Bachelor of Pharmacy
Program Specification
University of Science and Technology

Republic of Yemen

University of Science and Technology

Deanship of Development and Quality Assurance

الجمهورية اليمنية

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عمادة التطوير وضمان الجودة

Introduction:

The Bachelor of Pharmacy program is one of the pioneering programs in the College of Pharmacy at the University of Science and Technology, which was opened in 1996. It is a five-year university program that aims primarily to provide education and training in pharmacy that is academically challenging and professionally relevant, both theoretically and practically, so that Students gain up-to-date knowledge and understanding and develop their minds to be able to appreciate and apply the acquired knowledge, skills and technology primarily for the benefit of their community and their profession by providing evidence-based advice to patients and the public on public health problems. Graduates will have a strong academic foundation and will be competent pharmacists and well prepared for their roles in healthcare. This program is designed to prepare students for graduate studies and continuing professional education. The program was developed in the first cycle, which was in 2012, and this is the second development cycle in 2017, when the Doctor of Pharmacy program was separated from the Bachelor of Pharmacy program based on the recommendations of the Higher Education Committee.

Program Identification and General Information:

1	**Program title: Bachelor of Pharmacy**
2	**Program Type: Single Program (√) Joint Program ( ) Multidisciplinary Program ( )**
3	**Number of years needed for completion of the program: Five Years**
4	**Total credit hours needed for completion of the program: 163 credit hours**
5	**Teaching Language : English**
6	**Study System : Semester - Based**
6	**Award granted on completion of the program: Bachelor of Pharmacy**
7	**Name of the university which provide the Award: University of Science and Technology**
8	**Name of the faculty which own the program and provide the Award: Faculty of Pharmacy**
9	**Department which own the program: NA**
10	**Name of the faculty which participates in teaching some of the program courses:** **Faculty of Medicine and Health Sciences, Faculty of Humanities and Social Sciences, Faculty of Administrative Sciences**
11	**Date of program development: 2017**
12	**Program Coordinator: Dr: Sama Zaid Alaghbari**
13	**External Reviewer\ External Reviewers:**
14	**Date of Program Approval from the university and the MoHE: 2017**

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University Vision, Mission and Goals:

University Vision:

To become one of the leading and distinguished universities regionally and intentionally

University Mission:

The University of Science and Technology strives to provide an excellent education service, enhancing student knowledge and skills that meet the requirements of the labor market, contributing to community development by providing training, advisory, and research services and the continuing education programs through competent administrative and academic staff, stimulating learning environment, and cutting-edge programs. The University shall expand local, regional, and international partnerships according to the comprehensive quality systems, transparency, and the professional ethics.

University Goals:

1. Enhance student knowledge and skills in various academic disciplines.
2. Contribute to support efforts of practical and scientific research in all different areas.
3. Link the learning outcomes with the requirements of the labor market to ensure the graduates are employable
4. Provide the necessary infrastructure to support the learning process and students' services and activities.
5. Provide opportunities of separate education for male and female students.
6. -Expand the partnerships and develop the relationships with other peers and institutions of scientific research domestically، regionally، and internationally.
7. Enhance the role of the university in the community services by providing training and consulting programs in various aspects of development.

Faculty Vision, Mission and Goals:

Faculty Vision:

To be pioneers in pharmacy education and pharmaceutical research regionally and internationally.

Faculty Mission:

Faculty of Pharmacy at the University of Science and Technology(UST) strives to provide distinct educational services and furnish students with knowledge and skills in the pharmaceutical and research fields that cater the needs of the community and labor market and contribute to the community development. This is achieved through providing conducive learning and research environment, competent staff, and cutting-edge curriculum and laboratories while adhering to profession ethics and total quality standards.

Faculty Goals:

- To graduate distinct qualified and proficient pharmacists according to regional and international professional academic standards to meet the requirements of development and labor market.
- To promote scientific research in the pharmaceutical fields.
- To promote the role of the university in community service by providing training and

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consulting programs in the pharmaceutical fields.

Program Mission and Goals

■ Program Mission

To prepare scientifically and practically qualified pharmacists, equipped with the knowledge and skills necessary to conduct practical research, practice pharmacy efficiently and effectively, and provide pharmaceutical services that meet the needs of the local and regional community, through highly qualified academic expertise, advanced curricula, and a supportive learning environment, and strategic partnerships and agreements with key stakeholders by established standards of quality, accreditation, and professional and ethical behaviour.

