. The VC’s decision thereafter shall be final and binding.

2.7 STRUCTURE OF THE DISCIPLINARY AND APPEAL COMMITTEES

- 2.7.1** The structure of Disciplinary committee shall consist of one member from each department and other staff member consist of Proctor and assistant and in case of the Faculty of Pharmacy the Chair person. The Chairperson and members may serve for three years. They may be appointed for another term of two years. The Committee shall be appointed by the UOS Academic Council.

- 2.7.2** A University Appellate Committee shall be appointed as and when required, by the VC. It shall consist of three members (one of whom shall be the chairperson in case of Faculty of Pharmacy) who have not been associated with counseling or with investigation of the student’s current or his/her any previous offence.

2.7.3 The Disciplinary Committee and the Appellate Board will have authority to call for evidence or questioning any person witness to the offence/event reported for investigation to the disciplinary committee.

2.8 DISCIPLINARY AUTHORITY:

Notwithstanding anything contained herein, the VC shall be the final disciplinary authority of the University with powers to:

- a. Appoint or change a Disciplinary Committee, and define disciplinary procedures.
- b. Suspend the privileges of enrollment of a student who is suspected of a breach of the code, pending investigation.
- c. Act upon the recommendations of the Disciplinary Committee which may include expulsion of a student from the University.
- d. Appoint an Appeal Committee and define procedures for appeal.
- e. Take any measure that may be necessary for ensuring effective disciplinary procedures.
- f. Delegate any of his authority.
- g. Make, alter and modify the Disciplinary Procedure / Rules.

2.9 DEFINITIONS:

2.9.1 STUDENT:

The said expression shall mean and include any person enrolled with the University for a Course of studies leading to an undergraduate or postgraduate degree or diploma or certificate within the University or the University Hospital or any person registered with any other University or Institution who has been accepted for an approved programme of study or training at UOS.

2.9.2 VICE CHANCELLOR:

The VC shall be deemed to mean the VC of the University unless otherwise stated.

(a) of Pharmacy

Depending on the case pertaining to any of the Units of the University.

2.9.3 UNIT:

Unless indicated otherwise, a unit shall mean The Pharmacy or any Institute, Faculty or School of the University.

2.9.4 HEAD OF THE UNIT:

Shall mean Director of the Pharmacy.

2.9.5 SUSPENSION:

Suspension requires a student to withdraw completely from all the academic activities of the University for a specified period of time. Upon expiry of the period of suspension the student will be re-admitted, contingent upon the terms and conditions of the suspension without any obligation or liability whatsoever on the part of the University or any of its staff/ members or officers.

2.9.6 EXPULSION:

Expulsion means termination of enrollment in the University.

2.9.7 FINE:

This is an order to student for payment of a sum of money to the University as penalty for any offence committed by the student. The student may or may not be permitted to continue with the course of studies until the fine has been paid.

(3) WHO TO CONTACT?

Any queries or difficulties with the schedule, learning strategy should be directed to:

CONTACT: -

Chairman:

Dr. Mukaram Shah

For further details and clarification on academic policy, programme, rules & regulations, student attendance and progress.

CONTROLLER OF EXAMINATIONS:

Abdul Baseer:

Contact only to seek further clarification on rules and regulations, policy or progress in university professional examinations.

Dr. Abad Khan

University policy issues including accreditation, affiliation and fees.

PROCTOR:

Mr. Muhammad Sufyan/ Sohail Anwar

IF you have questions about the Programme?

- Read the Study Guide
- If your questions still remain unanswered
Contact the Chair person, Faculty of Pharmacy

(4) PHARM.D CURRICULUM, (FOP)

The curriculum has been developed by Pharmacy Council of Pakistan (PCP) and Higher Education Commission (HEC). It is designed to produce pharmacists who have the abilities and skills which are necessary to achieve outcomes related to:

- Providing pharmaceutical care to patients
- Developing and managing medication distribution and control systems
- Managing the Pharmacy
- Promoting public health
- Providing drug information and education
- Providing technical aid to pharmaceutical Industry and solving problems pertinent to manufacturing of medicines

In order to provide students with the opportunity to develop a strong foundation to build their skills, the curriculum emphasizes eight major areas of instruction:

- Clinical Pharmacy
- Community Pharmacy
- Hospital Pharmacy
- Pharmaceutical Technology
- Industrial Pharmacy
- Pharmaceutical Chemistry
- Pharmacology
- Pharmacognosy
- Pharmaceutical Quality Management

4.1 OBJECTIVES OF THE CURRICULUM:

The curriculum will provide the student with an enhanced core of professional knowledge and skills through enrichment of the biomedical, pharmaceutical, and clinical sciences, as well as through practice experience. The curriculum will prepare students to be practitioners who are mature in the clinical pharmacy practices.

