

Student Guide
Faculty of Pharmacy
Cairo University
2021-2022



Speech of the President of Cairo University

My sons and daughters, students and students

I am pleased to send you my warmest and best regards for the beginning of the academic year, in which we look forward together to transform Cairo university into a third-generation university in light of the comprehensive and Continuous modernization and development processes to suit local and international changes

In order to achieve a decisive and promising leadership in its present and future and based on the possibility of satisfying the needs of the community through educational and research services that will achieve a real addition to the Egyptian and Arab population

There is no doubt that we are all striving to complete the new strategic plan of Cairo university in all fields of academic work, scientific research, teaching and student activities in addition to other sectors of education affairs and students, the sector of the General Secretariat, the sector of

graduate studies and research, and the sector of Community Service

One of the most important objectives of this strategic plan is to create an educational renaissance in research; as we are always keen on development, and one of its most important features is Education and the development of education to ensure entering the era of smart education, curriculum development, and employing modern teaching and learning methods, and developing assessment methods and questions Governance implementation, development of educational programs and regulations, development courses and university textbooks, developing exams, increasing competitiveness for Cairo University students, the development of university cities (infrastructure and strength Al-Naema

Upgrading the Olympic Sports Village and college stadiums, improving Services and mechanization of the sector, development of medical services, development of the spirit of innovation research teams, scientific solution to problems, renewal of religious thinking, development

cultural, artistic, sports and literary talents, discovering and making stars, Social solidarity, increasing the number of arrivals

As we look to the future, we have a lot of work to do

We all at Cairo University believe with our vision, will and capabilities, we also believe that we are able to achieve Ambitious dreams that will all crystallize in the direction of one goal, which is the bright future of this prestigious university. This will not happen without implementing plans. According to quality standards. As we look to the future, we have a lot of work ahead of us to accomplish it, in order to achieve our message, which is graduating students on the highest scientific, skill and behavioral level Our ambition is to reach as far as possible over the next few years. This will only come with a strategic plan based on advanced skills in teaching, and scientific methodology in research, technical performance in management, and above all further development of skills faculty and administrators in a manner appropriate to the development of the process the quality

Finally, I wish from all my heart the best of luck to our fellow faculty members and staff, and to our dear students

God bless you, peace and God's mercy and blessings

**Prof. Dr. Muhammad Othman Alkhosht President
of Cairo University Greetings to all of you**

Happy new year



Speech of the Dean and Vice Dean for Education and Student Affairs

My dear sons and daughters,

We are pleased to have you join the family of the Faculty of Pharmacy (Cairo University), this lofty edifice that has always carried the banner of leadership in the field of various pharmaceutical sciences. At the local and regional levels. The Faculty of Pharmacy (Cairo University) has enjoyed an honorable position at the international level for its distinguished research, and the Faculty of Pharmacy is proud of its graduates who held high positions that affected various academic and pharmaceutical sectors.

My sons and daughters students

We have taken upon us a mission which is to provide a competent graduate with knowledge and skill capable of creativity in the labor market and facing challenges and difficulties and able to fight competitive battles. Therefore, the college spares no effort in providing the appropriate climate that provides our students with the ability to acquire knowledge and acquire knowledge. Various practical skills under the circumstances and challenges of the current stage. The college plan was not satisfied with that, but it works to adopt the idea of continuous education and self-learning, and we believe in the importance of this age stage in the maturity of your personality - our dear parents - so the college offers many artistic, cultural and sports activities to develop students' talents in addition to preparing the student to exercise the right to vote In addition to raising the sense of responsibility towards society through the activities of the Social Committee and the activities of families, which aim to spread awareness and provide various assistance.

Our students

You are today's students and tomorrow's pharmacists. Be proud of your loyalty to your college - your profession. Preserve the ethical and professional charter wherever you are. Do your best to achieve excellence and success. Remember well that our doors will remain open to you and we will not hesitate to provide everything that is in the interest of the student. We will do our best and cooperate together hand in hand to achieve our mission, and God is the Grantor of success.

**Prof. Dr. Shohda A. El-Maraghy
Vice dean of Educational and Students' Affairs
and Acting Dean of Pharmacy**

Faculty of Pharmacy

Slogan

The beacon of pharmaceutical education in Egypt and its regional vicinity.

