جامعة الإمام عبد الرحمن بن فيصل

IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY

College of Pharmacy | كلية الصيدلة

Student Handbook
PharmD Program

College of Pharmacy

2025

Contents

Welcome to the College of Pharmacy!

Dear Student,

It is my pleasure to welcome you to the College of Pharmacy at Imam Abdulrahman Bin Faisal University. You have joined an institution committed to academic excellence, professional growth, and preparing future leaders in pharmacy.

The years you spend with us will be critical to your development as a pharmacist. Our well-structured curriculum provides the essential knowledge and skills you will need, complemented by carefully designed training opportunities that prepare you for your professional journey. I strongly encourage you to engage in extracurricular activities during your studies. These experiences enrich your character, enhance your soft skills, and contribute to your personal and professional growth.

Our Academic Advising and Student Support Unit is here to guide and assist you at every stage. Please take full advantage of this valuable resource.

As students of the College of Pharmacy, you represent the future of pharmacy practice in the Kingdom. That future begins today. Work hard, stay committed, and together we will build a bright future.

Dr. Abdulmalik Alqarni

Dean, College of Pharmacy

College of Pharmacy History

The College of Pharmacy (COP) at Imam Abdulrahman Bin Faisal University is a forward-looking academic institution dedicated to excellence in pharmaceutical education, research, and community engagement. Originally established by Royal Decree on July 8, 2011, the College began its journey as the College of Clinical Pharmacy, launching its flagship Doctor of Pharmacy (PharmD) program in 2012/2013 academic year. The College proudly celebrated the graduation of its first cohort in May 2017. In 2025, following extensive consultation with internal and external stakeholders, the College was renamed the College of Pharmacy (COP). This strategic rebranding reflects the College's expanding academic scope, its commitment to international standards, and its readiness to introduce diverse pharmaceutical programs beyond clinical training.

The PharmD program at COP is fully accredited by the National Center for Academic Accreditation and Evaluation (NCAAA) through April 2028, highlighting the College's commitment to quality, continuous improvement, and alignment with national academic standards. As part of its strategic growth, the College will launch its first postgraduate offering, the Master of Integrative Pharmaceutical Sciences, in Fall 2025. This innovative program is designed to bridge the gap between scientific research and applied pharmaceutical practice, preparing graduates for impactful roles in drug development, regulatory sciences, and interdisciplinary research.

Through academic excellence, innovative research, and community partnerships, the College of Pharmacy continues to position itself as a national leader in advancing pharmacy education and contributing meaningfully to the healthcare sector in Saudi Arabia and beyond.

College of Pharmacy Departments

Hereby we introduce PharmD Program where five departments have been established to cover all courses of the program. These departments include:

1. **Department of Pharmacy Practice**. It is the largest department that encompasses two areas: pharmacy practice and social and administrative pharmacy. The former is primarily concerned about pharmaceutical care (or medication therapy management) for patients and all aspects of practice in diverse settings, whereas the latter is involved in social and administrative services of pharmacy i.e. health psychology, pharmaco-epidemiology, pharmacoeconomics, public health and pharmacy management, etc.
2. **Department of Pharmaceutics**. This department teaches and trains students on the manufacture of various pharmaceutical dosage forms (e.g. tablets, capsules, suppositories and injections), biopharmaceuticals and pharmaceutical materials. It also performs quality tests on each preparation according to official formularies or guidelines.

3. **Department of Pharmaceutical Chemistry**. The department is responsible for chemistry topics related to pharmaceutical industry, chemical compositions, structure-activity relationships and analytical pharmaceutical chemistry.

4. **Department of Pharmacology**. This department educates on pharmaceutical and health products in terms of their mechanism of action, adverse effects (i.e. side effects and allergies), interactions with other medicines, food or diseases, including basic and applied pharmacokinetics and pharmacodynamics. Moreover, it deals with different types of toxic substances, causes of addiction and their management.

5. **Department of Natural Products**. The department is related to herbal and medicinal products, chemical compositions and their impacts on the human body. Additionally, complementary and alternative medicine is also a crucial area of interest.

In addition to the five departments described above, some departments of the College of Medicine, i.e. Departments of Anatomy, Physiology, Pathology, Microbiology and Biochemistry, also help arrange many courses for the first two years of the PharmD Program as discussed in detail in the program outline and course descriptions.

Core Information

Program title: Pharmacy (PharmD)

Target award: Bachelor of Pharmacy - PharmD

Interim or exit awards: None

Awarding body: Imam Abdulrahman Bin Faisal University

Local and international accreditation: NCAAA

Location(s) at which program is delivered: College of Pharmacy, hospitals and community pharmacies in Dammam and Al Khobar

Modes of delivery and duration: Full-time six years (06) years program (5 professional years plus one preparatory year) on campus

College Vision, Mission and Values

Vision:

A leading college in pharmacy education, transformative healthcare, community service, and innovative and translational research.

Mission:

To advance pharmacy profession through innovative teaching and learning practices, impactful research, inter-professional collaboration, partnerships, and community engagement in a sustainable environment.

Values:

Equality, professional, excellence, teamwork, diversity, creativity & innovation, life-long learning, social responsibility.

PharmD program Vision, Mission and Values

Vision:

A PharmD program distinguished for its excellence in teaching and learning, research and community engagement through innovation and collaboration.

Mission:

To graduate Pharmacists competent in serving the profession in all sectors, providing collaborative patient-centered care, and conducting quality research to promote the health and wellbeing of the public.

Values:

Professionalism, accountability, Partnership working & collaboration, integrity, leadership, empathy, Distinction, Social responsibility.

Goals and Program Learning Outcomes

A. College Goals and Objectives:

Goal 1: Excellence in teaching and learning in Pharmacy Education.

Objectives

1.1. strengthen and review PharmD and post-graduate programs.
1.2. Improve the pharmacy profession and community engagement.

Goal 2: Excellence in research and innovation in pharmacy.

Objectives

2.1. Improve the research eco-system.
2.2. Strengthen the research output.

Goal 3: Promote social responsibilities of the pharmacy profession.

Objectives

3.1. Promote high standard community services practices.
3.2. Strengthen partnership with active community institutions.

Goal 4: Build human resource capacity.

Objectives

4.1. Sustain CCP members professional development.
4.2. Enhance CCP members' loyalty.

Goal 5: Maintain a positive working environment.

Objectives

5.1. Adopt a sustainable and environmentally friendly campus strategy.
5.2. Support high quality teaching, research, and recreational facility for faculty and students.

Goal 6: Establish an advanced and efficient administrative management system.

Objectives

6.1. Foster efficient administrative system.
6.2. Develop robust strategic planning and risk management systems.

Goal 7: Establish the culture of financial sustainability

Objectives

1.1. Enforce the culture of financial sustainability.
1.2. Support the college financial sustainability.

Goal 8: Integrate high-tech solutions across various aspects in the college.

Objectives

8.1. Develop e-learning at the college.
8.2. Adopt an effective administrative E-system.

B. PharmD Program Goals

1. Promote excellence in pharmacy education.
2. Foster interprofessional education and collaboration.
3. Commit to professional and leadership development.
4. Advance research and innovation in pharmacy.
5. Enhance community engagement and well-being.

Program learning outcomes

Program Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning and teaching.

The ***National Qualification Framework*** (NQF) provides three learning domains (knowledge & understanding, skills and values).

Table 1: PharmD program learning outcomes (PLOs)

3. Program Learning Outcomes	
Knowledge and Understanding	
K1	Describe fundamental scientific knowledge and principles within the scope of the evolving pharmacy profession for prevention and treatment.
K2	Demonstrate advanced knowledge of recent advancements in basic and clinical sciences and the expanding role of pharmacists in healthcare delivery systems.
Skills	
S1	Integrate basic and clinical pharmaceutical sciences for application in industry, regulatory, pharmacy practice settings and research.
S2	Evaluate scientific and professional literature critically to inform evidence-based practice decisions, design and conduct research, and solve complex problems effectively.
S3	Design and deliver an evidence-based patient-therapeutic plan with an interprofessional approach.
S4	Communicate effectively with patients and health care professionals within various educational and professional situations
S5	Apply mathematical, problem-solving skills, and information technology skills in different pharmaceutical sectors.
S6	Demonstrate proficiency in compounding, dispensing, drug development, analysis, and quality control through effective execution of various complex practical activities.
Values, Autonomy, and Responsibility	
V1	Adhere to professional, ethical and legal standards.
V2	Demonstrate leadership, management, team-work skills, the potential for entrepreneurship and continuous self-development and learning in various settings.
V3	Advocate patient rights to safe and effective medication use in various settings.

Program Outline and Contents

The PharmD Program is a full-time six-year (06) undergraduate pharmacy program, offered by the College of Pharmacy with the assistance of, College of Medicine, Deanship of Preparatory and Support Studies and other Deanships. The program is delivered through a semester-based schedule with a total of 182 credit hours and follows an integrated curriculum that connects theoretical knowledge with practical applications in a medium of English language instruction for best learning experience. It includes one preparatory year at the deanship of Preparatory Studies followed by four years that comprise full didactic courses, theoretical courses with practical components, and full practical courses at the College of Pharmacy and ends with a six year of field training (internship) at various hospital, community pharmacy, academic, and industrial sites. The outline of the program is illustrated in Figure 1.

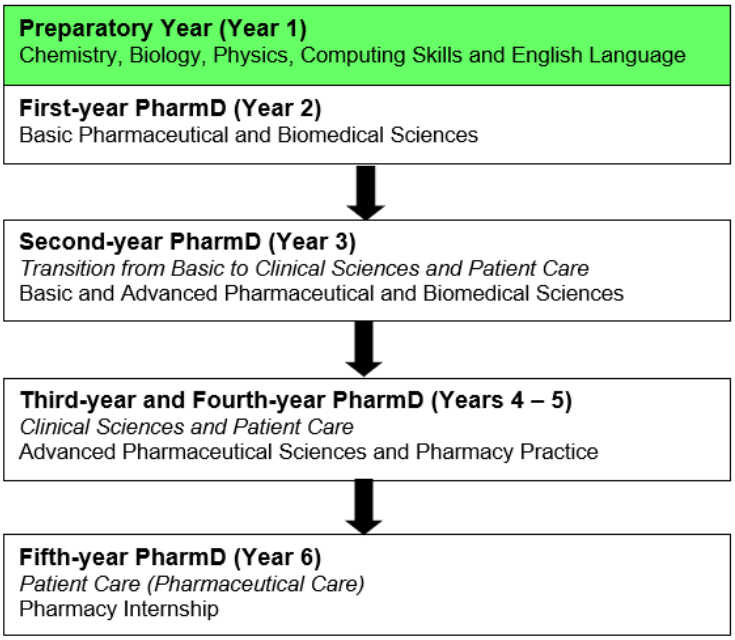

Figure 1. The outline of the PharmD Program.

Preparatory year (PY, year 1): The students are enrolled in the PYP based on the admission requirements (subject to change), set by the College of Pharmacy and the Deanship of Admissions and Registration, and manged by the Deanship of Preparatory Year and Support Studies (DPYSS). Students attend this year along with other students in the Colleges of Health Path, i.e. Medicine, Dentistry, Pharmacy, Nursing, Public Health and Applied Medical Science. The aim of PYP is to provide the students with appropriate foundations in basic sciences related to the health field and to enable them to transition to the professional education related to their prospective health college. PY also helps the students to adapt with the higher education system and integrate into the university environment. PY comprises two semesters that cover all basic courses in *Chemistry, Biology, Physics, Computing Skills, Communication Skills* and *English Language*. An

example of the academic plan for the preparatory year of the Colleges of Health Path is shown in Appendix 2. Students who pass PY, and according to their grades, their preference, and various health colleges requirements will finally be able to enrol into one of the heath colleges undergraduate programs including the PharmD Program at the College of Pharmacy.

PharmD program; each academic year is divided into two semesters. An introductory pharmacy practice experience courses (hospital and community pharmacy field training) are scheduled in the summer of years 3 and 4.

Year 2: The second years involve courses from different disciplines including Pharmacy Practice such as Foundation of health care and pharmacy practice, and basic pharmaceutical sciences, such as *Physical Pharmacy*, *Pharmaceutical Calculations* and *Pharmaceutical Organic Chemistry*, as well as basic biomedical sciences including *Physiology, Anatomy and Histology, and Biochemistry*.

Year 3: The third year represents a continuation of the basic sciences foundation that started in the second year in which students are taught different courses related to *Pharmacy Practice*, including, Pharmacy Ethics, Pharmacoepidemiology, Community Pharmacy and Self-care, Evidence-based Practice and Drug information, and basic pharmaceutical and biomedical sciences such as Introduction to Pharmacology, Principles of Drug action, Pharmaceutical Biotechnology, Clinical Nutrition, and Microbiology. During the summer of this year, students must complete their first Introductory Pharmacy Practice Experience course.

Year 4: The fourth year continues with the vertical integration where students are transitioning from basic into more advanced courses and starts with the horizontal integration where courses related to pharmacotherapy are parallelly integrated. Starting from year four, Medicinal Chemistry, Pharmacology, Pharmacotherapy, and Patient Care Skills are parallelly aligned every semester. Semester one and two involves module one and two from the designated courses respectively. This year also involves other courses such as instrumental analysis, and Clinical Pharmacokinetics. The students also have an opportunity to select an elective course (2 credit hours). During the summer of this year, students must complete their second Introductory Pharmacy Practice Experience course (Hospital Pharmacy).

Year 5: The fifth and final study year terminates the parallel and partial integration with modules three and four in semester one and two for the designated courses respectively. This year also comprises applied courses such as Industrial Pharmacy, Pharmacy Management and Leadership, and Pharmaceutical marketing and Business to orient and prepare students for the pharmaceutical workforce. Furthermore, a graduation project is undertaken by students during this year to fulfil their degree requirements. As with Year 4, they can choose a 2-credit elective course in year 5.

Year 6: In year six, students are engaged in 44 weeks of field training (internship) to acquire the appropriate advanced pharmacy practice experience which provide them with the required entry to practice competencies. The internship is divided into four core rotations, each lasting 4 weeks, and seven elective rotations, at least two of which involve direct patient care. The rotations comprise direct and indirect patient care rotations in hospitals and community pharmacies as well as elective industrial and academic rotations. The overall objectives of the clerkships are to enable students to:

1) effectively deliver pharmaceutical care (or medication therapy management) to patients or the public.