■ Program Goals

• Provide students with the knowledge and skills in pharmaceutical sciences and related sciences.
• Train graduates to practice professional and personal skills in pharmacy as well as community service .
• Equip graduates with research and independent learning including skills to evaluate related research papers with recent scientific finding.
• Prepare students to work in various fields of pharmacy, including pharmacies, hospitals, laboratories, industry, and research.

Program Standards:

This section introduces academic standards , benchmarks and other references which include labor market needs and academic staff . These references are as follows:

▪ Academic Standards:

The academic standards offered by the Canadian Council for Accreditation of Pharmacy Programs (CCAPP) were adopted in the developed program.

The Canadian Council for Accreditation of Pharmacy Programs (CCAPP) – (Annex 1)
Professional Competencies for Canadian Pharmacists at Entry to Practice (NAPRA) – (Annex 2)
AFPC Educational Outcomes for Entry-to-Practice Pharmacy Programs – (Annex 3)

▪ Benchmarks:

This program has been developed in accordance to four similar programs (regional and international) accredited by CCAPP and according to the following annexes:
(Annex 4) similar programs names and information.
(Annex 5) Survey of Intended Learning Outcomes for Similar Accredited Programs at International Universities.
(Annex 6) Survey of credit hours for programs similar to the current program.
(Annex 7) Survey of courses for Similar Accredited Programs at International Universities.

▪ Academic Staff:

(Annex 8) Academic Staff Names (Academic development committee) and other staff involved in PSD development process.

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A. Knowledge and Understanding

Program Outcomes	Teaching& Learning Methods	Assessment Methods
Biomedical Sciences: A1.　Define the fundamentals of the biomedical sciences including structure of the body, normal and abnormal body function, basis of genomes and different biochemical pathways and their relations with different diseases**.** *Pharmaceutical Sciences:* A2.　List the sources, purification methods, physico-chemical properties, molecular structure and design of substances used in medicine, including biotechnology products. A3.　Recall the properties of formulations additives, principles of medicines formulation and manufacturing techniques, and pharmaceutical analytical methods. A4.　Identify the actions of medicines within living systems; pharmacokinetics and pharmacodynamics of drugs, therapeutic uses of medicines in humans, adverse reactions, interactions of medicines, and their significance in treatment. A5.　Relate the etiology, epidemiology, laboratory diagnosis and clinical features of different diseases and their pharmacotherapeutic approaches. *The behavioral, social, and administrative pharmacy sciences* A6.　Review the fundamentals of social and behavioral sciences relevant to pharmacy, ethics of health care, health care systems, health policy and economics, pharmacy law, and causes and prevention of medical errors. *Clinical Sciences and Practice Skills* 　A7.　State the pharmacist's role in health care; managing medicines: responding to symptoms, non-prescription drug use, compounding, dispensing, provision of medicine and patient information,	The methodologies and teaching and learning strategies that can be used: 1-Lectures 2-practical sessions 3-case studies 4-Tutorials 5-Seminars 6-assignments 7-small group training	The assessment methods that can be used**:** **1 -**laboratory reports evaluation **2** - seminars evaluation **3** - group work **4** - problem-solving exercises**.** **5**- written **6**- assignments written examinations.

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documentation, reporting of adverse reactions of medicines, drug information, and drug abuse.		

B. Intellectual Skills

Program Outcomes	Teaching& Learning Methods	Assessment Methods
B1. Integrate the relevant knowledge and understanding required to meet the needs of patients and other health care professionals B2. Propose medicine doses, dosage regimens related to normal and abnormal situations. B3. Interpret prescription, medication orders, pharmaceutical information, clinical data, including patient records held within practice settings. B4. Select the appropriate methods of isolation, synthesis, purification, identification, standardization, and formulation of active substances from different origins.	The methodologies and teaching and learning strategies that can be used: 1-- Lectures 2-- critical analysis 3-- case studies 4-- problem solving 5-- clinical decision-making skills through group. 6- Assignments.	The assessment methods that can be used: 1--Written and practical examinations 2- class tests 3- coursework including presentations 4- problem-solving exercises 5- laboratory and project work 6- scientific log books and reports from practical sessions ، 7-Assignments evaluation.