Vision

Within the framework of Egypt's vision 2030, the Faculty of Pharmacy - Cairo University aims to maintain its national leadership and to continue its international excellence in the field of pharmacy.

Mission

We are committed to prepare graduates who uphold the values and ethics of the pharmacy profession, and who are able to compete locally and internationally through academic and professional programs that coincide with developments of the labor market, using advanced teaching and learning strategies and techniques. The faculty also supports applied scientific research to contribute to the knowledge-based economy, medicine industry service, patient health and effective partnership with community institutions depending/exploiting efficient human expertise in achieving its mission.

Governing Values

The college administration seeks to affirm the following set of values:

(P H A R M A)

- P Professional performance
- H Honesty
- A Accountability
- R Risk-mitigation
- M Market-oriented
- A Academic excellence

Scientific Departments

The Faculty of Pharmacy comprises the following scientific departments:

- 1- Department of Pharmaceutics and Industrial Pharmacy
- 2- Department of Pharmacognosy
- 3- Department of Pharmacology and Toxicology
- 4- Department of Microbiology and Immunology
- 5- Department of Pharmaceutical Organic Chemistry
- 6- Department of Pharmaceutical Analytical Chemistry
- 7- Department of Biochemistry
- 8- Department of Pharmaceutical Chemistry
- 9- Department of Clinical Pharmacy

Degrees offered by the faculty

Cairo University offers the following degrees and diplomas upon the request of the Faculty of Pharmacy:

1 - Bachelor of Pharmacy (PharmD)

2 - Bachelor of Pharmacy (PharmD - Clinical Pharmacy).

-3 Master and Doctor of Philosophy degrees in Pharmaceutical Sciences in the following specializations:

- Pharmaceutics
- Pharmacognosy
- Microbiology and Immunology
- Pharmaceutical Analytical Chemistry
- Pharmaceutical Chemistry
- Industrial Pharmacy
- Pharmacology and Toxicology
- Pharmaceutical Organic Chemistry
- Biochemistry
- Clinical Pharmacy

4- Postgraduate Diplomas in the following specializations:

- Cosmetic Preparations
- Hospital Pharmacy
- Industrial Pharmacy
- Medicinal Plants
- Toxicology and forensic chemical analysis
- Pharmacology
- Microbiology
- Biotechnology
- Pharmaceutical raw materials
- Drug control and quality assurance
- Biochemical Analysis Drug Discovery
- Pharmacovigilance
- Clinical Nutrition

5- Doctor of Pharmacy (D Pharm) for postgraduate students.

Acting Dean of the Faculty
and Vice Dean for Education and Student Affairs

Prof. Shohda Assem El-Maraghy

Vice Dean for Graduate Studies and Research

Prof. Maha AbdelMonem Hegazy

Vice Dean for Community Service and Environmental Development

Prof. Sherine Maher Rizk

Coordinator of the Clinical Pharmacy Program

Prof. Asmaa Ahmed El-Zaher

Director of the Department of Education and Student Affairs

Ms. Somaya Anwar Abdel-Rahman

Director of Youth Welfare Department

Ms. Horeya Mohamed Ibrahim

Heads of Department Boards

Prof. Mohamed Ahmed El-Nabarawy

Department of Pharmaceutics and Industrial Pharmacy

Prof. Dina Rafik Abou Hussen

Department of Pharmacognosy

Prof. Nesreen Salah Eldin

Pharmacology and Toxicology Department

Prof. Ayman Yassin

Microbiology and Immunology Department

Prof. Hanan Hassan Kadry

Pharmaceutical Chemistry Department

Prof. Samah Said Abbas

Analytical Chemistry Department

Prof. Noha ElBoghdady

Department of Biochemistry

Prof. Doaa Ezzat Abdel Rahman

Department of Pharmaceutical Chemistry

Prof. Samar Farghaly Farid

Clinical Pharmacy Department

Faculty website

www.pharma.cu.edu.eg

All information the student is interested in is continuously published on the faculty website:

Announcements of interest to students:

- Study schedules, exams.
- Results of practical, quarterly and final examinations.
- Lectures, seminars, conferences and workshops held at the faculty.
- Student Activities.
- Dates of payment of tuition fees.
- Services for foreign students.

Clinical Pharmacy Program

Cairo University grants upon the request of the Faculty of Pharmacy for graduates of this program the degree of Bachelor of Pharmacy (PharmD - Clinical Pharmacy).