2) strengthen their scientific knowledge and skills necessary for the pursuit of graduate studies.
3) choose a specialization to pursue their study at a higher level as a sub-specialty.
4) develop professional behaviours, teamwork skills and a commitment to the ethics of the profession.
5) follow the programs of continuing education and acquire skills in managing diseases and pharmaceuticals.

Students after successful completion of the Pharmacy Internship program, are awarded with Bachelor of Pharmacy- PharmD degree and are authorized to practice as pharmacists in any healthcare settings after passing their national licensing exam (SPLE).

Course Distribution

The PharmD Program consists of 182 credit hours, i.e. 37 required by the University and 145 by the College with detail distribution of the credit hours per each course as summarized and presented in Table 2 and Figure 2, respectively. The course distribution according to department, as shown in Table 3, clearly describes that half of the courses are arranged by the Department of Pharmacy Practice and the rest by other departments. To further clarify the courses in each study year and semester, the academic plan for the 5-year PharmD Program is presented in the Appendix. As a whole, students in every semester need to study average 6 – 8 courses (or 15 – 20 credit hours). Most semesters have 2-4 laboratories, seminars or practice sessions, each of which lasts for 2 – 3 hours. Look at other modes of teaching and learning in the next heading.

Table 2. Courses required by the University and the College.

Course title/Subject	Number of courses	Credit hours
University requirements (10 credit hours)		
Entrepreneurship	1	2
History and civilization of KSA	1	2
Islamic Ethics and Values	1	2
Creed and Family in Islam	1	2
Arabic Language Skills	1	2
Total	**5**	**10**
College requirements (27 credit hours)		
Preparatory year	**9**	**27**
Program requirements (141 credit hours)		
Pharmacy Practice	21	58
Pharmaceutics	7	16
Pharmaceutical Chemistry	11	26
Pharmacology	6	13
Natural Products	4	10

Medicine	6	14
Field Training	2	4
Total	**57**	**141**
Electives (4 credit hours)		
Social and Behavioral Pharmacy (Pharmacy Practice)	1	2
Foundation of Clinical Trials (Pharmacy Practice)	1	2
Cosmetic Formulations (Pharmaceutics)	1	2
Good Manufacturing Practice (Pharmaceutics)	1	2
Pharmaceutical Quality Control (Pharmaceutical Chemistry)	1	2
Computer Aided Drug Design (Pharmaceutical Chemistry)	1	2
Drug Discovery (Pharmacology)	1	2
Precision Medicine (Pharmacology)	1	2
Poisonous and Abused Natural Products (Natural Products)	1	2
Natural Cosmeceuticals (Natural Products)	1	2
Total	**2**	**4**
Grand total	**73**	**182**

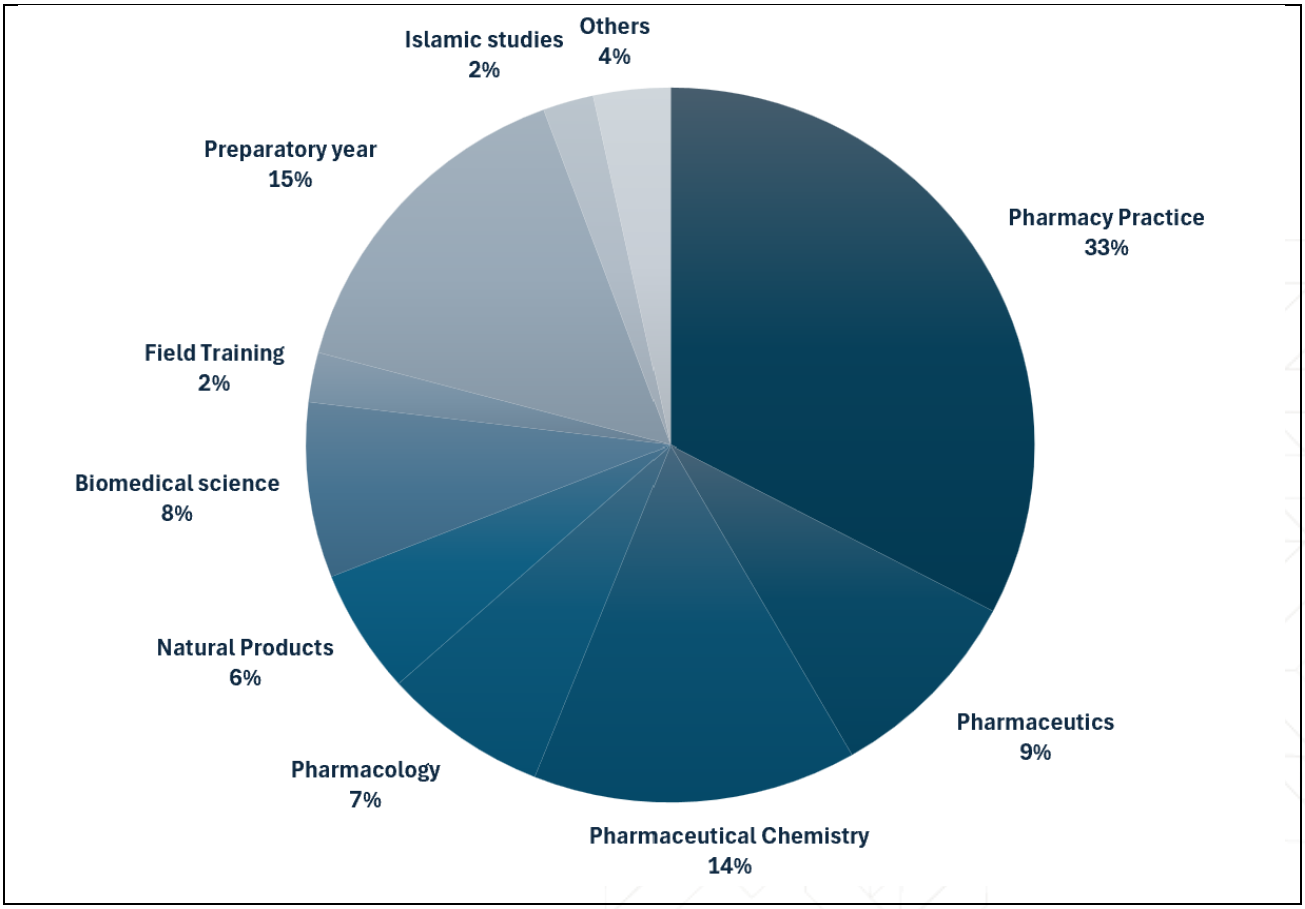

Figure 2. Courses credit hours percentage

Table 3. Courses distribution categorized by departments.

No.	Course title	Course type	Course code & no.	Credit hours
	Department of Pharmacy Practice (Core 62 cr hrs & Elective 4 cr hrs)			
1	Pharmaceutical Marketing and Business	Core	BUS 515	2
2	Community pharmacy and self care	Core	CLPH 310	2
3	Evidence-based Practice & Drug Information	Core	CLPH 315	2
4	Patient care skills 1	Core	CLPH 403	2
5	Patient Care Skills 2	Core	CLPH 409	2
6	Patient Care Skills 3	Core	CLPH 504	2
7	Introductory Pharmacy Practice Experience 2	Core	CLPH 444	2
8	Advance patient care	Core	CLPH 513	1
9	Total Parenteral nutrition (TPN)	Core	CLPH 516	2
10	Introductory pharmacy practice experience 1	Core	CLPH 333	2
11	Pharmacy Management and Leadership	Core	MGMT 508	2
12	Pharmacy ethics, Law and regulation	Core	PHCY 302	2
13	Pharmaceutical economics and policies	Core	PHCY 506	2
14	Pharmacoepidemiology and research methods	Core	RESM 307	3
15	Clinical pharmacokinetics	Core	CLPH 412	2
16	Graduation project	Core	PHCY 507	6
17	Foundation of Healthcare and Pharmacy Practice	Core	PHCY 202	2
18	Patients Safety and Informatics	Core	CLPH 411	3
19	Pharmacotherapy 1	Core	CLPH 404	5
20	Pharmacotherapy 2	Core	CLPH 410	5
21	Pharmacotherapy 3	Core	CLPH 503	5
22	Pharmacotherapy 4	Core	CLPH 510	5
23	Biostatistics	Core	STAT 304	1
24	Social and Behavioral Pharmacy	Elective	PHCY 551	2
25	Foundation of Clinical Trials	Elective	PHCY 454	2
	Department of Pharmaceutics (Core 16 cr hrs & Elective 4 cr hrs)			
1	Physical Pharmacy	Core	PHCT 206	3
2	Pharmaceutical calculations	Core	PHCT 210	2
3	Pharmaceutics 1	Core	PHCT 212	3
4	Pharmaceutics 2	Core	PHCT 301	2
5	Biopharmaceutics and Pharmacokinetics	Core	PHCT 406	2
6	Industrial pharmacy	Core	PHCT 505	2
7	Drug delivery systems	Core	PHCT 314	2
8	Cosmetic Formulations	Elective	PHCT 452	2

9	Good Manufacturing Practice	Elective	PHCT 555	2
	Department of Pharmaceutical Chemistry (Core 26 cr hrs & Elective 4 cr hrs)			
1	Pharmaceutical Organic Chemistry 1	Core	PHCH 201	3
2	Pharmaceutical Organic Chemistry 2	Core	PHCH 213	2
3	Pharmaceutical Analytical Chemistry	Core	PHCH 211	3
4	Biochemistry 1	Core	BIOCH 204	2
5	Biochemistry 2	Core	BIOCH 209	2
6	Instrumental Analysis	Core	PHCH 405	3
7	Principles of drug action	Core	PHCH 312	2
8	Medicinal chemistry 1	Core	PHCH 401	3
9	Medicinal chemistry 2	Core	PHCH 407	3
10	Medicinal chemistry 3	Core	PHCH 501	2
11	Medicinal chemistry 4	Core	PHCH 511	1
12	Pharmaceutical Quality Control	Elective	PHCT 553	2
13	Computer Aided Drug Design	Elective	PHCH 451	2
	Department of Pharmacology (Core 13 cr hrs & Elective 4 cr hrs)			
1	Clinical Toxicology	Core	PHTX 514	2
2	Introduction to Pharmacology	Core	PHARM 311	3
3	Pharmacology 1	Core	PHARM 402	3
4	Pharmacology 2	Core	PHARM 408	2
5	Pharmacology 3	Core	PHARM 502	2
6	Pharmacology 4	Core	PHARM 512	1
7	Drug Discovery	Elective	PHCH 455	2
8	Precision Medicine	Elective	PHARM 554	2
	Department of Natural Products (Core 10 cr hrs& Elective 4 cr hrs)			
1	Fundamentals of Natural Products	Core	NAPT 214	3
2	Clinical Nutrition and Dietary Supplements	Core	NUTR 303	3
3	Pharmaceutical biotechnology	Core	PHBT 309	2
4	Complementary and Integrative Medicine.	Core	NAPT 306	2
5	Poisonous and Abused Natural Products	Elective	NAPT 552	2
6	Natural Cosmeceuticals	Elective	NAPT 453	2
	Biomedical science (Core 14 cr hrs)			
1	Anatomy and Histology	Core	ANAT203	3
2	Immunology	Core	IMMUN 316	2
3	Pathophysiology	Core	PATH 313	2
4	Physiology 1	Core	PHYL 205	2

5	Physiology 2	Core	PHYL 208	2
6	Microbiology	Core	MICRO 305	3

Teaching and Learning

The PharmD program provides students with didactic teaching and facilitative learning including lectures, tutorials, seminars or laboratory work in numerous courses. Learning facilitation is arranged mostly as;

- Active learning
- Problem-based learning
- Team-based learning
- Flipped classroom
- Small group discussion
- Simulation and role plays
- Multimedia instructions
- Laboratory work
- Case-assisted student-centred learning
- Case study
- Journal clubs and literature review
- Self-directed study.

In addition, students experience interprofessional learning with other students in the Colleges of Health Track. The clerkships in Pharmacy Internship enable students to acquire clinical and pharmaceutical care skills. During the clerkship rotations, they become acquaint with the skills to participate in group activities, i.e. attending ward rounds, bed-side discussions about medication along with case presentation, and patient-centred activities particularly patient counselling on diseases and medication use. In the fifth year, students need to execute small research project, as part of project-based learning. To broaden their knowledge and career experience, students are asked to join a field trip or a visit to a hospital or pharmaceutical industry in the region. Finally, with the aforementioned combinations of teaching and learning modes, students will be able to achieve the program as well as individual course outcomes as elaborated in the course descriptions.

Assessments

The program uses a wide range of assessment methods including traditional and alternative methods to ensure that students are fairly and concisely assessed. Formative assessment, or assessment for learning is also implemented together with summative assessment to increase students' engagement, personalize learning experiences, and improve academic performance. The assessments include:

1) **Examination questions**: either in the forms of unseen or open-book exam papers, are primarily used to test students' knowledge and understanding, but their ability to apply, analyse, synthesize

or evaluate some issues can partly be assessed. They can be in the form of multiple-choice questions (MCQs) or short-answer questions.

2) **Objective Structured Clinical Examinations (OSCEs);** are used to assess their skills in pharmacy practice, i.e. clinical skills, communication, counselling and pharmaceutical care.
3) **Assignments**: e.g. subject-specific reports, case reports, reflective reports and portfolios, are utilized to assess their ability of writing reports and constructing longer presentations (essays) as well as short concise pharmaceutical care plans.
4) **Quizzes**; are arranged in each course to check students' understanding before or after a lesson or course. This may also help them revise the teaching material over a period of time and better prepare for the final examination.
5) **Oral presentations**: are used to test their ability in order to organise their work, prepare visual material and present the findings in a timely manner in a controlled environment.
6) **Oral examination;** as an alternative method for research project assessments, may be utilized to assess their dissertation in terms of research methodology, statistics and writing ability.
7) **Projects Defence:** the students are asked to present respective proposals and dissertations in front of research committee during research projects for successful evaluation.
8) **Progress reports: a**part from project defence the students submit three research progress reports at specified time as set by the research committee of the faculty.
9) **Laboratory exams:** evaluate students' ability to perform specific skills in controlled settings.