C. Professional and Practical Skills

Program Outcomes	Teaching& Learning Methods	Assessment Methods
C1. Handle the chemical, biological, and pharmaceutical materials safely, taking into account their physical and chemical properties, including proper operation of pharmaceutical instruments. C2. Execute the planning, design and carrying out of pharmaceutical research investigations, from the problem-recognition stage through to the evaluation and appraisal of results and findings. C3. Employ the relevant way of analysis, preparation, determination of quality, and presentation of medicines, by manufacture and extemporaneous dispensing. C4. Advise the patient and health care professionals on the safe and effective use of	The methodologies and teaching and learning strategies that can be used: 1--practical and laboratory skills. 2--consolidated on the field training and culminate 3--graduation project. 4--Clinical and drug consulting skills 5- case-based learning. 6-community and hospital pharmacy training. Pharmaceutical industry	The assessment methods that can be used: 1--Assessment Evaluation 2--professional and practical skills and attributes by both formative and summative assessment in laboratory classes 3- laboratory reports 4--problem-solving exercises 5--Written examinations .

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medicines.	training . 7- practical computer skills	6- Preparing proposals; seminars; and the project.

D. General Skills

Program Outcomes	Teaching& Learning Methods	Assessment Methods
D1. Interact effectively with patients, the public and health care professionals; including both written and oral communications. Taking into account the ability to demonstrate sensitivity, respect, and empathy while communicating with diverse groups or individuals.	The methodologies and teaching and learning strategies that can be used: 1-practice based activities. 2- laboratory work and reports. 3- oral presentations, projects 4- field training 5- critical reading 6- small group discussions. 7- seminars 8- Computer skills	The assessment methods that can be used: 1 -written examinations. 2- reports evaluation
D2. Retrieve information in relation to primary and secondary information sources, including information retrieval through online computer searches with the ability to analyze the published literature.		
D3. Adopt ethical, legal and safety guidelines while maintaining the code of practice.		
D4. Develop financial, teamwork, management, decision-making, time management, organization, sales and marketing skills		

Mapping PILO's with the benchmarks

	PILOs	Standards and Benchmarks
Knowledge & Understanding	A1	CCAPP, QAA
	A2	CCAPP, QAA
	A3	CCAPP, QAA
	A4	CCAPP, QAA
	A5	CCAPP, QAA, NAPRA
	A6	CCAPP, QAA, NAPRA
	A7	CCAPP, QAA, NAPRA
Intellectual Skills	B1	CCAPP, QAA, NAPRA
	B2	CCAPP, QAA, NAPRA
	B3	CCAPP, QAA, NAPRA

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	B4	CCAPP, QAA
Professional and Practical Skills	C1	CCAPP, QAA, NAPRA
	C2	CCAPP, QAA, NAPRA
	C3	CCAPP, QAA, NAPRA
	C4	CCAPP, QAA, NAPRA
General Skills	D1	CCAPP, QAA, NAPRA
	D2	CCAPP, QAA, NAPRA
	D3	CCAPP, QAA, NAPRA
	D4	CCAPP, QAA, NAPRA

Intended Learning Outcomes Mapping:

To ensure a comprehensive balanced distribution of courses to cover all main themes, several comparisons were undertaken:

Annex (9): Main Themes/Sub-Themes with Relative weight for Program.

Annex (10): PILOs Distribution to General Themes for Program.

Annex (11): Course Titles and P- ILOs Distribution to General Themes for Program.

Annex (12): Matrix of mapping program P- ILO's with courses.

Annex (13): Study plan for the program.

Program Structure / Plan

Duration of the program: Five Years

Total credit hours: 163

Program delivery mode: In person (on campus)

Study Plan Framework

Requirements		Credit Hours
1. University Requirements		25
2. Faculty requirements	Compulsory	40
	Elective	
3. Program requirements	Compulsory	98
	Elective	-
Total of Credit Hours		**163**

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1. University Requirements (25 credit hours)

	Course Title	Code/ NO.	Credit Hours Th.	Credit Hours Tut.	Credit Hours Pr.	Total C.H.	Pre-Requisites
	Courses Of University Requirements						
1	Skills of Holy Quran Recitation &Tajweed	BUST01	-	-	1	1	-
2	English Language I	BUST02	-	-	4	4	-
3	Arabic Language	BUST03	2	-	2	4	-
4	Leadership Skills Development	BUST04	1	-	-	1	-
5	Islamic Culture	BUST05	4	-	-	4	-
6	English Language II	BUST06	-	-	4	4	-
7	Communications Skills	BUST07	1	-	-	1	-
8	Critical Thinking	BUST08	1	-	-	1	-
9	Computer Skills	BUST09	-	-	3	3	-
10	Research Methodology	BUST10	2	-	-	2	-
	Total of Credit Hours		**11**	**-**	**14**	**25**	