- Study started in the program starting from the academic year **2006/2007** according to the Ministerial Decision No. **2274** issued on **8/9/2006**.
- The program aims to graduate a pharmacist familiar with all the requirements of the profession and the latest branches of science and all modern technologies that makes him a distinguished pharmacist that can work in public and private pharmacies, pharmaceutical factories and companies, pharmaceutical control laboratories and analysis, pharmaceutical marketing, research centers and universities.
- What's new in this program is the focus on the pharmacist's role in caregiving and follow-up inside and outside hospitals and the study of the principles of clinical pharmacokinetics and their applications in treatment of different cases and in finding appropriate treatment regimens in cooperation with physicians.
- The duration of study in the program is six years according to the credit hours system; ten semesters and one year of advanced training.
- Any new student can apply to the program's administration office to join the program of Clinical Pharmacy.

Transfer Rules for Clinical Pharmacy for New Students **2021/2022**:

- The student should have a high school diploma or equivalent certificates.
- The student must have been nominated through the Office of Coordinating to one of the Governmental Faculties of Pharmacy in the academic year **2021/2022**.
- The faculty does not accept transfers from students who have obtained a bachelor's degree from any other faculty.

Conversion rules for the clinical pharmacy program to the third or fifth semester for

the academic year 2021/2022:

- The student should be from an accredited public university that has a similar program.
- The student wishing to transfer should have spent a period of at least two semesters and not more than four semesters in his faculty before transfer.
- The student should have successfully completed at least **12** credit hours per semester and has a GPA of more than **3.7**.
- The Faculty does not accept transfers from students who have obtained a bachelor's degree from any faculty.

Bachelor of Pharmacy (PharmD) Program

The program is designed based on five academic years and an advanced training year (Residency). The year of training includes periodic rotation training in different areas of pharmaceutical practices (pharmaceutical manufacturing - drug control and regulation) in addition to one training course in the field of clinical pharmacy, and the student submits a graduation project in a specialty. The program is designed to allow the graduate to practice the profession of pharmacy in any of the areas of pharmacy work.

Program Vision

Scientific excellence and continuous development to serve the therapeutic health system and the pharmaceutical industry and achieve sustainable development to reach a prominent position globally in the field of pharmacy.

Program Mission

Preparing pharmacists with professional ethics that are qualified in the latest pharmacy concepts and therapeutic care that enables them to contribute to the development of pharmaceutical industries and raising the efficiency of the pharmaceutical care system at the local and regional level in hospital pharmacies through the provision of pharmaceutical services at a professional level in public and private pharmacies, pharmaceutical factories and companies and control laboratories, pharmaceutical and food analysis in addition to work in the field pharmaceutical marketing and actively participate in scientific research through research centers and universities to serve the community.

Program Goals

- Graduating a distinguished pharmacist qualified to work in public and private pharmacies, pharmaceutical factories and companies, pharmaceutical control laboratories, food analysis, pharmaceutical marketing, research and universities.
- Focus on the role of the pharmacist in providing appropriate health care to the patient inside and outside hospitals by educating and advising individuals and communities to improve therapeutic outcomes and reduce the incidence of diseases, taking

into account that the profession's ethics, its responsibilities and authorities, respecting its laws and ethics, and respecting the rights of patients.

- Preparation of a pharmacist that uses evidence-based data to provide contemporary pharmaceuticals and pharmaceutical services in addition to being able to have effective communication, leadership, management and entrepreneurship skills.
- Graduating a pharmacist who works as a lifelong learner for sustainable professional development and demonstrates the ability to assess performance and self-assessment skills.
- Increase the competitiveness of program graduates at the regional level through study and training programs.
- Participate in community service and environmental development and provide a tangible economic return by rationalizing the use of medicines in hospitals.
- Commitment to achieving quality standards in pharmaceutical education through interactive learning and self-learning.

Regulations

Degree awarded to graduates

The Cairo University Council grants the Bachelor of Pharmacy (PharmD) degree at the request of the Faculty of Pharmacy's Board in accordance with the credit hours system.

Qualification for higher academic degrees

The Bachelor of Pharmacy (PharmD) degree is the first undergraduate degree in pharmacy required to obtain a license to practice the profession in all available pharmacy fields.