All types of assessments with weighted scores are specified for each course as shown in the course description. In addition, the college started to implement students' e-portfolios that allow students to compile evidence of their work overtime, showcasing their progress and reflective abilities through signature assignments and planned learning activities. These activities are aligned with the PLOs. Detailed description of student e-portfolio can be found in the "Student e-portfolio Manual".

Assessment Guidelines

- **Theory based courses**; final exam should constitute 30 – 40% of the total mark.
- **Practical based courses**: final exam (final written and final practical exams) should constitute 40 - 50% of the total mark.
- Continuous assessment will comprise 50-60% of the total course grade from which at least 20% should use alternative assessment, and it will include.
    a. Quizzes (1-2) per course.
    b. One midterm exam, comprising 25 - 30% of the total course grade (approximately half of the CA).
    c. Practical sessions based on the course nature.
    d. alternative assessment methods such as presentation, case report, oral exam, etc.
    e. Students' portfolio and evaluation forms are required in field experience-based courses.
- Continuous assessment should rely on a variety of assessment methods, especially alternative assessment to test the students' higher order thinking and ensure their achievement of the required skills and learning outcomes. Written tests in continuous assessment should include a variety of questions in addition to multiple choice questions (MCQs), such as extended matching

questions (EMQ), and short answer questions (SAQ), all of which should have the majority testing higher order thinking.

- The percentage of MCQ questions in any test or exam should not exceed 60% of the total exam weight.
- Continuous assessment should comprise a good percentage of alternative assessment in addition to written tests (quizzes, midterms) which should have both MCQ and short answer questions (SAQ), and which essentially test higher order thinking.
- Available options for continuous assessments are, but not limited to Presentations/ SOAP notes/ group discussions/ brainstorming sessions/ problem-solving, calculations-based assignments/ journal clubs/ Drug information request
- Research-based assignments are not allowed.
- No grades will be given for attendance.
- Final written exams should include questions from the material included in the midterm exams with a percentage of approximately 10-20% of the questions included in the final exam.
- In order to pass the course, the student must achieve a cumulative minimum of 60%.
- The percentage allocated for department discretion can be utilized in the form of pop quizzes, written assignments, and presentations (not for attendance).
- Assessment procedures must be clearly identified in course specifications.

Grades and GPA (Grade point assessment): the College follows the criteria-based assessments like other colleges. The criteria with percentages, description and estimated GPA are demonstrated in Table 4 below.

Table 4. Criteria for the PharmD program assessments.

Percentage	Grade/mark	Description	GPA range
95 – 100	A+	Exceptional	4.00 – 5.00
90 – 94	A	Excellent	3.75 – 4.75
85 – 89	B+	Superior	3.50 – 4.50
80 – 84	B	Very good	3.00 – 4.00
75 – 79	C+	Above average	2.50 – 3.50
70 – 74	C	Good	2.00 – 3.00
65 – 69	D+	High pass	1.50 – 2.50
60 – 64	D	Pass	1.00 – 2.00
< 60	F	Fail	0.00 – 1.00
	IP	In-progress	
	IC	Incomplete	
	DN	Denied (disappear or class attendance <75% for lectures or 60% for practice/labs)	
	NP	Pass with No Grade	
	NF	Fail with No Grade	
	W	Withdraw	

- If students fail a course and retake the exam, their overall mark will be capped at Grade D (or 60%).
- In every semester, students need to pass the courses with the GPA of at least 2.00. In case of students with the 'probation' or GPA less than 2.00, they will be given three warnings; for example, the first for Semester 1, the second for Semester 2 and the last for Semester 1 of the following year. They will be

retired after the third warning. However, they might have an opportunity to do the fourth semester with the approval of the College board.

- For examinations: students who arrive at the examination hall after the commencement of the exam shall not be permitted to take the examination unless prior approval is granted by the Dean or an authorized delegate. Such approval may only be given if the delay does not exceed 30 minutes and is a first-time occurrence. Additionally, they are not allowed to leave the examination room before 30 minutes from the start of the exam.
- Plagiarism and cheating for any assessments or examinations are regarded as an 'academic crime' and must be punished accordingly.
- If students are not satisfied and in doubt with the assessment results, they can appeal for that within two weeks after the release of the marks.

For detailed policies and procedures on assessment and examinations, you can refer to the following documents:

- College of Pharmacy Policy and Procedures Manual "Policy and Procedure for Examinations and Assessment".
- IAU Guidelines on Assessment and Examinations.

Policy on Absence from Exams and Make-Up Exams

- If a student missed the final exam without an accepted excuse, the student would receive a grade of zero (0) for the exam. The final course grade will be calculated based only on the coursework marks.
- If a student missed the final exam due to a valid and compelling excuse, and it is approved through the Student Information System (SIS), the student will be allowed to take a make-up exam. The make-up exam must be completed by the end of the following academic semester, and the grade the student will earn on the make-up exam will replace the missed final exam grade.
- If a student missed a midterm or coursework exam, and the excuse is accepted through SIS, the student will be permitted to take a substitute exam. The make-up must be taken no later than Week 13 of the same semester, and the student will receive the actual score earned.

Accepted Excuses for Missing Exams

The following reasons may be accepted if properly documented and submitted within the allowed timeframe:

- **Death of a relative**:
  - 5 days of leave for **first-degree relatives** (parents, siblings).
  - 3 days for **second- or third-degree relatives**, with a copy of the death certificate.
- **Childbirth (female students)**:
  - 2 weeks of leave, with a hospital birth report.
- **Loss of consciousness** during exams (e.g., fainting):
  - Documented by the university clinic or hospital.
- **Emergency hospital visit** with a spouse, parent, or child:
  - Must be urgent (not a routine appointment), and documented by the hospital.
- **Routine check-ups** or **one-day excuses** that could be rescheduled **are not accepted**.

- **Medical reports from hospitals** (public or private) for:
  - Surgery
  - Hospitalization
  - Chronic conditions
  - Must meet regulatory standards and be clearly justified.
- **Emergency health issues** (e.g., high fever, fractures, bleeding):
  - A detailed diagnosis must be submitted for review.
- **Traffic or other accidents**:
  - Accepted if the student was directly involved, with a report including the incident time and authority visit.
- **Security-related appointments**:
  - Accepted only if they are mandatory, cannot be rescheduled, and overlap with the exam time.

Procedures for Submitting Excuses and Scheduling Make-Up Exams

- You must submit your excuse through SIS within 1 week of the missed exam date.
- The Vice Dean for Academic Affairs (VDAA) or a designee will review your excuse and notify the course instructor if it is accepted.
- The instructor and department will then:
  - Schedule the make-up exam.
  - Inform you of the date and instructions at least 1 week in advance via official communication.
- If your final exam excuse is accepted, you will receive a temporary grade of Incomplete (IC) until you sit for the make-up exam and your final grade is recorded.
- Make-up exams for coursework (midterms, quizzes, etc.):
  - Must be conducted and graded by Week 13 of the semester.
- Make-up exams for final exams:
  - Must be completed and grades recorded before the end of the following semester, as per Article (25) of the University Regulations.

For detailed information, refer to the COP Policy and Procedures Manual "Policy and Procedure on Academic Appeals and Grievances".

Remediation Exam Policy for Midterm Exams

- Remediation exams apply to all courses in the PharmD program and are included in course assessment plans when 15% or more of students score 60% or below in the midterm exam.
- Course coordinators, in coordination with their departments, must report the percentage of low-performing students and list the courses eligible for remediation within one week from the last midterm exam date.
- Remediation is offered only for midterm exams.
- The head of the department must approve courses offering remediation exams.
- The Vice Dean for Academic Affairs provides final approval for the list of accepted remediation exams and announces the schedule of the exams.
- Remediation exams must be equivalent in content and difficulty to the original midterm exam.
- The course coordinator is responsible for providing individual feedback to students eligible for remediation before the exam, to support academic improvement.

- The student's final midterm score will be calculated as the average of the original and remediation exam scores.
- In exceptional cases, course coordinators may propose a remediation exam even if the 15% policy does not apply, subject to approval by the department and the VDAA.
- All approved remediation exams must be conducted within two weeks from the last midterm exam date.

Graduation projects (assessment methods and marks distribution)

A research project is mandatory for graduation and required for the course 'Graduation project' in Year 5. The course is to focus on skills in research, scientific writing, presentations and participation in journal clubs. The course is designed to provide students with an overview of writing scientific manuscripts, including case reports, research articles, review articles, grant proposal and dissertations. As the scientific writing is based on research outcomes, the basic principles of research methodology and biostatistics are also included and research projects conducted by students will be mandatory before graduation.

Assessment criteria – Graduation Project

Research project			Assignments	Midterm	Final (Written)	Total
Proposal[1]	Poster[2]	Supervisor evaluation[3]				
15%	30%	10%	5%	20%	20%	100%

[1] *Proposal will be presented as an oral presentation to the concerned department and will be evaluated according to rubrics*
[2] *Rubrics for evaluation of poster*
[3] *Supervisor's Evaluation Form*

Student Support and Guidance

Pharmacy students are mainly supported by the College and the University for their six-year Study. At the College level, there will be an orientation program delivered by the college higher administration to help them settle into the university environment. The Student Support and Academic Advising Unit (AASU) that works under the administration of the vice-deanship of academic affairs provide students with academic and personnel support and academic advisers are allocated to give some academic guidance about the PharmD study, as well as further study or career planning to individual students. The AASU aims to provide students with the needed resources and expertise and providing the best academic advising to help the students achieve their educational goals. The academic advisory process is managed and organized through a dedicated electronic platform where students' academic advisors, unit management and vice-deanship of academic affairs are dynamically interacting. Moreover, studies advice is offered by the program and course co-ordinators to assist students with relevant information about the PharmD Program and relevant courses. Regarding the University's support, the Deanship of Student Affairs provide counselling services in terms of study problems, financial advice on loans and aids, student employment and interesting activities. More details can be found in the COP Academic Advising Handbook.

Admissions and Regulations

The regulations on the PharmD study can be divided into five areas, i.e. admissions, registration, program study, assessments and graduation, which are aligned with the University's Regulations on the Study and Assessments. Some important regulations include:

Admissions

- Applicants for this programme must meet the entry requirements set by the College of Pharmacy and the Deanship of Admissions and Registration. They are required to:
  1) provide the ***Saudi Secondary School Certificate*** (scientific track) or equivalent;
  2) Submit the result of the ***Aptitude Test*** held by the National Centre of Qiyas and Assessment.
  3) pass the ***Competence Test*** held by the National Centre of Qiyas and Assessment;
  4) meet any other criteria specified by the University Council.

- After entering the University, students will need to attend a preparatory year arranged by the Deanship of Preparatory Year and Support Studies and pass it in order to move onto the first-year PharmD study. Requirements for passing this one-year program are as follows:
  1) Students pass all courses provided in the preparatory year program.
  2) They obtain a minimum grade of C in the English Language course.
  3) They obtain a minimum grade of C in Chemistry, Physics and Biology

- Students are to be dismissed from the preparatory year program if they receive GPA less than 2.00. After completing the program, students will have a chance to select a college of choice; however, priority is given to students based on their GPA and academic credentials. With respect to transfer and visiting students, they may be allowed to study the PharmD Program.

Registration

- According to the University's regulations, all students need to register 12 – 20 credits per semester. However, for the PharmD Program they will be provided with courses ranging from 15 to 20 credits per semester.
- Students with a grade point average (GPA) less than 2.00 are to enrol less than 12 credits in a semester.

Student attendance

A regular student should attend all classes and laboratory sessions. A student may be discontinued from a course and denied entrance to the final examination if his/her attendance is less than the limit determined by the University Board. This limit cannot be less than 85% of classes and laboratory sessions assigned to each course during the semester. A student who is denied entrance to the examination due to excessive absences will be considered as having failed that course and will be assigned a DN grade.

The College Board — or, whatever bodies it delegates its authority to — may exempt a student from the provisions of attendance, and, allow him/her to attend the final examination if he provides an excuse

acceptable to the Board. For such an exemption, the minimum attendance requirement is not less than 25% of the lecture and laboratory sessions scheduled for the course.

A student who fails to attend the final examination will be given zero in that examination. In this case, his/her course grade will be calculated on the basis of the class work score he earned in the course.

If a student fails to attend the final examination of any of his scheduled courses due to circumstances beyond his/her control, the College Board, in exceptional cases, may accept the excuse and arrange a make-up examination for the student within a period not exceeding the end of the next semester. In such cases, the course grade will be assigned to the student after the make-up examination.

A student may be allowed to withdraw from the University for a semester and not be considered as having failed if he/she furnishes an acceptable excuse to the authorized body as determined by the University Board, during the stipulated period determined by the executive rules approved by the University Board. His/her grade in each course is then determined as W.

The semester is considered a part of the required duration to fulfil graduation requirements.

A student may submit an application to discontinue study in a particular semester and withdraw from one course or more, according to the executive rules approved by the University Board, provided he has an acceptable excuse.

Program study

- Student must attend at least 85% of both lectures and practice/laboratory sessions in order to take a final examination. The student whose attendance is less than 75%, including both excused and unexcused absences, will be referred to the college council or an authorized person for being assigned the status 'Denied (NP).'

Official Leave of Absence (Semester/Year Withdrawal)

- Students may apply for withdrawal from a semester or academic year in exceptional circumstances.
- Approved withdrawals do not result in academic failure, but they extend the expected graduation period.

Key Guidelines:

- Withdrawal is allowed without academic penalty up to the end of Week 14, subject to:
    - Recommendation by the academic advisor.
    - Approval by the Dean or designee.
- After Week 14 and before final exams, withdrawal may be granted with joint approval from the Dean and the Permanent Academic Monitoring Committee.
- Withdrawal Limits: Maximum of 2 semesters.
- Summer session withdrawals are excluded from these limits if justified by extreme necessity.
- One exceptional withdrawal beyond the limit may be granted by the Permanent Academic Monitoring Committee.

Additional Regulations:

- A “W” (Withdrawn with Excuse) will be recorded for all courses during the withdrawn period.