2. Faculty Requirements (40 credit hours)

No.	Course Name	Code	عدد الساعات L	T	P	C	Pre-request	co-request
	Faculty Compulsory Courses							
1	Biology I	PHF 110	2	-	1	3	-	-
2	Mathematics	PHF 111	2	1	-	3	-	-
3	Biology II	PHF 121	2	-	1	3	-	-
4	Biochemistry I	PHF 212	2	-	1	3	-	-
5	Biochemistry II	PHF 222	2	-	1	3	PHF212	-
6	Physiology I	PHF 211	2	-	-	2	PHF110	-
7	Physiology II	PHF 221	2	-	1	3	PHF211	-
8	Anatomy	PHF 213	2	-	1	3	-	-
9	Microbiology and Immunology	PHF 314	2	-	1	3	PHF110	-
10	Pathology	PHF 315	2	-	-	2	PHF221	-
11	Nutrition	PHF 326	2	-	-	2	PHF315	-
12	Pharmaceutical Microbiology	PHF 324	2	-	1	3	PHF314	-
13	Pathophysiology I	PHF 325	2	-	-	2	PHF315	-
14	Pathophysiology II	PHF 413	2	-	-	2	PHF325	-
15	Public Health	PHF 416	1	-	-	1	-	-
16	Biostatistics	PHF 511	2	-	-	2	BUST10	-
	Total of Credit Hours		**31**	**1**	**8**	**40**	المجموع	

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3. Department(section) Requirements (72 credit hours)

3.1 Core Courses (72 credit hours)

No.	Course Name	Code	عدد الساعات				Pre-request	co-request
			L	T	P	C		
1	General Chemistry I	PHS 112	2	-	1	3	-	-
2	General Chemistry II	PHS 120	2	-	1	3	PHS112	-
3	Organic Chemistry I	PHS 210	2	-	1	3	PHF120	-
4	Pharmacognosy I	PHS 214	2	-	1	3	PHF121	-
5	Professional Skills I	PHS 215	1	-	-	1	-	-
6	Organic Chemistry II	PHS 220	2	-	1	3	PHS210	-
7	Analytical Chemistry	PHS 223	2	-	1	3	PHS120	-
8	Pharmacognosy II	PHS 224	1	-	1	2	PHS214	-
9	Physical Pharmacy	PHS 225	2	-	1	3	PHS120	-
10	Professional Skills II	PHS 226	1	-	-	1	PHS215	-
11	Pharmacology I	PHS 310	2	-	-	2	PHF213,PHF221	PHF315
12	Pharmaceutical Technology I	PHS 311	2	-	1	3	PHS120	-
13	Pharmaceutical Chemistry I	PHS 312	2	-	-	2	PHS220	-
14	Phytochemistry I	PHS 313	2	-	-	2	PHS224	-
15	Instrumental Analysis	PHS 316	2	-	1	3	PHS223	-
16	Professional Skills III	PHS 317	1	-	-	1	PHS226	-
17	Pharmacology II	PHS 320	3	-	-	3	PHS310	-
18	Pharmaceutical Technology II	PHS 321	2	-	1	3	PHS311	-
19	Pharmaceutical Chemistry II	PHS 322	2	-	-	2	PHS312	-
20	Phytochemistry II	PHS 323	2	-	1	3	PHS313	-
21	Professional Skills IV	PHS 327	1	-	-	1	BUST07	-
22	Pharmacology III	PHS 410	2	-	1	3	PHS320	-
23	Pharmaceutical Chemistry III	PHS 412	2	-	1	3	PHS321	-
24	Biopharmaceutics	PHS 415	2	-	-	2	PHS225	-
25	Pharmacology IV	PHS 420	2	-	-	2	-	-
26	Pharmacokinetics	PHS 423	2	-	-	2	PHS415	-
27	Toxicology	PHS 424	2	-	-	2	PHS410	-
28	Pharmacy Management	PHS 512	1	-	-	1	PHP426	-
29	Pharmacy Law & Ethics	PHS 513	1	-	-	1	PHS327	-
30	Pharmaceutical Biotechnology	PHS 514	2	-	-	2	PHF314	-
31	Pharmaceutical Marketing	PHS 520	2	-	-	2	PHS513,PHS512	-
32	Complementary and Alternative Medicine	PHS 521	1	-	-	1	PHS224	-
33	Pharmacoepidemology and Pharmacoeconomics	PHS 523	1	-	-	1	PHS410	-
	Total of Credit Hours		**58**		**14**	**72**	المجموع	