System of study

A- The duration of study in the program is five academic years (five levels over ten semesters) according to the credit hours system and an advanced training year (Residency) in professional places (5 + 1), in addition to 100 actual hours initial field training in private or government pharmacies or hospital pharmacies that takes place during the summer holidays after the end of the third level and before the beginning of

the final year of training.

B- Each level (year) is divided into two semesters (fall and spring) and each semester is fifteen weeks. Some courses may be offered in a summer semester for six to eight weeks of intensive study.

C- The credit hour is a unit of measurement equivalent to a weekly theoretical study hour or a practical lesson of not less than two hours per week and taught over one semester. D- The program includes 175 credit hours in addition to 6 credit hours of university requirements. The student should study 4 elective courses (8 credit hours) in the last two levels to be selected from the list of offered elective courses.

E- Learning is through theoretical lectures, panel discussions, practical lessons, workshops, field training, research, and presentations, as well as cooperation with the community around the University. And the college board can decide, after taking the relevant department council approval and according to the nature of the courses, to teach a course or more in the hybrid education style, with 60% of the course taught face-to-face and 40% using online teaching, or other percentage according to the nature of the courses.

Academic Advising

The faculty assigns each group of students an academic adviser from the faculty who carries out the care and guidance tasks and is responsible for the student in the scientific, social and psychological affairs and guidance in all matters related to his university life and helps students in choosing the courses from the list of courses offered by the faculty in each semester.

Registration

A- The student must personally register the courses that he / she wishes to study in each semester, with the necessity to select the courses and the number of credit hours in consultation and agreement with the academic advisor.

B- To register the course, the student must have successfully passed the registration requirement (pre-requisite) for this course.

C- The student must complete the registration form at the specified times according to the university calendar announced for each semester.

D- The student is not allowed to register late for the specified times, except with a compulsory excuse accepted by the Dean of the Faculty provided that the period of delay is not more than a week from the end of the registration period.

Academic load

A- The academic load is the number of credit hours that the student registered in one semester.

B- The academic load shall not be less than 12 credit hours and not more than 22 credit hours, while the struggling student's academic load shall not exceed 12 credit

hours.

C- The maximum academic load in the summer semester is **10** credit hours.

Add, Drop and Withdrawal

A- The student can, after completing the registration procedure, add or drop to his credit hours one or more courses in any semester provided that this is within the periods specified according to the faculty calendar announced for each semester taking into account the minimum and maximum academic load.

B- A student may, after registering, withdraw from one or more courses in any semester without being considered a failure in this course, if he / she applies for withdrawal within the specified periods according to the declared faculty calendar for each semester.

Attendance

A- The student must attend the theoretical lectures, discussion sessions, practical lessons, field and clinical training and assignments. According to the request of the councils of the concerned scientific departments, the Faculty Council may deprive the student from taking the final written examination if his absence exceeds **25%** of the total actual hours of the course.

B- The student must take the final written exams on the dates scheduled according to the faculty calendar announced for each semester, and the student who is absent from the final written examination is considered a failure in the course. The student may not be considered a failure if he is absent with a compulsive excuse that is accepted by the Faculty Board.

Language of study

Study language is English. However, some courses may be taught in Arabic based on the recommendation of the concerned scientific department and the approval of the Faculty and University councils.

Initial Field Training

The student should hold a field training period in local or government pharmacies or hospital pharmacies approved by the faculty council under the supervision of a faculty member. Training is during the summer holidays after the end of the third level with a total of **100** actual hours, and before starting the advanced field training (Residency).

Advanced Field Training (Residency Year)

- A- The sixth year of the study is devoted to advanced field training for an academic year (9 months) for a total of 36 weeks in which the student trains in the fields of various pharmaceutical practices (companies and factories of human and veterinary medicines, medical supplies and equipment, cosmetics, food supplements, herbs, medicinal plants, disinfectants, pesticides, distribution companies and stores, local and international centers and bodies of pharmaceuticals monitoring and follow-up, pharmaceutical and medical research centers, bioavailability, clinical studies, information and drug marketing etc), and those who wish to specialize in the field of academic (teaching and research) spend a training period in the faculties of pharmacy or research centers.
- B- Advanced field training should include one clinical training course.
- C- The advanced training program is designed in an integrated and systematic manner in a periodical rotation recorded in hours and training tasks and under the strict supervision of the faculty and the training organization.
- D- The committee responsible for supervising the program shall design the advanced training program annually based on the number of students and the availability of training places.
- E- The student must submit and pass a graduation project in a specific specialization determined by the committee responsible for supervising the program.