4.2 PHARM.D OBJECTIVES:

Students should work with patients, participate in patient care rounds and attend clinical case conferences in various patients' settings to develop a full understanding of the therapeutic management of patients.

Students should acquire experiences in the clinical pharmacy practice in the following settings: general medicine, inpatient/acute care area; and ambulatory health care setting (e.g., family practice centers, health maintenance organizations, and clinics); and medical specialty area (e.g., pediatrics, geriatrics, mental health, cardiology, nephrology, and nutritional support).

2. STUDY PLAN

PHARM D FIVE-YEAR COURSE SCHEME OF STUDIES FOR ANNUAL SYSTEM			
First Professional			
Theory			
Paper #	Subject	Marks	Teaching Hrs./week
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
Total		550	22
Practical Training			
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
Total		450	10
Grande Total		1000	32

Second Professional			
Theory			
Paper #	Subject	Marks	Teaching Hrs./week
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
Total		600	24
Practical Training			
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

		Total	400	8
		Grande Total	1000	32
Third Professional				
Theory				
Paper #	Subject	Marks	Teaching Hrs./week	
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	
Total		500	20	
Practical Training				
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	
Total		500	12	
Grande Total		1000	32	

Fourth Professional				
Theory				
Paper #	Subject	Marks	Teaching Hrs./week	
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	
Total		500	20	
Practical Training				
6.	Pharmacy Practice -IV (Clinical Pharmacy-I)	100	-	[A total of 150 hrs.]
	A. Department Lab.		2	
	B. Clinical Pharmacy Clerkship			
7.	Pharmaceutics-IV (Industrial Pharmacy)	100	2	

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

Fifth Professional			
Theory			
Paper #	Subject	Marks	Teaching Hrs./week
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
	Total	500	20
Practical Training			
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
	Total	300	4
	Grade Total	800	24
	Grande total Marks of 5 Professions	4700	32

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

Profession	Teaching Hrs./Week	Training Hrs./Week	Total Hrs./Week
1 st Profession	22	10	32
2 nd Profession	24	8	32
3 rd Profession	20	12	32
4 th profession	20	8	28
5 th Profession	20	4	24
Total	106	42	148
Professional Training			
Clinical Pharmacy (4 th & 5 th Professions) Clerkship a Total of:			450 hrs.
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 hrs.

(7) BBOOKS FOR PHARM.D FIRST PROFESSIONAL AVAILABLE IN LEARNING RESOURCE CENTER (LRC)

**COURSE NO. PHARM 311, 320, 316 & 325
PHARMACEUTICAL CHEMISTRY – I A & i B
(ORGANIC)**

- A guide Book to Mechanism in Organic Chemistry, (Sixth Edition- 1986) Peter Sykes, Pearson Prentice Hall, New Jersey.
- Advanced Organic Chemistry Reactions and Mechanisms (Second Edition-2004), Bernard Miller, Pearson Prentice Hall, New Jersey.
- Wilson and Gisvold's Text book of Organic Chemistry, Medicinal and Pharmaceutical Chemistry, (Eleventh Edition-2004), Lippincott Williams and Wilkins, Philadelphia.
- Text book of Pharmaceutical Organic Chemistry, (First Edition -1997), Muhammad Ali, CBS Publishers and distributors, New Delhi, India.

COURSE NO. PHARM 312, 321, 317 & 326 PHARMACEUTICAL CHEMISTRY – II A & II B (BIOCHEMISTRY)

- Lippincott's Illustrated Reviews: Biochemistry by Pamela C. Champe, Richard A., Ph.D. Harvey – Lippincott Williams & Wilkins – 4th Ed., 2007.
- Textbook of Medical Biochemistry by MN Chatterjea and Rana Shinde. 6th Ed. Jaypee Brother.
- A Lange medical book Harper's illustrated Biochemistry by Robert K. Murray, Daryl K. Granner and Victor W. Redwell. 27th ed. USA: McGraw Hill, 2006.
- Biochemistry by U. Satyanaryana. 1st Ed. Calcutta: Books and Allied, 1999.
- Lehninger's principle of Biochemistry 4th edition- DL Nelson, Cox Lehninger-WH Freeman 2004