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4. Program Requirements (26 credit hours)

4.1 Core Courses (26 credit hours)

No.	Course Name	Code	عدد الساعات				Pre-request	co-request
			L	T	P	C		
1	Pharmaceutical Technology III	PHB 411	2	-	1	3	PHS321	-
2	Therapeutics I	PHB 414	2	-	-	2	PHS320,PHF325	-
3	Professional Skills V	PHB 417	1	-	-	1	PHS327	-
4	Pharmaceutical Technology IV	PHB 421	2	-	-	2	-	-
5	Therapeutics II	PHB 422	2	-	-	2	PHP414	-
6	Structured Practical Experiential Program I	PHB 425	-	-	2	2	PHS320	-
7	Professional Skills VI	PHB 426	1	-	-	1	PHP417	-
8	Drug delivery Systems	PHB 510	2	-	-	2	PHP411	-
9	Applied Pharmacognosy	PHB 515	2	-	-	2	-	-
10	Structured Practical Experiential Program II	PHB 516	-	-	2	2	PHP411	-
11	Seminars in Pharmaceutical Sciences	PHB 522	2	-	-	2	-	-
12	OTC drugs	PHB 524	1	-	-	1	-	-
13	Graduation Project	PHB 525	-	-	2	2	PHF511,BUST10	-
14	Structured Practical Experiential Program III	PHB 526	-	-	2	2	PHS320	-
	Total of Credit Hours		**17**		**9**	**26**	المجموع	

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Study Plan

First Year : First Semester

	Course Name	Code	عدد الساعات				اسم المقرر	Pre-request	co-request
			L	P	T	C			
1	Islamic Culture	BUST 05	4	-	-	4	الثقافة الاسلامية	-	-
2	English Language I	BUST 02	-	8	-	4	اللغة الانجليزية 1	-	-
3	Communication skills	BUST 07	1	-	-	1	مهارات الاتصال	-	-
4	Biology I	PHF 110	2	2	-	3	الاحياء العامة 1	-	-
5	Mathematics	PHF 111	2	-	2	3	الرياضيات	-	-
6	General Chemistry I	PHS 112	2	2	-	3	الكيمياء العامة 1	-	-
	Total		**14**	**10**	**2**	**18**	**المجموع**		

First Year : second Semester

	Course Name	Code	عدد الساعات				اسم المقرر	Pre-request	co-request
			L	P	T	C			
1	Skills of Quraan Recitation and Tajweed	BUST 01	-	2	-	1	مهارات تلاوة القران الكريم وتجويده	-	-
2	Arabic Language	BUST 03	2	4	-	4	اللغة العربية	-	-
3	English Language II	BUST 06	-	8	-	4	اللغة الانجليزية 2	-	-
4	Critical Thinking	BUST 08	1	-	-	1	التفكير الناقد	-	-
5	Computer skills	BUST 09	-	6	-	3	مهارات الحاسوب	-	-
6	General Chemistry II	PHS 120	2	2	-	3	الكيمياء العامة 2	PHS112	-
7	Biology II	PHF 121	2	2	-	3	علم الاحياء 2	-	-
	Total		**7**	**24**	**-**	**19**	**المجموع**		

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second Year : First Semester								
Course Name	**Code**	عدد الساعات				**اسم المقرر**	**Pre-request**	**co-request**
		L	**P**	**T**	**C**			
1	Organic Chemistry I	PHS 210	2	2	-	3	الكيمياء العضوية 1	PHS120	-
2	Physiology I	PHF 211	2	-	-	2	علم وظائف الاعضاء 1	PHF110	-
3	Biochemistry I	PHF 212	2	2	-	3	الكيمياء الحيوية 1	-	-
4	Anatomy	PHF 213	2	2	-	3	علم التشريح	-	-
5	Pharmacognosy I	PHS 214	2	2	-	3	علم العقاقير 1	PHF121	-
7	Professional Skills I	PHS 215	1	-	-	1	المهارات المهنية 1	-	-
8	Leadership Skills Development	BUST 04	1	-	-	1	تنمية المهارات القيادية	-	-
	Total		**12**	**8**	**-**	**16**	**المجموع**		