- Requests must be submitted via Student Information System (SIS).
- The student must continue attending classes until the withdrawal is officially approved.
- The Dean or designee shall issue a decision within two weeks of request submission.
- Students deprived in all registered courses are not eligible for semester withdrawal.
- Students receiving stipends will forfeit the stipend for the withdrawn semester.

Course Withdrawal

- Students may withdraw from one or more courses while remaining enrolled in others, within specific deadlines and conditions.
- Withdrawal must be approved by the Dean or designee, based on the academic advisor's recommendation.
- The course must not be part of the First Preparatory Year.
- Withdrawal must occur:
    - By Week 11 (semester system)
    - By Week 20 (annual system)
- A "W" (Withdrawn with Excuse) grade will be recorded.
- Exceptions for late withdrawals require approval from the Permanent Academic Monitoring Committee.

Restrictions:

- Remaining course load must meet the minimum study load defined in Article (13).
- If withdrawal reduces the load below the minimum, approval may be granted only with a justified advisor recommendation.
- Withdrawal is not allowed if the student has already withdrawn from or been deprived in the same course (unless approved as an exception).
- Courses that are no longer offered and have no equivalent in the current plan cannot be withdrawn from.
- Withdrawal is not allowed from courses that are two or more levels below the student's current academic level.
- If a student is enrolled in only one course, withdrawal is not permitted; the student must instead apply for semester/year withdrawal under Article (16).
- Course withdrawal is not permitted during the summer session, except in extreme necessity with Dean's approval.
- Students must continue attending the course until official withdrawal approval is granted.
- The Dean or designee must issue a decision within two weeks of submission in SIS.
- Students with a DN (Denial) grade in a course are not eligible to withdraw from that course.

Deferment of Studies

- A student may request to defer studies for an academic level, semester, or year, based on a valid and documented excuse approved by the appropriate authority.

- Deferment requests must be submitted no later than Week 2 of the semester.
- Approved deferment periods are not counted toward the maximum period for degree completion.
- Maximum Allowed Deferments: 3 non-consecutive semesters or 2 consecutive semesters.
- Female students accompanying husbands on international scholarships, and male students accompanying wives in similar cases, may receive up to two additional academic years of deferment with College Council approval and official documentation.
- Re-enrollment after deferment depends on the availability of the academic program and curriculum, especially if changes or closures occur during the deferment period.
- The Dean or designee issues a decision within two weeks of the request submission through SIS, based on the academic advisor's recommendation.

For more details, refer to the IAU Study and Examinations Guidelines.

Academic Probation

- Students are expected to maintain satisfactory academic progress throughout their enrollment.
- Academic probation is applied when performance falls below required standards, based on recommendations from the Academic Affairs Committee (AAC).
- The AAC may exercise discretion in applying regulations if they believe they place the student at an educational disadvantage.
- Conditions for Academic Probation:
    - A minimum cumulative GPA of 2.0 (out of 5.0) is required for graduation.
    - A student is placed on academic probation if:
        - The semester GPA falls below 2.0, or
        - The cumulative GPA falls below 1.8.
        - The student remains on probation until both GPAs reach at least 1.8.
        - Probation continues if the semester GPA remains below 2.0, even if the cumulative GPA is above 1.8.
    - A student may also be placed on probation upon receiving an "F" grade in a course and will remain on probation until the failed course is successfully remediated.
    - A student on probation must fulfill all academic performance requirements set by the AAC. Removal from probation is possible only after fulfilling these requirements and achieving the minimum GPA thresholds.
    - A student on probation or with a GPA less than 3.0 is not eligible to hold leadership roles (e.g., class leader or membership in the Student Board).
- The student is responsible for being aware of their academic standing and probation status.
- The Chair of the AAC will formally notify the student of:
    - Their probation status.
    - Specific requirements that must be fulfilled for removal from probation.
- The AAC may allow up to three probation periods. If probation requirements are not met after three consecutive semesters, the student may face suspension or dismissal.

Suspension

- A suspended student is considered temporarily withdrawn from the program.
- The student is not permitted to register for courses for one full academic year.
- To return, the student must submit a written petition at least six months before the intended return semester.
- If approved, re-enrollment will be under a performance contract outlining specific academic and professional expectations.

Dismissal from the University

- Permanent dismissal from the university occurs under the following conditions:
    - Three consecutive academic warnings (semesters) due to a cumulative GPA below the graduation requirement, as per Articles (41) and (42). The University Council may grant one additional semester to raise the GPA.
    - Failure to complete graduation requirements within 1.5 times the program's standard duration. The University Council may grant a one-year extension in exceptional cases.
    - Involvement in academic or professional misconduct, regardless of GPA.

Dismissal Procedures and Additional Considerations

- The summer semester is not included when counting semesters for academic warnings.
- The minimum cumulative GPA for graduation is 2.0 out of 5.0.

Opportunities for Re-enrollment:

- After three warnings, a fourth opportunity may be granted by the Permanent Academic Monitoring Committee if:
    - The required semester GPA to raise the cumulative GPA to 2.0 must exceed 4.0/5.0, and
    - The student must register the maximum allowed study load (12 credit hours).
    - Alternatively, if the semester GPA is at least 2.0 and the cumulative GPA is at least 1.8, the student may continue. Otherwise, the student must be suspended for one semester and attend mandatory academic counselling.
- A fifth opportunity may be granted by the University Council upon the Committee's recommendation.
- The Committee may approve a one-semester extension beyond the maximum allowed program duration, based on the College's recommendation.
- The University Council may grant an additional semester beyond that extension in exceptional cases, also based on the Committee's recommendation.

Re-enrollment Policy

This policy outlines the conditions under which a student may apply for re-enrollment following academic interruption, disciplinary dismissal, or voluntary withdrawal.

1. Re-enrollment Following Academic Interruption

- A student's enrollment is terminated if no courses are registered for in a given semester or academic year.

- Re-enrollment must use the same student ID and academic record.
- **First-Time Interruption:**
    - Re-enrollment is allowed before final exams of the semester preceding the intended return.
    - **Conditions:**
        - Interruption must not exceed 4 semesters (semester-based) or 2 academic years (annual system).
        - Request must be submitted via Student Information System (SIS).
        - Student must be able to complete the program within the maximum allowed duration.
        - The academic plan under which the student was enrolled must still be active.
        - Not allowed for students previously dismissed for academic reasons.
- **Extended Interruption:**
    - The Permanent Academic Monitoring Committee may approve re-enrollment if interruption exceeds standard limits, based on recommendation from the College Council, if:
        - Interruption does not exceed 6 semesters (semester-based) or 3 academic years (annual).
        - Interruption was due to a valid, documented reason.
        - At least 50% of credit hours for graduation were completed.
        - Cumulative GPA is at least 2.5 out of 5.
        - Student can graduate within the permitted time.
        - Original academic plan is still active.
- **Re-enrollment Limits:**
    - The Committee may approve a second re-enrollment under the same conditions.
    - The University Council may grant a third re-enrollment in exceptional cases.
- **Special Cases:**
    - If a student
        - fails to attend all registered courses for 4 weeks.
        - the student's record is marked as Compulsory Withdrawal (DN grade), and re-enrollment requires special approval.
    - The interruption period is not counted toward the total time allowed for graduation.
    - A visiting student must submit a transcript from the visiting institution by Week 2 of the following semester to avoid being considered interrupted.

2. Re-enrollment After Disciplinary Dismissal

- Re-enrollment may only be requested after a 3-year period from the disciplinary dismissal date.
- Conditions for approval:
    - Requires approval from the University Council, based on recommendation from the College Council and the Permanent Disciplinary Committee.
    - At least 75% of credit hours for graduation must be completed.

- Cumulative GPA must be at least 3.0 out of 5.
- The academic plan must still be available.
- The request must be submitted via SIS according to the announced deadlines.

3. Re-enrollment After Voluntary Withdrawal

- Re-enrollment is permitted using the same student ID and academic record if a valid excuse is accepted by the designated authority.
- Conditions: The student:
  - Must not have been under academic probation at the time of withdrawal.
  - Must return within 4 semesters (semester system).
  - Must have completed all first-year courses and met progression requirements.
  - Must receive approval from the College Council.
- The withdrawal semester is counted toward the program duration.
- Exceptions may be granted by the Permanent Academic Monitoring Committee based on university regulations.

Graduation

- Students with cumulative GPA (GPAX) greater than 2.00 can graduate from the University. They will be awarded with the following criteria:

GPAX	Academic award
≥4.75	Excellent on the First Dean List (or first-class honour) (Note: no F grades for any courses complete the program within 5 years and study at the University at least 60%)
4.25 – 4.74	Excellent on the Second Dean List (or second-class honour) (Note: no F grades for any courses complete the program within 5 years and study at the University at least 60%)
3.75 – 4.24	Very good
2.75 – 3.74	Good
2.00 – 2.74	Pass

- Students who wish to attend the graduation ceremony need to register with the University within the period specified.

Academic Integrity and Scientific Ethics Policy

The College of Pharmacy at Imam Abdulrahman Bin Faisal University (IAU) is committed to upholding the highest standards of academic integrity and scientific ethics.

Key Definitions

- **Academic Integrity**: Adhering to values of honesty, trust, fairness, respect, and responsibility in all academic work.

- **Academic Dishonesty includes:**
    - **Plagiarism**: Using others' ideas, words, or structure without proper citation or copying exact words without quotes and reference or using another's structure or closely paraphrasing without attribution.
    - **Cheating**: Using unauthorized materials during any academic activity.
    - **Fabrication**: Creating or altering data or information dishonestly.
    - **Bribery**: Offering something of value in exchange for grades or academic favors.
    - **Duplication**: Resubmitting one's previous work without permission.
    - **Surrogacy**: Taking or having someone take an exam on behalf of another.

Policy Guidelines

- Faculty must provide guidance on scientific writing and citation.
- Students must submit original work and cite all sources correctly.
- Acceptable similarity index is not more than 20%, excluding references.
- Faculty must use approved plagiarism detection software.
- Faculty are responsible for interpreting and evaluating similarity reports.

Procedures for Academic Dishonesty

- Faculty must train students in academic writing and citation practices.
- Faculty review submissions using plagiarism detection software.
- In case of suspected plagiarism:
    - A preliminary grade is given.
    - A detailed report is prepared.
    - The student is notified in writing.
    - The report is sent to the Head of Department.
- Head of Department forwards the report to the Dean.
- The Dean refers the case to the College Disciplinary Committee.
- Committee includes the Dean (Chair), VDAA, and two faculty members.
- Student is informed of the hearing and may present evidence or be represented.
- A decision requires agreement from at least three out of four members.
- The Dean submits the committee's recommendation to the University Permanent Disciplinary Committee.
- Possible penalties may include:
    - Failing the assignment or course.
    - Academic probation or remedial training.
    - Suspension for one semester or more.
    - Permanent dismissal for severe or repeated offenses.
- Final decisions are issued within 14 days and may differ in severity.
- Students may appeal to the University President.
- All records are maintained by the Dean.
- Sanctions may be disclosed to authorized institutional or professional bodies upon request.

- If the case is dismissed due to lack of evidence:
    - Another faculty member is assigned to evaluate the student's work and assign a final grade.
- Lack of awareness of the policy does not exempt a student from responsibility.
- Students are strongly encouraged to seek help and attend training on scientific writing and citation.

Student Grievance and Academic Appeals Policy

The College of Pharmacy is committed to creating a fair, transparent, and student-centered learning environment. This policy ensures that all students have the right to file academic and non-academic complaints and appeal academic decisions using a structured and supportive process.

Purpose

- To provide clear procedures for filing:
    - Academic complaints (e.g., grading, evaluation)
    - Non-academic complaints (e.g., unfair treatment, harassment)
    - Academic appeals (e.g., grade disputes, dismissal)

Key Definitions

Complaint: A concern related to any incident involving a student and a faculty or staff member.

Academic Grievance: Complaints related to instruction, grading, or academic decisions.

Non-Academic Grievance: Complaints concerning behaviour or treatment not related to academic activities.

1. Complaint Procedure

- Complaints must be submitted in writing with full details (date, time, persons involved, description).
- Anonymous complaints are not accepted.
- Academic complaints: submitted to the VDAA.
- Non-academic complaints: submitted to the Department Chair or higher authority if needed.
- The VDAA (for academic) or department head (for non-academic) will attempt informal resolution.
- If unresolved, the complaint is forwarded to the Dean, who appoints an ad hoc investigation committee.
- The committee reviews the case within 14 days.
- The committee hears from all parties and reviews evidence.
- A formal report is submitted to the Dean, who issues a final decision.
- If unsatisfied, the student may appeal to the College Council.
- The College Council's decision is final.

2. Academic Appeals

2.1 Types of Academic Appeals

- Grade disputes (midterm or final)
- Incomplete grades and make-up exams
- Academic suspension or dismissal
- Disciplinary actions

2.2 Grade Appeal Procedure

- Students may request re-evaluation of exam grades within:
    - 1 week for midterm grades
    - 2 weeks for final grades
- Students may not submit further appeals if three previous requests were dismissed in the last two semesters.
- Submit the official appeal form to the Dean or designee.
- If accepted:
    - A departmental committee (Head of Department, Course Instructor, and another faculty) reviews the grading.
    - The student may inspect the answer sheet and confirm or dispute the grading.
    - If the student disagrees:
        - A second independent committee (3 faculty members) will re-evaluate the work anonymously using the official answer key.
- Final grades are updated via the SIS system before the deadline.
- Student is informed in writing and must sign to acknowledge.

2.3 Incomplete Grades & Make-Up Exams

Refer to Policy on Absence from Exams and Make-Up Exams on page 18 of this handbook.

2.4 Appeals of Suspension or Dismissal

- Submit an appeal letter to the VDAA within 10 working days of receiving the academic decision.
- A hearing is scheduled within 30 days.
- A support person may attend the hearing.
- The Dean issues the final decision.
- Final appeal possible via official university grievance procedures.

2.5 Appeals of Disciplinary Actions

- Conducted by a committee (Dean, VDAA, two faculty members).
- Hearing within one week of incident.
- Final decisions are taken by the University's Permanent Disciplinary Committee.

Refer to the COP Policy and Procedure Manual - "Policy and Procedure for Student Discipline and Code of Conduct" and the "IAU Student Code of Conduct" for more details.