**COURSE NO. PHARM 310, 319, 315 & 324
PHARMACEUTICS – I A & I B (PHYSICAL PHARMACY)**

- Sonnedecker, Glenn, Kremers and Urdang's History of Pharmacy. 3rdEdn. J.B Lippincott, Philadelphia, 1963.
- Personalities Noble, Glimpses of Renowned Scientists and Thinkers of Muslim Era, Edited by Hakim Mohammed Said, National Science Council Pakistan and Hamdard Foundation Pakistan, First Ed. 1983
- Aulton, Michael E. Ed., Pharmaceutics: The Science of dosage form design. 3rd Edn. Churchill Livingstone, Edinburgh, 2008.
- Martin, Alfred and Bustamante, Pilar, Chun, A.H.C., Physical Pharmacy: Physical Chemical Principles in the Pharmaceutical sciences. 5thEdn. Lippincott William & Wilkins, Philadelphia, 2006.
- The Theory and Practice of industrial pharmacy, Edited by Leon Lachman, Herbert A. Lieberman and Joseph L. Kanig, 3rdEdn. Lea and Febiger, Philadelphia, 1986
- Gupta, Ashok K., Bajaj, S.S Introduction to Pharmaceutics- II.- 4thEdn, Vol 2., CBS Publishers, New Dehli, 2000.
- Pharmaceutical Emulsions and Suspensions edited by Françoise, Niellovd, Gilberte Marti-Mestren, Marcel Decker, Inc, New York 2000.
- Pharmaceutical Practice, 3rd edition, edited by A.J.Winfield, RME Richards, Churchill living stone, 2004.
- Pharmaceutical Dosage Forms, Disperse system Volume I, II, III, 2nd edition, Revised and expanded by Herbert A. Lieberman, Martin M.Rieger, Gilberte S. Banker, Marcel Decker, Inc, New York.Basel, 1996. Modern Pharmaceutics 4th Addition 2009.

**COURSE NO. PHARM 313, 322, 318 &
327 PHYSIOLOGY – A & B**

- Chatterjee CC. **Human Physiology.** 9th Ed. Medical Allied Agency; 1994
- Cyril A, Neil E, Joels N. **Samson Wright's Applied Physiology.** 13th Ed. Oxford University Press; 1992.
- Guyton AC. **Text book of Medical Physiology.** 9th ED. WB Saunders Company; 2011.
- Kuntzman AJ, Tortora GJ. **Anatomy & Physiology for the manual therapies.** 1st ED. John Wiley & Sons; 2009.
- Martini F. **Fundamentals of anatomy and physiology.** 8th Ed. Prentice Hall; 2010.
- Saladin KS, Miller L. **Anatomy & Physiology: The Unity of Form and Function.** 6th Ed. McFraws-Hill; 1998.
- Snell RS. **Clinical Anatomy for Medical Students.** 1st ED. Litle Brown & Colnc; 1992
- Spence AP, Elliot B, Mason EB. **Human Anatomy and Physiology.** 3rd ED. West Publishing Company; 1992.
- Tortora GJ, Derrickson B. **Principles of anatomy and physiology.** 13th ED. Wiley; 2010.
- Widmaier E, Raff H, Strang K. **Vander's Human Physiology.** 12th Ed. McGraw Hill; 2010.
- William F, Ganong WF. **Review of Medical Physiology.** 22nd Ed. Prentice Hall International Inc; 2005.

**COURSE NO. PHARM 314 & 323
ANATOMY & HISTOLOGY**

- Grays Anatomy for student by Richard L. Drake, Wayne Vogl and Adam W.M. Mitchell. Philadelphia: Elsevier Churchill Livingstone, 2005.
- Clinical Anatomy by Richard S.Snell.7th ed. Philadelphia: Lippinott William and Wilkins, 1993.
- Medical Histology by Laiq Hussain Siddiqui. 4th ed. Multan: Caravan Book Center, 1999.
- Fundamental of Anatomy and Physiology by Martini Richard. 4th edition.

**(8) EXAMINATION RULES AND REGULATION,
FOP PHARM.D 1ST TO 5TH
PROFESSIONAL**

The system of examination in the Faculty of Pharmacy of University of Swabi shall be based on annual system. The detailed rules and regulations are as follows.

8.1 Academic Calendar

- A calendar of academic and co-curricular activities during an academic year shall be called ACADEMIC CALENDAR.
- An academic year has one annual exam.