second Year : second Semester								
Course Name	**Code**	عدد الساعات				**اسم المقرر**	**Pre-request**	**co-request**
		L	**P**	**T**	**C**			
1	Organic Chemistry II	PHS 220	2	2	-	3	الكيمياء العضوية 2	PHS210	-
2	Physiology II	PHF 221	2	2	-	3	علم وظائف الاعضاء 2	PHF211	-
3	Biochemistry II	PHF 222	2	2	-	3	الكيمياء الحيوية 2	PHF212	-
4	Analytical Chemistry	PHS 223	2	2	-	3	الكيمياء التحليلية	PHS120	-
5	Pharmacognosy II	PHS 224	1	2	-	2	علم العقاقير 2	PHS214	-
6	Physical Pharmacy	PHS 225	2	2	-	3	الصيدلية الفيزيائية	PHS120	-
7	Professional Skills II	PHS 226	1	-	-	1	المهارات المهنية 2	PHS215	-
	Total		**12**	**12**	**-**	**18**	**المجموع**		

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Third Year : First Semester

	Course Name	Code	L	P	T	C	اسم المقرر	Pre-request	co-request
			عدد الساعات						
1	Pharmacology I	PHS 310	2	-	-	2	علم الادوية 1	PHF213,PHF221	PHF315
2	Pharmaceutical Technology 1	PHS 311	2	2	-	3	التقنية الصيدلانية 1	PHS120	-
3	Pharmaceutical Chemistry I	PHS 312	2	-	-	2	الكيمياء الصيدلانية 1	PHS220	-
4	Photochemistry I	PHS 313	2	-	-	2	كيمياء العقاقير 1	PHS224	-
5	Microbiology and Immunology	PHF 314	2	2	-	3	علوم الاحياء الدقيقة والمناعة	PHF110	-
6	Pathology	PHF 315	2	-	-	2	علم الامراض	PHF221	-
7	Instrumental Analysis	PHS 316	2	2	-	3	التحليل الالي	PHS223	-
8	Professional Skills III	PHS 317	1	-	-	1	المهارات المهنية 3	PHS226	-
	Total		**15**	**6**	**-**	**18**	المجموع		

Third Year : second Semester

	Course Name	Code	L	P	T	C	اسم المقرر	Pre-request	co-request
			عدد الساعات						
1	Pharmacology II	PHS 320	3	-	-	3	علم الادوية 2	PHS310	-
2	Pharmaceutical Technology II	PHS 321	2	2	-	3	التقنية الصيدلانية 2	PHS311	-
3	Pharmaceutical Chemistry II	PHS 322	2	-	-	2	الكيمياء الصيدلانية 2	PHS312	-
4	Phytochemistry II	PHS 323	2	2	-	3	كيمياء العقاقير 2	PHS313	-
5	Pharmaceutical Microbiology	PHF 324	2	2	-	3	علم الاحياء الدقيقة الصيدلاني	PHF314	-
6	Pathophysiology I	PHF 325	2	-	-	2	علم وظائف الاعضاء المرضي 1	PHF315	-
7	Nutrition	PHF 326	2	-	-	2	التغذية	PHF222	-
8	Professional Skills IV	PHS 327	1	-	-	1	المهارات المهنية 4	BUST07	-
	Total		**16**	**6**	**-**	**19**	المجموع		

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Fourth Year : First Semester

	Course Name	Code	عدد الساعات				اسم المقرر	Pre-request	co-request
			L	P	T	C			
1	Pharmacology III	PHS 410	2	2	-	3	علم الادوية 3	PHS320	-
2	Pharmaceutical Technology III	PHB 411	2	2	-	3	التقنية الصيدلانية 3	PHS321	-
3	Pharmaceutical Chemistry III	PHS 412	2	2	-	3	الكيمياء الصيدلانية 3	PHS322	-
4	Pathophysiology II	PHF 413	2	-	-	2	علم وظائف الاعضاء المرضي 2	PHF325	-
5	Therapeutics I	PHB 414	2	-	-	2	علم المداواه 1	PHS320,PHF325	-
6	Biopharmaceutics	PHS 415	2	-	-	2	الصيدلانيات الحيوية	PHS225	-
7	Public Health	PHF 416	1	-	-	1	الصحة العامة	-	-
8	Professional Skills V	PHB 417	1	-	-	1	المهارات المهنية 5	PHS327	-
	Total		**14**	**6**	**-**	**17**	المجموع		