Program Management and Quality Assurance

The PharmD program at the College of Pharmacy is managed through a structured academic and administrative framework designed to ensure the highest standards of education, student support, and

continuous improvement. The program is overseen by the Dean of the College and four Vice Deans: Vice Dean for Academic Affairs, Vice Dean for Development and Community Partnership, Vice Dean for Clinical Affairs and Vice Dean for Research and Innovation, along with Department Chairs and course coordinators. These bodies work collaboratively to implement the curriculum, monitor student progress, and ensure that teaching and assessment practices align with both national and international accreditation standards. Regular departmental meetings and academic committees facilitate decision-making, course planning, and faculty development initiatives to support the educational mission of the college.

To maintain and enhance the quality of education, the College has a dedicated Quality Management and Academic Accreditation Unit that leads efforts in quality assurance, strategic planning, and accreditation compliance. The unit ensures that academic programs meet the standards of the Saudi National Center for Academic Accreditation and Evaluation (NCAAA) and international accrediting bodies such as the Accreditation Council for Pharmacy Education (ACPE). Program performance is regularly monitored through structured evaluation processes, including student course evaluations, graduate and employer feedback, key performance indicators (KPIs), and internal audits. The findings from these evaluations are used to inform continuous program development, address areas for improvement, and enhance the overall student learning experience.

Students are encouraged to actively participate in quality assurance processes through surveys, focus groups, and student representation on academic committees. Their feedback plays an essential role in shaping the learning environment, refining course delivery, and aligning the curriculum with professional competencies and market needs. This culture of shared responsibility enhances transparency, accountability, and a commitment to excellence in pharmacy education.

Learning Environment and Resources

All resources are provided for PharmD students to facilitate their learning, practice and research. These include:

Experienced Teaching Staff

The COP at IAU is proud to offer a learning environment supported by highly qualified and experienced faculty members, mentors, and clinical preceptors. The teaching staff comprises experts across diverse pharmacy disciplines who are committed to delivering high-quality education through innovative teaching strategies, evidence-based content, and active student engagement. In addition to classroom instruction, students benefit from the guidance of academic advisors and mentors who provide continuous support in academic planning, skill development, and career guidance. During experiential training, students are supervised by licensed clinical preceptors who are practicing pharmacists and healthcare professionals in accredited training sites. These preceptors play a vital role in developing students' clinical competence, professionalism, and patient-centered care skills, ensuring they are well-prepared for real-world pharmacy practice.

Facilities and equipment

The university provides state-of-the-art library serves as a hub for academic research and resource utilization. It houses an extensive collection of textbooks, reference materials, research journals, and online databases relevant to pharmacy practice and pharmaceutical sciences. Access to electronic resources is facilitated through a robust digital library, ensuring that students have comprehensive and up-to-date information at their fingertips.

The COP has modern laboratories equipped with cutting-edge technology to provide hands-on training and practical experience to PharmD students. These facilities include Pharmaceutical Chemistry Labs (2), Pharmacology Labs (2), Pharmaceutics Labs (2), Natural products Labs (2), Clinical Skills Labs (1) and a simulation pharmacy (1). Each lab is furnished with the latest equipment and instruments necessary for experimental work, ensuring that students receive comprehensive and practical training in pharmaceutical sciences. In addition, the College has 7 research labs offering cutting-edge technology such as NMR, LC-MS/MS, GC-MS, FTIR, ICP-MS, Zetasizer, transdermal diffusion apparatus, etc., which are share and easily accessed by males and females. There is a policy on research equipment safety in place, which includes installation and adjustments, normal use, maintenance, breakdown, and removal (Refer to the COP Policy and Procedure manual).

The classrooms are designed to enhance interactive and engaging learning experiences. Equipped with audio-visual aids, smart boards, and multimedia capabilities, these spaces facilitate effective communication and knowledge dissemination. The seating arrangements are conducive to group discussions, collaborative learning, and student-teacher interactions. Overall, the Program has 9 classrooms and interactive halls for males and 11 for females. In addition, the College accommodate a well-equipped computer lab with 20 computers with Wi-Fi access and access to specialized databases such as Micromedex and Lexicomp. Furthermore, the Deanship for E-Learning provides a huge facility that serves all the university including the PharmD Program.

To align with the practical aspects of the PharmD curriculum, the program is supported by healthcare facilities where students can observe and participate in real-world pharmacy practice. These facilities include affiliated hospitals, clinics, and community pharmacies, providing students with exposure to diverse healthcare settings and hands-on patient care experiences.

The administrative and office facilities are well-equipped to support the smooth functioning of the PharmD program. Faculty and administrative offices are equipped with the necessary infrastructure for efficient communication, record-keeping, and coordination.

In addition to academic spaces, the college maintains simulation laboratories and mock pharmacy settings that replicate real-world healthcare environments, enabling students to practice counselling, dispensing, and patient care skills in a controlled setting. The college also benefits from strong affiliations with hospitals, healthcare centers, and community pharmacies, offering a wide range of experiential training sites. All facilities are regularly maintained and upgraded to meet the evolving needs of the curriculum and ensure a conducive environment for academic excellence and student success.

Students' activities

The College of Pharmacy encourages students to engage in a wide range of extracurricular activities that enrich their academic journey and promote personal, professional, and social development. Through

participation in student-led events, workshops, and outreach campaigns, students develop leadership, communication, and teamwork skills essential for future pharmacists. The college generates a vibrant campus life that complements academic learning with co-curricular experiences aligned with the university's values of service, innovation, and excellence.

The Student Activities Unit at the college plays a central role in organizing cultural, athletic, social, and scientific activities throughout the academic year. Students are also actively involved in the Saidal Student Club, which serves as a platform for students to take initiative, lead events, and represent their peers. The club organizes health awareness campaigns, scientific competitions, peer support programs, and national and international participation in pharmacy-related events. In addition, the Community Service Unit offers students the opportunity to contribute to society through volunteering and outreach initiatives, including public health education, medication safety campaigns, and blood donation drives. These activities not only reinforce the college's commitment to community engagement but also help students develop a sense of social responsibility and professional identity.

Overall, students enrolled in the PharmD Program are provided with high-quality resources that help facilitate their learning, and all faculty members are supportive of their study throughout the six-year program.

APPENDIX

Appendix 1

Academic plan for 6 years of PharmD Program

Year 1 (Preparatory Year)

Level 1											
#	Course Code	Course Title	اسم المقرر	Credit Units	Credit Units			Contact Hours			Prerequisites
					Theory	Lab/Practical	Clinic, Field ...	Theory	Lab/Practical	Clinic, Field ...	Course Code
1	ENGL 101	General English Language 1	اللغة الإنجليزية العامة1	4	0	4	0	0	16	0	
2	BIOL 105	Biology 1	أحياء1	3	2	1	0	2	2	0	
3	PHYS 106	Physics	فيزياء	3	2	1	0	2	2	0	
4	COMP 107	Computer Skills	مهارات الحاسب الآلي	3	2	1	0	2	2	0	
5	ISLM 181	Creed and Family in Islam	العقيدة والأسرة في الإسلام	2	2	0	0	2	0	0	
Total				15	8	7	0	8	22	0	
Grand Total					15			30			
Total no. of courses having applied (partial/full) component (practical/lab/clinic/field etc.):				4							

Level 2											
#	Course Code	Course Title	اسم المقرر	Credit Units	Credit Units			Contact Hours			Prerequisites
					Theory	Lab/Practical	Clinic, Field ...	Theory	Lab/Practical	Clinic, Field ...	Course Code
1	ENGL 102	General English Language 2	اللغة الإنجليزية العامة2	3	0	3	0	0	10	0	ENGL 101
2	ENGL 103	English for Academic and Specific Purpose	اللغة الإنجليزية للأغراض الأكاديمية والتخصصية	3	0	3	0	0	6	0	
3	BIOL 108	Biology 2	أحياء2	3	2	1	0	2	2	0	
4	CHEM 109	Chemistry	كيمياء	3	2	1	0	2	2	0	
5	LRSK 104	Learning & communication Skills	مهارات التعلم والاتصال	2	2	0	0	2	0	0	
6	ARAB 182	Arabic Language Skills	مهارات اللغة العربية	2	2	0	0	2	0	0	
Total				16	8	8	0	8	20	0	
Grand Total					16			28			
Total no. of courses having applied (partial/full) component (practical/lab/clinic/field etc.):					4						

- **Year 2**

Level 3											
#	Course Code	Course Title	اسم المقرر	Credit Units	Credit Units			Contact Hours			Prerequisites
					Theory	Lab/Practical	Clinic, Field ...	Theory	Lab/Practical	Clinic, Field ...	Course Code
1	PHCH 201	Pharmaceutical organic chemistry 1	الكيمياء العضوية الصيدلية 1	3	2	1	0	2	3	0	
2	PHCY 202	Foundation of health care and pharmacy practice	أُسس الرعاية الصحية وممارسة الصيدلية	2	2	0	0	2	0	0	
3	ANAT 203	Anatomy and histology	علم التشريح والأنسجة	3	2	1	0	2	3	0	
4	BIOCH 204	Biochemistry 1	الكيمياء الحيوية 1	2	2	0	0	2	0	0	
5	PHYL 205	Physiology 1	علم وظائف الأعضاء 1	2	2	0	0	2	0	0	
6	PHCT 206	Physical pharmacy	الصيدلة الفيزيائية	3	2	1	0	2	3	0	
7	HIST 281	History and civilization of KSA	تاريخ وحضارة المملكة	2	2	0	0	2	0	0	
Total				17	14	3	0	14	9	0	
Grand Total					17			23			
Total no. of courses having applied (partial/full) component (practical/lab/clinic/field etc.):									3		

Level 4											
#	Course Code	Course Title	اسم المقرر	Credit Units	Credit Units			Contact Hours			Prerequisites
					Theory	Lab/Practical	Clinic, Field ...	Theory	Lab/Practical	Clinic, Field ...	Course Code
1	PHYL 208	Physiology 2	علم وظائف الأعضاء 2	2	2	0	0	2	0	0	PHYL 205
2	BIOCH 209	Biochemistry 2	الكيمياء الحيوية 2	2	2	0	0	2	0	0	BIOCH 204

3	PHCT 210	Pharmaceutical calculations	الحسابات الصيدلانية	2	1	1	0	1	2	0	
4	PHCH 211	Pharmaceutical Analytical Chemistry	الكيمياء التحليلية الصيدلية	3	2	1	0	2	3	0	
5	PHCT 212	Pharmaceutics 1	صيدلانيات 1	3	2	1	0	2	3	0	
6	PHCH 213	Pharmaceutical organic chemistry 2	الكيمياء العضوية الصيدلية 2	2	2	0	0	2	0	0	PHCH 201
7	NAPT 214	Fundamentals of natural products	أساسيات النواتج الطبيعية	3	2	1	0	2	3	0	
8	ISLAM 282	Islamic ethics and values	الأخلاق والقيم في الإسلام	2	2	0	0	2	0	0	
Total				19	15	4	0	15	11	0	
Grand Total					19			26			
Total no. of courses having applied (partial/full) component (practical/lab/clinic/field etc.):										4	

- ## Year 3

Level 5											
#	Course Code	Course Title	اسم المقرر	Credit Units	Credit Units			Contact Hours			Prerequisites
					Theory	Lab/Practical	Clinic, Field ...	Theory	Lab/Practical	Clinic, Field ...	Course Code
1	PHCT 301	Pharmaceutics 2	صيدلانيات 2	2	2	0	0	2	0	0	PHCT 212
2	PHCY 302	Pharmacy ethics, Law and regulation	اخلاقيات وقانون ولوائح الصيدلة	2	2	0	0	2	0	0	
3	NUTR 303	Clinical nutrition and dietary supplements	التغذية العلاجية والمكملات الغذائية	3	3	0	0	3	0	0	
4	STAT 304	Biostatistics	الإحصاء الحيوي	1	0	1	0	0	2	0	
5	MICRO 305	Microbiology	علم الأحياء الدقيقة	3	2	1	0	2	3	0	
6	NAPT 306	Complementary and Integrative Medicine	الطب التكميلي والتكاملي	2	2	0	0	2	0	0	NAPT 214

7	RESM 307	Pharmacoepidemiology and research methods	علم وبائيات الدواء ومنهجية البحث	3	3	0	0	3	0	0	
8	BUS 381	Entrepreneurship	ريادة الأعمال	2	2	0	0	2	0	0	
Total				18	16	2	0	16	5	0	
Grand Total					18			21			
Total no. of courses having applied (partial/full) component (practical/lab/clinic/field etc.):										2	

Level 6											
#	**Course Code**	**Course Title**	**اسم المقرر**	**Credit Units**	**Credit Units**			**Contact Hours**			**Prerequisites**
					Theory	Lab/Practical	Clinic, Field …	Theory	Lab/Practical	Clinic, Field …	**Course Code**
1	PHBT 309	Pharmaceutical biotechnology	التقنية الحيوية الصيدلانية	2	2	0	0	2	0	0	
2	CLPH 310	Community pharmacy and self-care	صيدلية المجتمع والعناية الذاتية	2	2	0	0	2	0	0	
3	PHARM 311	Introduction to pharmacology	مقدمة في علم الأدوية	3	2	1	0	2	3	0	
4	PHCH 312	Principles of drug action	مبادئ عمل الدواء	2	2	0	0	2	0	0	PHCH 213
5	PATH 313	Pathophysiology	علم فسيولوجيا الأمراض	2	2	0	0	2	0	0	PHYL 208
6	PHCT 314	Drug delivery systems	أنظمة توصيل الدواء	2	2	0	0	2	0	0	
7	CLPH 315	Evidence-based practice and Drug information	الممارسة القائمة على الأدلة ومعلومات الأدوية	2	1	1	0	1	2	0	
8	IMMUN 316	Immunology	علم المناعة	2	2	0	0	2	0	0	
Total				17	15	2	0	15	5	0	
Grand Total					17			20			
Total no. of courses having applied (partial/full) component (practical/lab/clinic/field etc.):										0	

Summer semester						
#	Course Code	Course Title	اسم المقرر	Clinic, Field…		Prerequisites
				Credit Units	Contact Hours	Course Code
1	CLPH 333	Introductory Pharmacy Practice Experience 1	التدريب الصيدلي الميداني التمهيدي 1	2	40	CLPH 310