8.2 Courses

Each course (Theory or practical) will have a number, a short title and number of credit hours (cr. hrs). A number once denoted, shall not be changed even if course is withdrawn or abolished.

8.3 Types of Examinations

- **Continuous Assessment Tests**
 - Are conducted by Faculty of Pharmacy.
 - Are conducted for regular candidates and for the candidates repeating the year.
 - Candidates repeating the year have to score fresh Continuous Assessment marks for the failed course(s). Previous Continuous Assessment marks shall be cancelled.
 - Different methods of evaluation will be used to judge student's performance.

that particular course which will be added to Regular Annual Examination marks (b) obtained in that course for complete score.

• **Regular Annual Examination**

- Is conducted by the University of Swabi Department of Examination
- The examination schedule is prerogative of the University; no changes would be made once the schedule is announced.

Any query related to examination should be addressed to the Chair person, Faculty of Pharmacy.

- is held at the end of annual of each academic year

Weightage
1st to 5th Annual
50%

For example, in a course if a student obtains 50 marks out of 100 it will consider pass.

• **Annual Resit Examination**

- Is conducted by the University of Swabi Department of Examination
- Resit Examination of annual will be held at the end of the academic year.

8.4 Marking System/Pass level

- Each course of a annual carries 100 marks.
The minimum passing marks of each course are 50% and are sum of Continuous Assessment marks and Regular Annual Examination marks.
- 40% weightage of Continuous Assessment of any course **shall not be counted** towards **Resit Examination** and students must obtain a minimum 50% marks to clear the course.

8.5 Grading System

Grades awarded to a student in each course shall be of two types:

- **Numerical Grade (NG):** Assessment of performance on the basis of marks out of 100 fixed for a course unit is NG.
- **Alphabetical Grade (AG)** Equivalent of numerical grade in Annuals of alphabets shall be denoted by AG. (Each letter carries a definite value in annuals of numerical points or grades points). There shall be 12 AGs, which are given below:

Marks	Grade	Grade Point
90 and above	A+	4.0
85-89	A	4.0
80-84	A-	3.8
75-79	B+	3.4
71-74	B	3.0
68-70	B-	2.8
64-67	C+	2.4
61-63	C	2.0
57-60	C-	1.8
53-56	D+	1.4
50-52	D	1.0
below 50	Fail	0

8.6 Eligibility for Regular Annual Examination

- Minimum 75% attendance in each course is mandatory. Attendance requirement is applicable to all scheduled activities of learning namely lectures, tutorials, presentations, assignments, written examinations, viva, visits to pharmaceutical industries, clerkships and other related activities.
- Clearance of all University dues.
- Students who do not meet the attendance requirement for one or more than one course(s) will be detained from appearing in the annual examination(s) of that course(s). He/She will be considered as Not Eligible student.

8.7 Eligibility for Resit Examination

- Failure of the Regular Annual Examination.
- Student who remains absent in the Annual Examination.
- Student who has at least **75%** attendance in the course(s) will be eligible to appear in the Resit Examination only after submitting. Students having less than 75% attendance in any course will not be eligible to appear in Resit Examination, and will have to repeat the year.
- **Promotion rules**
 - Promotion will be declared yearly i.e. after each 2nd annual examination.
 - Promotion to next class will be based on **passing 80% courses** of the current academic year (one annual)

8.8 Rules for Repeating the year

- A student who fails to clear 80% courses of the year after Resit Examination of that year will be considered as a **Repeater**.
- A student repeating the year will attend all the classes of the course(s) Theory/Practical in which he/she was declared failed. However, his/her eligibility will not be affected with his/her performance.
- Student, repeating the year will appear in all Continuous Assessment tests/viva of the respective course(s) in which he/she was declared failed.
- He/She can avail 2 chances (regular + Resit) each year.

8.9 Declaration of Result

- Result of Continuous Assessment of each course, signed by the course Incharge, will be displayed on the notice board of the Faculty of Pharmacy.
- Result of Annual examination conducted by the University shall be announced by the Controller of Examinations.

8.10 Issuance of Marks sheet

The Department of Examination will issue mark sheet of Annual Examination.

8.11 Requirement for the award of Pharm. D Degree

- A student must have passed all the prescribed courses, of 1st to 5th Professional.
- A student must have obtained a minimum percentage of 50%. A student who fails to achieve percentage of 50%:
 - He / She shall be allowed to sit in the regular Annual Examination of the year to improve his / her percentage.He / She allowed to improve his / her percentage by attempting the course(s) in which he / she have secured less than 50% marks.

the regular and resit examination of 1st to 4th year. 5th year students may appear in the Resit Examination of 5th year annual.