Fourth Year : second Semester

	Course Name	Code	عدد الساعات				اسم المقرر	Pre-request	co-request
			L	P	T	C			
1	Research Methodology	BUST 10	2	-	-	2	مناهج البحث العلمي	-	-
2	Pharmacology IV	PHS 420	2	-	-	2	علم الادوية 4	-	-
3	Pharmaceutical Technology IV	PHB 421	2	-	-	2	التقنية الصيدلانية 4	-	-
4	Therapeutics II	PHB 422	2	-	-	2	علم المداواه 2	PHP414	-
5	Pharmacokinetics	PHS 423	2	-	-	2	علم حرائك الادوية	PHS415	-
6	Toxicology	PHS 424	2		-	2	علم السموم	PHS410	-
7	Structured Practical Experiential Program I	PHB 425	-	2	-	2	برنامج التدريب التجريبي المهيكل 1	PHS320	-
8	Professional Skills VI	PHB 426	1	-	-	1	المهارات المهنية 6	PHP417	-
	Total		**13**	**2**	**-**	**15**	المجموع		

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عمادة التطوير وضمان الجودة

Fifth Year : First Semester								
	Course Name	**Code**	عدد الساعات				**اسم المقرر**	**Pre-request**	**co-request**
			L	**P**	**T**	**C**			
1	Drug Delivery Systems	PHB 510	2	-	-	2	أنظمة إيصال الدواء	PHP411	-
2	Biostatistics	PHF 511	2	-	-	2	الإحصاء الحيوي	BUST10	-
3	Pharmacy Management	PHS 512	1			1	الإدارة الصيدلية	PHP426	-
4	Pharmacy Law & Ethics	PHS 513	1	-	-	1	قوانين وأخلاقيات الصيدلة	PHS327	-
5	Pharmaceutical Biotechnology	PHS 514	2	-	-	2	التقنية الحيوية الصيدلانية	PHF314	-
6	Applied Pharmacognosy	PHB 515	2	-	-	2	علم العقاقير التطبيقي	-	-
7	Structured Practical Experiential Program II	PHB 516	-	2	-	2	برنامج التدريب التجريبي المهيكل 2	PHP411	-
	Total		**10**	**2**	**-**	**12**	المجموع		

Fifth Year : second Semester								
	Course Name	**Code**	عدد الساعات				**اسم المقرر**	**Pre-request**	**co-request**
			L	**P**	**T**	**C**			
1	Pharmaceutical Marketing	PHS520	2	-	-	2	التسويق الصيدلاني	PHS513, PHS512	-
2	Complementary and Alternative Medicine	PHS 521	1	-	-	1	الطب المكمل والبديل	PHS224	-
3	Seminars in Pharmaceutical Sciences	PHB 522	2	-	-	2	حلقات دراسية في العلوم الصيدلانية	-	-
4	Pharmacoepidemology and Pharmacoeconomics	PHS 523	1	-	-	1	علوم إنتشار إستخدام الادوية والإقتصاد الصيدلي	PHS410	-
5	OTC drugs	PHB 524	1	-	-	1	الادوية بدون وصفة طبية	-	-
6	Graduation Project	PHB 525	-	2	-	2	مشروع التخرج	BUST10, PHF511	-
7	Structured Practical Experiential Program III	PHB 526	-	2	-	2	برنامج التدريب التجريبي المهيكل 3	PHS320	-
	Total		**7**	**4**	**-**	**11**	المجموع		

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Total Credit Hours Distribution:

Level	Semester	University requirements	Faculty requirements	Program requirements	Elective courses	Practical training	Total C.H
First	S1	9	9	-	-	-	18
First	S2	13	6	-	-	-	19
Second	S1	1	11	4	-	-	16
Second	S2	-	9	9	-	-	18
Third	S1	-	5	13	-	-	18
Third	S2	-	-	19	-	-	19
Fourth	S1	-	-	17	-	-	17
Fourth	S2	2	-	11	-	2	15
Fifth	S1	-	-	10	-	2	12
Fifth	S2	-	-	9	-	2	11
Total of Credit Hours		25	40	92	-	6	163
%		15	25	56	-	4	100

Admission Requirements for the Program:

- Secondary School Certificate (Scientific Track) or an equivalent certificate from Yemen or other countries with not less than the minimum score determined by the Ministry of Higher Education.
- Fulfilling the university and the Ministry of Higher Education requirements.