- **Year 4**

Level 7											
#	Course Code	Course Title	اسم المقرر	Credit Units	Credit Units			Contact Hours			Prerequisites
					Theory	Lab/Practical	Clinic, Field …	Theory	Lab/Practical	Clinic, Field …	Course Code
1	PHCH 401	Medicinal chemistry 1	الكيمياء الدوائية 1	3	3	0	0	3	0	0	PHCH 312
2	PHARM 402	Pharmacology 1	علم الأدوية 1	3	3	0	0	3	0	0	PHARM 311
3	CLPH 403	Patient care skills 1	مهارات رعاية المرضى 1	2	1	0	1	1	0	3	
4	CLPH 404	Pharmacotherapy 1	العلاج الدوائي 1	5	4	0	1	4	0	3	PHARM 311 PATH 313
5	PHCH 405	Instrumental analysis	التحليل الآلي	3	2	1	0	2	3	0	PHCH 211
6	PHCT 406	Biopharmaceutics and pharmacokinetics	الصيدلة الحيوية وحركية الدواء	2	2	0	0	2	0	0	PHCT 206
Total				18	15	1	2	15	3	6	
Grand Total					18			24			
Total no. of courses having applied (partial/full) component (practical/lab/clinic/field etc.):										3	

Level 8											
#	Course Code	Course Title	اسم المقرر	Credit Units	Credit Units			Contact Hours			Prerequisites
					Theory	Lab/Practical	Clinic, Field …	Theory	Lab/Practical	Clinic, Field …	Course Code
1	PHCH 407	Medicinal chemistry 2	الكيمياء الدوائية 2	3	3	0	0	3	0	0	PHCH 312
2	PHARM 408	Pharmacology 2	علم الأدوية 2	2	2	0	0	2	0	0	PHARM 311
3	CLPH 409	Patient care skills 2	مهارات رعاية المرضى 2	2	1	0	1	1	0	3	
4	CLPH 410	Pharmacotherapy 2	العلاج الدوائي 2	5	4	0	1	4	0	3	PHARM 311 PATH 313
5	CLPH 411	Patient safety and informatics	سلامة المرضى و المعلوماتية	3	3	0	0	3	0	0	
6	CLPH 412	Clinical pharmacokinetics	حركية الدواء السريرية	2	1	1	0	1	3	0	PHCT 406
7		Elective course 1	مقرر اختياري 1	2	2	0	0	2	0	0	
Total				19	16	3	0	16	3	6	
Grand Total					19			25			
Total no. of courses having applied (partial/full) component (practical/lab/clinic/field etc.):					3						

Summer semester						
#	Course Code	Course Title	اسم المقرر	Clinic, Field…		Prerequisites
				Credit Units	Contact Hours	Course Code
1	CLPH 444	Introductory Pharmacy Practice Experience 2	التدريب الصيدلي الميداني التمهيدي 2	2	40	PHCH 401 PHARM 402 CLPH 403 CLPH 404

- **Year 5**

Level 9											
#	Course Code	Course Title	اسم المقرر	Credit Units	Credit Units			Contact Hours			Prerequisites
					Theory	Lab/Practical	Clinic, Field ...	Theory	Lab/Practical	Clinic, Field ...	Course Code
1	PHCH 501	Medicinal chemistry 3	الكيمياء الدوائية 3	2	2	0	0	2	0	0	PHCH 312
2	PHARM 502	Pharmacology 3	علم الأدوية 3	2	2	0	0	2	0	0	PHARM 311
3	CLPH 503	Pharmacotherapy 3	العلاج الدوائي 3	5	4	0	1	4	0	3	PHARM 311 PATH 313
4	CLPH 504	Patient care skills 3	مهارات رعاية المرضى 3	2	1	0	1	1	0	3	CLPH 404 & CLPH 410
5	PHCT 505	Industrial pharmacy	الصيدلة الصناعية	2	2	0	0	2	0	0	
6	PHCY 506	Pharmaceutical economics and policies	اقتصاديات وسياسات صيدلانية	2	2	0	0	2	0	0	
7	PHCY 507	Graduation project	مشروع التخرج	IP	0	0	3	0	0	9	RESM 307
8	MGMT 508	Pharmacy management and leadership	الإدارة والقيادة في الصيدلة	2	2	0	0	2	0	0	
9		Elective course 2	2 مقرر اختياري	2	2	0	0	2	0	0	
Total				19	17	0	5	17	0	15	
Grand Total					19			32			
Total no. of courses having applied (partial/full) component (practical/lab/clinic/field etc.):					3						

Level 10											
#	Course Code	Course Title	اسم المقرر	Credit Units	Credit Units			Contact Hours			Prerequisites
					Theory	Lab/Practical	Clinic, Field ...	Theory	Lab/Practical	Clinic, Field ...	Course Code
1	CLPH 510	Pharmacotherapy 4	العلاج الدوائي 4	5	4	0	1	4	0	3	PHARM 311 & PATH 313
2	PHCH 511	Medicinal chemistry 4	الكيمياء الدوائية 4	1	1	0	0	1	0	0	PHCH 312
3	PHARM 512	Pharmacology 4	علم الأدوية 4	1	1	0	0	1	0	0	PHARM 311
4	CLPH 513	Advanced patient care	رعاية المرضى المتقدمة	1	0	0	1	0	0	3	CLPH 404 & CLPH 410 & CLPH 503
5	PHTX 514	Clinical toxicology	علم السموم السريري	2	2	0	0	2	0	0	PHARM 502
6	BUS 515	Pharmaceutical marketing and business	الأعمال والتسويق في الصيدلة	2	2	0	0	2	0	0	
7	CLPH 516	Total parenteral nutrition (TPN)	التغذية الوريدية الكاملة	2	2	0	0	2	0	0	NUTR 303
8	PHCY 507	Graduation project	مشروع التخرج	6	0	0	3	0	0	9	RESM 307
Total				20	12	0	5	12	0	15	
Grand Total					20			27			
Total no. of courses having applied (partial/full) component (practical/lab/clinic/field etc.):					3						

- ## Year 6 (Internship)

List of Advanced pharmacy practice experience (APPE):

	Rotations	اسم الدورة	No. of weeks	APPE Core or Elective
1	Community Pharmacy	صيدلية المجتمع	4	Core
2	Ambulatory Patient Care / Outpatient Pharmacy	رعاية مرضى العيادات الخارجية / الصيدلية الخارجية	4	Core
3	In-Patient Pharmacy	الصيدلية الداخلية	4	Core
4	Internal Medicine	الطب الباطني	4	Core
5	Critical Care	العناية الحرجة	4	Elective
6	Nephrology	أمراض الكلى	4	Elective
7	Solid Organ Transplant	زراعة الأعضاء	4	Elective
8	Oncology/Hematology	الأورام / أمراض الدم	4	Elective
9	Pediatrics	طب الأطفال	4	Elective
10	Pediatrics Critical Care	العناية الحرجة للأطفال	4	Elective
11	Neonates	حديثي الولادة	4	Elective
12	Infectious Diseases	الأمراض المعدية	4	Elective
13	Cardiology	أمراض القلب	4	Elective
14	Parenteral Nutrition	التغذية الوريدية	4	Elective
15	Psychiatry	الطب النفسي	4	Elective
16	Saudi Food and Drug Authority	الهيئة العامة للغذاء والدواء	4	Elective
17	Pharmacy Administration	الإدارة الصيدلية	4	Elective
18	Drug Information Center	مركز معلومات الأدوية	4	Elective
19	Toxicology and Poison Control	السموم	4	Elective
20	Pharmaceutical Manufacturing	التصنيع الدوائي	4	Elective
21	Drug Company	شركة الأدوية	4	Elective
22	Medication Safety	سلامة الدواء	4	Elective
23	Quality Assurance	ضمان الجودة	4	Elective
24	Academia	الأكاديميا	4	Elective

25	Health Informatics	المعلوماتية الصحية	4	Elective
26	Pharmacoeconomics and Formulary Management	اقتصاديات الدواء	4	Elective

*** Mandatory rotations (4 rotations – 16 weeks)**
**** Elective rotations (7 rotations– 28 weeks)**

- ## Elective Courses 1

#	Course Code	Course Title	اسم المقرر	Credit Units	Level	Credit Units			Contact Hours			Prerequisites
						Theory	Lab/Practical	Clinic, Field …	Theory	Lab/Practical	Clinic, Field …	Course Code
1	PHCH 451	Computer Aided Drug Design	تصميم الدواء بمساعدة الحاسوب	2	8	2	0	0	2	0	0	PHCH 312
2	PHCT 452	Cosmetic Formulations	صيغة مستحضرات التجميل	2	8	2	0	0	2	0	0	
3	NAPT 453	Natural Cosmeceuticals	مستحضرات التجميل الدوائية الطبيعية	2	8	2	0	0	2	0	0	
4	PHCY 454	Foundation of Clinical Trials	أسس التجارب السريرية	2	8	2	0	0	2	0	0	
5	PHCH 455	Drug Discovery	استكشاف الدواء	2	8	2	0	0	2	0	0	

- **Elective Courses 2**

#	Course Code	Course Title	اسم المقرر	Credit Units	Level	Credit Units			Contact Hours			Prerequisites
						Theory	Lab/Practical	Clinic, Field …	Theory	Lab/Practical	Clinic, Field …	Course Code
1	PHCY 551	Social and Behavioral Pharmacy	الصيدلة الاجتماعية والسلوكية	2	9	2	0	0	2	0	0	
2	NAPT 552	Poisonous and Abused Natural Products	النواتج الطبيعية السامة والمساء استخدامها	2	9	2	0	0	2	0	0	
3	PHCT 553	Pharmaceutical Quality Control	رقابة الجودة الصيدلانية	2	9	2	0	0	2	0	0	PHCH 405
4	MED 554	Precision Medicine	الطب الدقيق	2	9	2	0	0	2	0	0	PHARM 311
5	PHCT 556	Good Manufacturing Practice	الممارسة الجيدة في التصنيع	2	9	2	0	0	2	0	0	

**Include elective courses in separate tables as groups Elective 1, Elective 2.. (if needed)*

Appendix 2

Course Descriptions

Year 2: First Semester (Semester 3)

Pharmaceutical Organic Chemistry 1 (PHCH 201)

This course covers the fundamental concepts of saturated hydrocarbons, substituted hydrocarbons, and their chemistry, with a focus on their importance and applications in the pharmaceutical industry. Topics covered include acid-base theories, nomenclature, synthesis, properties, and the pharmaceutical significance of alkanes, alkyl halides, alcohols, ethers, epoxides, phenols, and sulfides. The course will also cover bonding and structural isomerism, stereochemistry, and their biological applications.

Foundation of health care and pharmacy practice (PHCY 202)

This course provides a comprehensive overview of pharmacy and its education process as well as its subjects from admissions to advanced training. In addition, students will explore the various aspects of the Saudi Arabian healthcare system, including its organization, structure, financing mechanisms, delivery models, and regulatory frameworks.

Anatomy and Histology (**ANAT 203**)

This foundational course provides students with a solid understanding of essential anatomical terminology and concepts, which are critical for a comprehensive grasp of body systems morphology. It also imparts core knowledge of human anatomy at both the gross and microscopic levels, offering a wide-ranging overview of body structures. It also introduces the fundamentals of neuroanatomy by outlining the structure of the nervous system, alongside embryology to provide insights into human development. The theoretical knowledge acquired in this course is complemented by practical application. A variety of educational activities are utilized to bridge the gap between theory and practice, which is vital for the effective application of anatomical principles within the realm of Pharmacy.

Biochemistry 1 (BIOCH 204)

The course covers the fundamental concept of biochemistry and application of biochemistry in human life with focusing on the chemistry of carbohydrate, amino acids, protein, lipids, nucleic acids, vitamins, as well as enzyme and enzyme regulations.

PHYSIOLOGY 1 (**PHYL 205**)

The Physiology 1 course provides students with a comprehensive understanding of the normal functions of the human body and its underlying mechanism. The basic aim is to highlight the relationship between systems and how they help to maintain the functioning of the whole body. Special emphasis is laid on homeostasis and the control systems that maintain it.

Physical pharmacy (**PHCT 206**)

This course offers students a comprehensive understanding of the fundamental concepts and theories in physical pharmacy. Throughout the course, students will develop a solid foundation in the principles of physical pharmacy that are essential for the design and development of pharmaceutical products. The course covers a wide range of topics, including thermodynamics, molecular interactions, solubility, states of matter, surface phenomena, chemical stability and kinetics, and rheology. Students will learn how these principles apply to the formulation, manufacturing, and stability of pharmaceutical products. The course utilizes a combination of lectures and laboratory experiments to enhance students' understanding of the theoretical concepts and their practical applications. Through hands-on experiments, students will gain valuable experience in measuring and analyzing physical properties of

pharmaceutical substances. By the end of the course, students will possess the knowledge and skills necessary to comprehend and apply the physical and chemical principles underlying the development and performance of pharmaceutical products.

(HIST 281) تاريخ وحضارة المملكة العربية السعودية

يحتوي المقرر على استعراض الجوانب التاريخية والحضارية للمملكة العربية السعودية وإرثها الثقافي، وجهود حكامها في بناء الدولة السياسي والحضاري ودورهم في خدمة القضايا العربية والإسلامية والإنسانية، وتحقيق رؤية 2030 في مجال السياحة والتراث الوطني .

Year 2: Second Semester (Semester 4)

PHYSIOLOGY 2 (**PHYL 208**)

The Physiology 2 course provides students with a comprehensive understanding of the normal functions of the human body and underlying mechanism. Basic aim is to highlight the relationship between systems and how they help to maintain the functioning of the whole body. Special emphasis is laid on homeostasis and the control systems that maintain it.

Biochemistry 2 (**BIOCH 209**)

The course covers the metabolic pathways and regulations of carbohydrates, amino acids, proteins, nucleic acids, lipids, steroids, heme, xenobiotics, free radicals, and antioxidants and their implications in human diseases.