- The best grade out of all attempts in that course(s) shall be include in the calculation of percentage.
Weightage of continuous assessment shall not be included in the grade improving examination
- There is no restriction on the number of attempts for the improvement of grades.

8.12 Unfair means

- All cases of using unfair means and practice during examination will be forwarded to the Disciplinary Committee of the University appointed for the purpose. The matter will be dealt with in accordance with the rules and regulations of the University.
- In case of any dispute in interpretation of the rules, the Vice Chancellor will be the final deciding authority.
- **External examiner**
There shall be external examiners in all practical courses examination.

8.13 Declaration by student / parent will be taken before examination

I hereby declare that I have read rules and regulations regarding examination policy 2013 – 2014 and will duly abide by the prescribed rules and regulations.

(9) TEST ADMINISTRATION RULES & REGULATIONS, FOP

9.1 GENERAL

- All university examinations are monitored by the Department of Examination with the support of the Chair person, Faculty and staff.
- To ensure that the examinations are held according to the standard conditions and that no examinee or group of examinees receives unfair advantage on the examination, **students (examinees) must strictly adhere/abide to the rules and regulations of the Faculty of Pharmacy, University of Swabi.**

9.2 IRREGULAR BEHAVIOUR/ PRACTICES

Specific examples of irregular behavior include, but are not necessarily limited to the following:

- Copying answers from another examinee or allowing answer to be copied.
- Making notes of any kind during an examination.
- Failure to follow instructions of the staff present in the examination hall.
- Acts of disruptive behavior such as raising ones voice, talking to others, interrupting the examination process upon entering the examination hall, or during an examination, and other similar acts of behavior.
- During an examination usage of any unauthorized material such as photographic equipment, communication or recording devices, including electronic paging devices and cellular telephones.
- Altering or misrepresenting examination result, theft or unauthorized possession of examination materials.
- Memorizing and reproducing examination materials and any unauthorized reproduction by any means and / or dissemination of examination material.
- Looking in the direction of another examinees, passing of written notes, leaving written notes on vacant seats/ desks not occupied by examinees during the examination may be

considered as evidence of copying or attempting to copy, and a report of such behavior may result in irregular behavior/practice.

- Sitting for an examination without being eligible for it, impersonating an examinee or engaging a proxy to take the examination.

9.3 Advice for Students:

What to do

- **Students should** arrive at the examination hall **before** scheduled time. In case if any student arrives late that is after scheduled time, he / she is not to be admitted. Students arriving within 10 minutes after scheduled testing time may be admitted by the approval of head examiner or official of the Department or Examination.
- **Students should** present University Identity Card, Admit Card for Continuous Assessment Terminal / Resit Examinations. If any student/s does not bring the required Identification Card he / she may not be admitted to the examination hall.

What NOT to do

- **Do not** bring into the examination hall any personal belongings, including mechanical or electrical devices, backpacks, handbags, books, notes or study guide materials, calculators, digital watches, watches with computer communication and / or memory capability, electronic paging devices, recording or filming devices, radios, cellular telephones, food and drinks. Only for specified subject/s (like mathematics, statistics, physical pharmacy, biopharmaceutics and pharmacokinetics etc) special instruction will be given on use of scientific calculator for examination.
- **Do not** make written notes or record in any way the contents of any examination. Any notes found will be confiscated and reported for disciplinary action.

- **Do not** communicate with, seek aid from, or provide aid to any other examinee during the examination.
- **Once** you (students) start taking an examination, you cannot cancel that examination.
- **If** the paper is completed **less than the time** allotted then do not leave without seeking permission from the staff present in the examination hall.

No extra time will be allowed if he/she leaves the examination hall for personal emergency. Between exam duration, examination clock continues to run.

9.4 Evaluation of students:

- In the middle of the each annual a complete profile of continuous Assessment (Test marks, Viva marks and attendance) of each course regularly delivered to their parents.
- In case of unsatisfactory results in more than 3 courses, the student's parents are asked to visit to the Chairman's office.
- A Parents / Teacher meeting is regularly called after the result of 1st examination of each year.
- Continuous counseling and evaluation regarding the Examination / Attendance rules and regulation of University of Swabi department of Pharmacy.

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

- **4th 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.
- **5th 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:

- **4th 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.
- **5th 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>