Teaching and Learning resources for the program:

- Lectures and seminars are conducted in modern audio-visually equipped lecture classrooms.
- Practical sessions are conducted in newly refurbished laboratories equipped with a range of pharmaceutical and analytical instruments.
- Teaching and organizational materials are communicated via hard copies and an electronic learning environment.
- Computer labs are equipped with adequate number of computers to accommodate students' needs.
- Hard copy and soft copy references are available in the library.
- Access to journals and several scientific databases is provided via UST library website.

The Total number of students who are expected to get admission to the program:

- 109 students are expected to be enrolled per year in this program.

The Total number of teaching staff who are going to teach the program courses:

- 2 Professors
- 3 Associate Professors
- 6 Assistant Professors

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- 5 Lecturers
- 3 Teaching Assistants

The Total number of Technicians:

- (17) technicians are responsible for providing support during the teaching of this program courses.

Facilities

Classrooms, laboratories, computer labs, and library.

Graduation & Upgrading Requirements

a. Degree Classifications:
- Marks from the second year to the fifth year are weighted so that determines the overall marks of the degree.
- The final overall marks in classes determine the degree classification as follows:

1. Grading System:

Marks (M)	Points	Grade
M >= 95	4.0	Excellent+
95 > M >= 90	3.4	Excellent
90 > M >= 85	3.0	Very Good+
85 > M >= 80	2.6	Very Good
80 > M >= 75	2.2	Good+
75 > M >= 65	1.8	Good
65 > M >= 60	1.4	Pass+
60 > M >= 50	1.0	Pass
50 > M >= 30	0.5	Poor
30 > M >= 0	0.1	Very Poor

b. For the students to be transferred from one academic year to the next, he/she is required to have successfully passed in all subjects in the final or in the complementary exams in October of the same year.
c. However, the student may still be transferred if he has failed in not more than two basic subjects and any number of complementary ones from the same academic year or from previous years. In such cases, students " carrying" subjects from one year to the next should re-sit for their "failed" subjects in their proper respective semesters.
d. Final year students who have failed in October exam also has to re-sit for his exams in those subjects in their proper respective semesters thereafter as many times as necessary until he/she passes that subject.
e. By university laws, every student has only two opportunities for every level to succeed, once the student exhausts the number of opportunities, he/she will be excluded from the department and can change to another major.

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2. Program Assessment:

	Type of the Sample who Assess the program	Instruments used	Sample
1	Final Year students	Questionnaire	30%
2	Graduates from the program	Questionnaire	30%
3	Labor market (Measure the performance of the program graduates)	Questionnaire	20%
4	Program members for their feedback on the program and curriculums	Questionnaire	50%
5	Students evaluation for (Courses, Teaching strategies, Academic staff, Progress of the curriculum)	Questionnaire	30%
6	Program Monitoring Committee (Evaluate Program's Outcomes During its Life Cycle)	Direct / Indirect	(73) courses
7	Development & Quality Assurance Deanship (Measure the improvement in program performance)	Report	1
8	Academic staff and Program Coordinator (Course Report)	Report	(73) courses
9	Program Monitoring Committee (Program annual performance report)	Report	One / year

A workshop was carried out to match stakeholders expected competencies with NAPRA competencies (Annex 14)

Program Quality Standards:

- Set up a committee to develop the program and a committee to monitor the program and its consistency with QAP.

- Invite samples from the leaders in the labor market to a joint workshop with the program committee.

- Prepare correction procedures report of the questionnaires evaluations that are mentioned in section 24 (Program Assessment).

- Review the execution reports of the correction plans for:

- The semester report of the program monitoring committee.

- The annual academic performance report.

- The study of measuring the improvement in the program performance.

- The study of the program self-evaluation.

Internal and external training to satisfy program standards:

Continuous training seminars and workshops are offered for faculty members involved in the curriculum development. This include internal (teaching and learning center, and quality assurance department within university) and external (key speakers and specialists in the area) training in the subject.

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