Pharmaceutical calculations (**PHCT 210**)

The Pharmaceutical Calculation course aims to equip students with a fundamental understanding of calculations relevant to pharmacy practice. Students will develop the necessary skills to effectively handle various types of calculations commonly encountered in the field. This includes calculations involving concentration expressions, density, and specific gravity, as well as the ability to manipulate and modify formulas to achieve desired results. Additionally, students will learn essential skills to accurately solve a diverse range of pharmaceutical calculation problems. By acquiring proficiency in pharmaceutical calculations, students can significantly reduce dispensing errors and contribute to improved patient outcomes. The course emphasizes the importance of precision and accuracy in calculations, providing students with the knowledge and tools necessary for successful pharmaceutical practice.

Pharmaceutical Analytical Chemistry (**PHCH 211**)

This course provides students with a comprehensive understanding of analytical chemistry principles and their application in the pharmaceutical industry. It covers topics such as controlling error sources and implementing effective error control strategies. Students will learn to analyze measurement uncertainty and employ statistical methods for data analysis. The course emphasizes expressing drug and impurity concentrations using various units, including molarity, mass fraction, and percentage. Additionally, students will gain insights into chemical equilibrium's significance regarding drug stability and solubility. Volumetric techniques in pharmaceutical analysis will be explored, with hands-on training in designing and executing analytical methods like volumetric titration. Spectroscopic instrumental techniques will also be covered, with hands-on practice using the spectrophotometer and Excel spreadsheets to develop calibration curves and calculate drug concentration in pharmaceutical preparations.

Pharmaceutics 1 (**PHCT 212**)

This course is designed mainly to provide pharmaceutics lessons concerning the preparation and evaluation of various pharmaceutical dosage forms. This course forms the foundation of therapeutics, as no drug can be administered to patients without an appropriate dosage form and different dosage forms can result in different pharmacokinetics and therapeutic outcomes. Additionally, it will equip students with fundamental knowledge about the design of pharmaceutical dosage forms, which will be useful in their studies on pharmacokinetics and pharmacotherapeutics

Pharmaceutical Organic Chemistry-2 (**PHCH 213**)

The Pharmaceutical Organic Chemistry-2 course is designed to provide students with a fundamental understanding of the basic chemical structures of various categories of organic compounds. The course aims to teach students to identify these structures and describe the different functional groups, including their structures, chemical reactions, and biological importance. Additionally, the course aims to demonstrate the relationships between the chemistry of organic compounds and their pharmaceutical and medicinal applications, providing students with a greater understanding of the practical applications of organic chemistry. Finally, students will learn to analyze chemical reactions, including predicting starting materials, final products, and their mechanisms. Overall, the course aims to provide students with a comprehensive understanding of the principles of organic chemistry and their practical applications in the real world.

Fundamentals of Natural Products (**NAPT-214**)

This course describes the natural sources of drugs (plants, animals, microbes, minerals etc.), main active constituents, therapeutic uses, possible side effects of the primary metabolites (CHO, Lipids, Waxes) and secondary metabolites (alkaloids, glycosides, tannins, resins and resins combinations, phenolics, volatile oils, and fixed oils). The classification and nomenclature of natural products are also discussed in the course. Moreover, the course involves essential techniques for identification, extraction, isolation, quality evaluation and standardization of natural products (as per WHO and FDA guidelines).

Year 3: First Semester (Semester 5)

Pharmaceutics 2 (PHCT 301)

This course offers an overview of sterile dosage forms, including parenteral and ophthalmic preparations. Students will learn the critical aspects of pharmaceutical compounding, sterilization techniques, testing, monitoring, IV admixture, extemporaneous preparations, and the compounding and dispensing of hazardous drugs and controlled substances in hospital pharmacy settings. Additionally, the course will cover radiopharmaceuticals and nuclear pharmacy, fundamentals of prescription interpretation, and the practical application of these topics through lab and hospital pharmacy visits and demonstrations.

Pharmacy ethics, Law and regulation (PHCY 302)

The general description of the law and ethics course is to introduce to the pharmD students to the concept of law in Saudi Arabia, define ethics and how it is differentiated from law, define the different levels of ethical decision making and review the code of ethics for pharmacists during their practice.

Clinical Nutrition and Dietary Supplements (NUTR-303)

The course describes the sources, characteristics, health effect, and possible toxicities of macronutrients (carbohydrates, fat, protein), vitamins (fat-soluble vitamins and water-soluble vitamins), minerals (macro minerals and microminerals), probiotics and prebiotics, enzymes, and other food

supplements besides their applications in pharmacy practice settings as per Saudi FDA regulations. Types and amounts of dietary requirements; types of nutritional assessments to identify malnutrition and diet-related disease states; enteral and parenteral nutrition support; food allergy and intolerance; and food-drug interaction are also demonstrated in the course. Moreover, the course focuses on the clinical nutritional intervention for specific disease states (cancer, cardiovascular diseases, diabetic, gastrointestinal diseases, hepatobiliary diseases, kidney diseases, metabolic and respiratory stress etc.).

Biostatistics (STAT- 304)

Biostatistics is a comprehensive course designed to provide Pharmacy students with a complete understanding of statistical methods and their applications in clinical practice and research. This course explores the principles and techniques of biostatistics, focusing on their relevance to Pharmacy practice. The course aims to equip students with the necessary skills to interpret and critically analyze clinical data, evaluate therapeutic interventions, and make evidence-based decisions in patient care.

Microbiology (MICRO 305)

This course covers the basic and clinical concepts of medical microbiology to understand and learn various infectious diseases caused by different microorganisms like bacteria, viruses, parasites, and fungi . This course covers the microbiological properties of various microbes, pathogenesis mechanisms, virulence factors, clinical features and laboratory identification of various microbes. In addition, prevention and control mechanisms of different microorganisms and effective prophylaxis of major infectious diseases. Students are taught about the proper use of antimicrobial agents to treat various infectious diseases and the importance of antimicrobial resistance to anti-microbial drugs and its prevention.

Complementary and Integrative Medicine (NAPT-306)

This course provides the students with thorough understanding of the various CIM modalities (naturopathy, cupping, acupuncture, manual therapies etc.) in the health care system for the treatment of different disease. The course teaches students how to incorporate complementary and alternative therapies into a patient-specific therapeutic plan for the treatment of various chronic and emerging diseases (such as CVS, CNS, UTIs, RTIs, liver and digestive system, musculoskeletal, cancer, and leishmania etc.) while maintaining patient safety.

Pharmacoepidemiology and Research Methods (RESM 307)

This course provides students with an overview of the variety of research methods used in pharmacoepidemiological research and the skills to determine which research method/s best answer/s their research question. Research challenges, including appropriate selection of design, research participants, sample size, data collection, selection of appropriate measures, data analysis and interpretation of results are studied.
It encompasses the understanding of presentation, analysis, interpretation of collected data.
In addition, this course the basic in terms of pharmacoepidemiology measurement mathematical skills and its interpretation.

BUS 381 ريادة الأعمال

يعزز المقرر مفهوم الفكر الريادي وأهمية ريادة الأعمال على الصعيد الشخصي والاقتصادي. ويستعرض كيفية تحويل الأفكار إلى مشاريع تطبيقية وفقا لأسس وخطط إنشاء المشاريع التجارية السليمة، وتحقيق رؤية المملكة 2030 في مجال خلق فرص العمل من خلال دعم ريادة الأعمال.

Year 3: Second Semester (Semester 6)

Pharmaceutical Biotechnology (**PHBT 309**)

Pharmaceutical Biotechnology course is designed to educate PharmD students about the basics of genetics as well as the tools of pharmaceutical biotechnology for the production of therapeutic proteins, vaccines and clonal antibodies. The course also covers essential techniques used in drug discovery and cell and gene therapy. The course incorporates self-learning tasks to improve students' skills of self-learning and development and broaden the student's knowledge of the subject.

Community pharmacy and self care (CLPH 310)

This course provides a comprehensive overview of community pharmacies, their services, pharmacist duties in the various community pharmacy settings, in addition to diagnosing and assess community patients with minor illnesses and decide on the proper medication regimens.

Introduction to Pharmacology (**PHARM 311**)

This course introduces students to the foundations of Pharmacology, including its principles, drug actions, and adverse effects. It covers key drug classes, such as diuretics, vasodilators, NSAIDs, and glaucoma treatments, while exploring pharmacogenomics and safety regulations. The laboratory component emphasizes ethical animal use, safety protocols, and simulation technologies, supported by interactive and problem-based learning. The course also promotes the application of the 3 R's (Replacement, Reduction, Refinement) in pharmacological research.

Principles of drug action (**PHCH 312**)

This course introduces the students to medicinal chemistry and describes the basic principles of the pharmacodynamics and pharmacokinetics properties of drugs, and the medicinal chemistry of drugs acting on autonomic nervous system including both cholinergic and adrenergic.

Drug delivery systems (**PHCT 314**)

This course offers a comprehensive exploration of different drug delivery systems, encompassing their design, development, and implementation. Students will gain a comprehensive understanding of the various types of drug delivery systems available and their applications in pharmaceutical practice. Students will gain insights into novel drug delivery systems, exploring emerging technologies and innovative approaches in the field. The course also addresses the challenges encountered in drug delivery, such as ensuring drug stability, minimizing toxicity, and enhancing targeting efficiency.

Evidence Based Practice and Drug Information (**CLPH 315**)

This course introduces students to Evidence-based Practice (EBP) and Drug Information Services (DIS). Students will learn the principles of scientific writing integrity, formulate answerable questions, explore various drug information resources, retrieve pertinent information, and evaluate the quality of literature. They'll also develop skills in responding to drug information requests, creating drug monographs, categorizing evidence quality, and making evidence-based conclusions. Additionally, students will gain familiarity with citation manager software and actively participate in journal club discussions, enhancing their critical appraisal and communication skills within the context of EBP and DIS.

Immunology (**IMMUN 316**)

This course covers the basic and clinical concepts in immunology including adaptive and innate immunity, immunological products and their applications in prophylaxis, therapy and diagnosis; antigen-antibody reactions, immune-regulation, immunological memory and tolerance, peculiarities of the immune system including autoimmunity, transplantation and rejection; specific topics including anatomy of the immune system, organs, tissues, cells and soluble factors of immune system; the

immune response and vaccination, humoral immunity, cell-mediated immunity, hypersensitivity reactions, immune deficiency disorders, transplantation and tumor immunology.

Year 3: Summer Training

Introductory pharmacy practice experience 1 （CLPH 333）

Year 4: First Semester (Semester 7)

Medicinal chemistry 1 (PHCH401)

This course provides the students with thorough understanding of the medicinal chemistry and pharmacological activity of endocrine and steroidal drugs including sex hormones and corticosteroids as well as nonsteroidal anti-inflammatory, cardiovascular agents, antitussive and antihistamine.

Pharmacology 1 (PHARM 402)

Systemic pharmacology focuses on pharmacokinetic, pharmacodynamic principles, mechanism of action, adverse drug reactions and drug-drug interactions commonly seen in clinical pharmacy practice. The scope of coverage will be drugs used in cardiovascular diseases, drugs for blood disorders, drugs for diabetes, drugs used for obesity, hormonal drugs (pituitary and hypothalamic hormones), drugs used in thyroid disorders, corticosteroids, male and female sex steroids, contraceptive and fertility drugs, drugs used in genito-urinary system, drugs acting on bone and mineral homeostasis, drugs used in asthma and chronic obstructive pulmonary disease (COPD), antitussives and mucolytic agents, drugs for smoking cessation.

Patient Care Skills 1 (CLPH 403)

This course is composed of introductory foundation to pharmaceutical care practice focusing on the patient-centered care. This practical and simulation-based course will cover the 5 steps of the patient care process (1) collecting subjective and objective information about the patient; (2) assessing the collected data to identify problems, determine the adequacy of current treatments, and set priorities; (3) creating an individualized care plan that is evidence-based and cost-effective; (4) implementing the care plan; and (5) monitoring the patient over time during follow-up encounters to evaluate the effectiveness of the plan and modify it as needed. Simulation pharmacy/clinic will be utilized during the practical sessions to promote hands on experience.

Pharmacotherapy 1 (CLPH404)

This course will explain the principles and the updated guidelines to treat cardiovascular, endocrinological, gynecological, and respiratory. During the course the students will go over the clinical presentation and diagnosis of the disease followed by determining the desired therapeutic plan. Additionally, they will be Indicating the appropriate management along with evaluating the therapeutic outcomes. Moreover, this course will explain the principles and the updated guidelines to treat the diseases mentioned above.

Instrumental Analysis (PHCH 405)

The Instrumental Analysis course provides students with a comprehensive understanding of analytical techniques used in scientific research and industrial laboratories. It covers sample preparation, chromatographic techniques, spectrophotometry, infrared spectroscopy (IR), and mass spectrometry. The course includes both theoretical knowledge and hands-on laboratory exercises, allowing students to develop practical skills in instrument operation, data analysis, and troubleshooting. By the end of the course, students will be well-equipped to perform accurate and reliable analytical experiments and make informed decisions in various scientific and industrial contexts.

Biopharmaceutics and pharmacokinetics (PHCT 406)

It includes the principles of biopharmaceutics, clearance, volume of distribution, orders of kinetics, compartmental models, plasma protein binding; first-pass and second-pass metabolism; physicochemical and dosage form factors influencing bioavailability; assessment and measurement of key biopharmaceutical properties, bioequivalence, and biopharmaceutical classification scheme (BCS); influence of dosage regimens on the plasma concentration-time profile of a drug in the body and factors involved in steady-state plasma concentration of a drug. Practice/lab: Dissolution, bioavailability, bioequivalence, and relevant calculations; may use semi-log graph paper or software for computation.

Year 4: Second Semester (Semester 8)

Medicinal chemistry 2 (PHCH 407)

This course provides the students with thorough understanding of the medicinal chemistry and mode of action of drugs acting on the cardiovascular system and the CNS

Pharmacology 2 (PHARM 408)

Systemic pharmacology focuses on pharmacokinetic, pharmacodynamic principles, mechanism of action, adverse drug reactions and drug-drug interactions commonly seen in clinical pharmacy practice. The scope of coverage will be drugs used in the central nervous system (antipsychotic, antidepressants, anxiolytic, sedative and hypnotic agents, ADHD, Parkinsonism and other movement disorders, Alzheimer's disease, epilepsy, local and general anesthetics, drugs of abuse and opioid analgesics), drugs used in rheumatoid arthritis, drugs for gout, and dermatological agents.

Patient Care Skills 2 (CLPH 409)

This course is a continuation to what students have learned in Pharmaceutical Care 1. The patient-centered care learning experience will continue here with some important topics such as medication adherence, transition of care and medication reconciliation, medication errors and adverse drug reactions, drug/drug and drug/food interactions, Intravenous, prescription processing and health literacy. Also, in this course students are expected to learn about the role of pharmacist providing the care to special populations including geriatrics, pediatrics, pregnant women. Additionally, in this course student will learn about the medical literature evaluation and how apply it in the patient-centered care. Simulation pharmacy/clinic will be utilized during the practical sessions to promote hands on experience.

Pharmacotherapy 2 (CLPH 410)

The course focuses on renal, psychiatric, neurology, bone disorder, dermatology, and pain management. During the course the students will go over the clinical presentation and diagnosis of the disease followed by determining the desired therapeutic plan. Additionally, they will be indicating the appropriate management along with evaluating the therapeutic outcomes. Moreover, this course will explain the principles and the updated guidelines to treat the diseases mentioned above.

Patients Safety and Informatics (CLPH 411)

This course will provide comprehensive overview of the safety measures and tools in the hospitals also on the technology used in the hospital to improve the use of medications.

Clinical Pharmacokinetics (CLPH 412)

This course focuses on the basic principles of clinical pharmacokinetics for the purpose of optimizing drug therapy. Its emphasis on therapeutic drug monitoring of high-risk drugs e.g., aminoglycosides, vancomycin, voriconazole and posaconazole, methotrexate, digoxin, cyclosporine, tacrolimus and sirolimus, theophylline, phenytoin, carbamazepine, valproic acid, and lithium. Case studies of different patient populations with co-morbidities are utilized which enable the students to apply the clinical pharmacokinetic concepts in a practical context.

Computer-Aided Drug Design (PHCH 451)

This course provides the students with an introductory knowledge of computer-aided drug design, including structural modelling and molecular dynamics.

Cosmetic Formulations (PHCT 452)

This course provides an overview of the fundamentals of cosmetics. It covers the science and technology behind different cosmetical products for personal, skin, hair, and dental care. This course focus on principles of product development, selection of appropriate ingredients, and the formulation process for different cosmetic products. In addition to that, the course will also cover the role of active ingredients and nanotechnology in cosmetic formulations as well as introduction to the regulatory framework and safety considerations for cosmetic products.

Natural Cosmeceuticals (NATP 453)

This course explores the roles and applications of natural cosmeceuticals in pharmaceutical markets. During the course, students will gain an understanding of skin functions, types, and the difference between natural cosmeceutical products and cosmetic products, along with how cosmeceuticals can be commercialized and marketed. Students will learn about the important active ingredients in cosmeceutical products in this course. For instance, fruit acids, vitamins, antioxidants, growth factors, stem cells, peptides, amino acids, glycosaminoglycans, and other natural compounds from plants, animals, and microorganisms. The safety of essential oils and allergy concerns are discussed in addition to their applications in natural cosmeceuticals. Moreover, uses of natural cosmeceuticals in a variety of skin conditions, including acne and rosacea, daily skin repair, pigmentation, hair loss and others are also covered

Foundation of Clinical Trials (PHCY 454)

This course provides a thorough exploration of the field of clinical trials, which is a critical component of medical research supported by both government and private entities. Clinical trials are instrumental in providing definitive answers to significant clinical questions, especially pertaining to the efficiency and effectiveness of novel treatment approaches. Some clinical trials aim to generate hypotheses, while others serve as vital measures for verifying therapeutic outcomes.

The "Foundations of Clinical Trials" course provides a comprehensive overview of the ethical considerations, fundamental principles, and execution strategies related to conducting clinical trials in medical research. Emphasis is placed on protecting the welfare of participants through concepts like equipoise, informed consent, and intent-to-treat analysis. The course will explore different study designs including single-arm, crossover, factorial, sequential multi-stage, and dose-finding designs. Additionally, students will learn about systematic participant allocation methods such as randomization (including blocked or stratified approaches) and consideration of prognostic factors. Furthermore, the course will also cover data collection and analysis techniques, including the use of statistical measures to determine treatment efficacy and safety, including statistical methods for sample size determination, monitoring of adverse events, and endpoint analysis.

Drug Discovery (PHARM 455)

The goal of the course is to prepare students to contribute to the drug discovery process by providing them with a comprehensive understanding of the principles and practices involved in developing new drugs.

Year 4: Summer Training

Introductory Pharmacy Practice Experience 2 (CLPH 444)

Hospital pharmacy training is 5-week duration. It covers the Inpatient and Outpatient pharmacy (2 weeks each), inventory and narcotics, clinical services and intravenous admixing/compounding. (2 days each).

The main objective of course is to provide students with an opportunity to put into practice skills they have learned while in college. In addition, students will have an opportunity to enhance those skills, obtain the perspective of a work environment and benefit from a mentor or supervisor's experience and advice. The course includes the first interaction on full scale between students and the hospitals in order to see and practice (under preceptors' supervision) the real-life work of the hospital pharmacists.

Year 5: First Semester (Semester 9)

Medicinal Chemistry 3 (PHCH 501)

This course provides the students with thorough understanding of the medicinal chemistry and mode of action of GIT and antimicrobial drugs.

Pharmacology 3 (PHARM 502)

In this course, pharmacological aspects of drugs commonly used to treat bacterial, fungal, viral parasite infections in human will be discussed. Additionally, the course will cover drugs that widely used to treat GIT disorders.

Pharmacotherapy 3 (CLPH 503)

This 5-credit course will explain the role of clinical pharmacists in choosing the optimal antibacterial agents for different infectious diseases. The course will highlight the role of pharmacists in preventing antibiotic overprescribing to reduce antibiotic resistance. Moreover, this course will explain the principles and the updated guidelines to treat the most common infectious diseases such as: pneumonia, meningitis, tuberculosis, upper respiratory tract infections urinary tract infections, skin and soft tissue infection, osteomyelitis, etc. In addition, this course will cover HIV, Brucellosis and principles of critical care pharmacotherapy.

Patient care skills 3 (CLPH 504)

This course is designed to provide the students with the skills needed to identify medication–related problems and to provide medication therapy management services for diabetics, pulmonary disorders, psychiatric disorders, cancer, renal failure and gastrointestinal disorders, which will enable the students to understand his/her responsibilities as a pharmaceutical care practitioner and prepare them for advanced pharmacy practice experience (APPE). In addition, this course will also provide students with skills needed to rationalize the use of vaccines for preventable bacterial and viral diseases alongside considering the vaccine safety.

Industrial pharmacy (PHCT 505)

This course offers a comprehensive understanding of the pharmaceutical industry, focusing on unit operations, manufacturing processes, quality control, quality assurance, and regulatory compliance. Students will learn about various stages of manufacturing process, manufacturing techniques, quality control, packaging, labeling, and regulatory guidelines.

Pharmaceutical economics and policy (PHCY 506)

The course is to introduce students to Pharmacoeconomics (PE), PE research and its application in pharmacy practice. This course is an introduction to the role of Pharmacoeconomics (PE) in medical decision making from multiple perspectives. It will introduce the concepts of types of PE/Cost effectiveness analysis (CEA), general computation involved in these analyses, and how to evaluate a CEA. This course also will introduce students to the concept of pharmaceutical policies such as those implemented by government (I.e., government plays a role in health and in the provision of medications) or by private bodies. This course will teach the students the different pharmaceutical policies that are used for reducing pharmaceutical expenditure and the medications prices from economic preceptive. Furthermore, this course provides a framework for understanding the economic dimensions of pharmaceutical policy and the different models used. Students will learn to think systematically about the

issues including pharmaceutical spending, medication prices and what pharmaceutical policies they should use based on the current challenge.

Graduation project (PHCY 507)

This is a practical course that will allow students to work on a real world problem. It is typically a team work with up to two (2) members. The aim is to help students to select related project topics and get the project completed efficiently, through guiding them in searching reliable literature, preparing and presenting results, and writing the reports.

Pharmacy Management and Leadership (MGMT 508)

This course thoroughly explores the dynamic field of pharmacy management and leadership. Topics cover the foundational principles of effective pharmacy management and the complexities of organizational structures and financial acumen. Students will develop competencies in crafting and executing strategic and business plans, optimizing pharmacy operations, and cultivating effective leadership styles and team dynamics. The course emphasizes acquiring critical networking and communication skills, adaptability within the healthcare sector, and commitment to patient-centered care and quality improvement.

Social and Behavioral Pharmacy (PHCY 551)

This course will provide comprehensive overview of the psychosocial aspects of medication use by the patients. Also, this course focuses on management principles such as planning, organizing, directing, and controlling pharmacy resources applied to various pharmacy practice settings and patient outcomes.

Poisonous and Abused Natural Products (NAPT 552)

This course covers the most important poisonous and psychoactive organisms and compounds that are associated with significant risk. Throughout the course, students will learn important information regarding poisonous and abused natural products. The course teaches students how to identify numerous hazardous plants' toxicities, clinical symptoms, and toxicity management. In addition, toxicity conditions of different organisms and creatures such as algae, lichens, fungi, and mushrooms are also discussed along with their toxicity signs and treatment strategies. Chemical analysis and biological properties of natural substance of abuse is also an integral part of this course.

Pharmaceutical Quality Control (PHCT 553)

The course "Pharmaceutical Quality Control" provides students with a comprehensive understanding of quality control in the pharmaceutical industry. Students will learn about quality management systems, good manufacturing practices (GMP), and the principles of quality standards, regulations, and guidelines. Topics include raw material sampling, auditing, specifications, test methods, reference standard materials, validation, instrument qualification, calibration, analytical method development, drug stability, and stability-indicating methods. Through this course, students will gain practical skills to apply quality control concepts in real-world scenarios, ensuring safe and effective drug therapy.

Precision Medicine (MED 554)

The course focuses on instilling an understanding of the core principles of pharmacogenetics and pharmacogenomics and the impact precision medicine will have on improving clinical outcomes.
The main objective of course is to enable the student to understand the and interpret how variability in genomic and genetic data may be expressed in disease phenotypes and the subsequent implications that enable the development of targeted therapies and/or empowering individualized therapies.

Good Manufacturing Practice (PHCT 555)

This course provides students with a comprehensive understanding of the principles, regulations, and practices essential for ensuring the quality, safety, and efficacy of pharmaceutical products. GMP is the foundation of pharmaceutical manufacturing, emphasizing stringent quality control standards and compliance with regulatory requirements.

Year 5: Second Semester (Semester 10)

Pharmacotherapy 4 (CLPH 510)

This course will explain the principles and the updated guidelines to manage immunological disorders, solid organ transplant, critical care, and oncology. During the course the students will go over the clinical presentation and diagnosis of the disease followed by determining the desired therapeutic plan. Additionally, they will be indicating the appropriate management along with evaluating the therapeutic outcomes. Moreover, this course will explain the principles and the updated guidelines to treat the diseases mentioned above.

Medicinal Chemistry 4 (PHCH 511)

This course provides the students with a thorough understanding of the medicinal chemistry and mode of action of anticancer and immunosuppressant drugs.

Pharmacology 4 (PHARM 512)

This course discusses the pharmacodynamic (MOA) information and major pharmacokinetic (ADME) aspects of drugs to predict their therapeutic usage, adverse effects and interactions with herbs/food/other drugs to better justify their prescription in patient population. The scope of coverage would be immunosuppressant drugs and drugs used in the treatment of cancer, including chemotherapy, targeted therapies, hormonal therapies, and immunotherapies.

Advance patient care (CLPH 513)

This course introduces students to the importance of interprofessional relationships and the importance of pharmacists within the multidisciplinary team. Furthermore, ten comprehensive case studies will be included in this course of which the students are given the chance to apply the knowledge and skills in different case scenarios and settings. The cases will give the students the chance to apply pharmaceutical care to different patient populations including Cardiovascular, endocrine, Infectious disease and renal disease patients.

Clinical Toxicology (PHTX 514)

The course provides the fundamental concepts of toxicology as they relate to specific organs & body systems. The toxic effects of major therapeutic drug classes and common toxicants are discussed, with special focus on learning the general and specific clinical approaches used to manage cases of drug overdose & poisoning.

Pharmaceutical Marketing and Business (BUS 515)

This course provides an overview of the marketing and business principles and processes in the pharmaceutical industry. Students will explore the various aspects of pharmaceutical marketing, including the industry environment, product development, pricing strategies, supply chain management, and promotional activities. Students will also examine the role of Medical Affairs and Regulatory Affairs in the pharmaceutical industry and how these functions impact marketing strategies. Additionally, the course will cover the new four Ps of pharmaceutical marketing, which include patient engagement, predictive analytics, personalization, and precision. The course will incorporate case studies and real-world examples to help students understand the practical applications of pharmaceutical marketing strategies. By the end of the course, students will have a solid understanding of pharmaceutical marketing and be able to analyze business cases within the industry.

Total parenteral nutrition (TPN) (CLPH 516)

This course typically explores parenteral nutrition principles, formulations, and administration of parenteral nutrition to patients who cannot receive adequate nutrition through oral or enteral routes. Students learn about various components of TPN solutions, including macronutrients, micronutrients, and electrolytes. Emphasis is placed on calculating appropriate dosages, adjusting TPN regimens based on

clinical conditions, and preventing complications. This course will also cover facilities required for admixing of TPN, drug-nutrient interactions, compatibility, and stability of TPN formulations.

Year 6: internship year

The 11-month training course with 11 rotations is an experiential learning that integrates knowledge learned in the classroom with practical application and development of skills in professional settings. It focuses on pharmaceutical care (medication therapy management) for patients mainly in hospitals. Students will learn how to provide advanced clinical pharmacy services in various medical specialty environments under the direct supervision of clinical preceptors. They will gain some experiences in professional judgments, accountability and the following clinical skills:

- Professional communication with patients and healthcare providers, while working in pharmacies as well as in the clinical departments
- Patient care including therapeutic decision making by selecting appropriate drug therapy and monitoring the therapy. Students will be actively involved in the management of diseases, patients' monitoring, care planning and follow-up, patients chart review including the patients' lab data, medication history, drug information and discharge medication counselling.

Organizational and professional skills required to work in community as well as institutional pharmacy settings.

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