Evaluation system

- A- The final grade of the course consists of the sum of the periodical, practical, written and oral exams as shown in the tables of the study plan.
- B- The minimum pass rate in any course is 60% (or 50% in case of university requirements) of the total grades of this course.
- C- The percentage of final grades and grades is shown in the following table:

Percentage	Points	Symbol	Grade
95 or more	4	A ⁺	Excellent
90 to less than 95	3.85	A	
85 to less than 90	3.70	A ⁻	
82.5 to less than 85	3.30	B ⁺	Very Good
77.5 to less than 82.5	3	B	
75 to less than 77.5	2.70	B ⁻	
72.5 to less than 75	2.30	C ⁺	Good
67.5 to less than 72.5	2	C	
65 to less than 67.5	1.70	C ⁻	
62.5 to less than 65	1.30	D ⁺	Pass
60 to less than 62.5	1	D	
Less than 60	0.0	F	Fail
	-	W	Withdrawal
	-	I*	Incomplete
	-	AbsE**	Absent with an acceptable excuse
I*	The student obtains this code if the attendance rate is complete, and he is unable to enter the final written and oral exam (if any) for compelling reasons accepted by the Faculty Council. He must take the final written and oral examination (if any) only by the second week of the next semester while retaining the grade.		
AbsE**	The student shall receive this code if he is unable to enter the final written and oral examination (if any) on the date mentioned in the previous paragraph (I) because the compulsive reason has not passed, and the student must register in this course when it is put back and study it in full while retaining the grade.		

- There are other assessment codes that are not matched by points : used in some graduation requirements - namely

S: Satisfactory level

U: Unsatisfactory level

T: Degrees obtained by a transfer student from another pharmacy faculty

:The GPA is calculated as follows

1. The number of points for each course is multiplied by the number of credit hours for this course.
2. The multiplication product is added for all the courses in which the student is registered in the same semester.

3. The result of the addition is divided by the total credit hours registered for the student in the same semester.

Quarterly rate (GPA) =

Total (number of course points x number of credit hours) for all courses per semester ÷ Total credit hours registered in the same semester

CGPA is calculated as follows:

Cumulative GPA (cGPA) =

Total (number of course points x number of credit hours) for all courses for all semesters ÷ Total credit hours registered in all semesters

It is permissible for the faculty council after taking the opinion of the relevant department councils and according to the nature of the courses to hold examination electronically in one or more courses, and the examination may include part of or the entire course

Failure in the courses

:The student shall be considered a failure in the course in the following cases

- If the student is absent without an excuse accepted by the Faculty Board for the final written examination.
- If the student has obtained less than 30% of the final written examination.
- Failure to achieve at least 60% of the total grades of the course (50% in case of university requirements).

If the student fails in any compulsory course in any semester, he shall study the same course when it is offered again. If he fails in an elective course, he may re-study it or study another alternative course to complete the graduation requirements, after the approval of the academic advisor and the approval of the Supervisory Committee.

Academic Probation

- A student is considered on probation academically if he / she receives a GPA of less than 1.
- A student who receives a GPA of less than 1 for 6 continuous semesters or in 10 non-consecutive semesters is dismissed from the faculty after approval of the Faculty Council. Summer semesters, if any, are not taken into consideration.

Drop out of the study

A student shall be deemed to have dropped out if he did not register in a semester or withdrew from the semester whether with or without an excuse. The student may suspend his study for a maximum of two consecutive semesters or three non-con-

secutive semesters, provided he obtains the approval of the Faculty Council. In case of suspension for a longer period without an excuse accepted by the Faculty Council and approved by the University Council, the provisions of the Executive Regulations of the University Regulation Act shall apply

(Requirements to obtain a Bachelor of Pharmacy (PharmD

: The PharmD degree in credit hours requires

First: Studying and passing a total of **175** credit hours spread over **10** semesters, including the compulsory faculty requirements of **167** credit hours and elective faculty requirements of **8** credit hours, provided that the cumulative average is not less than

. ««1

Second: Passing an initial field training period with a total of **100** actual training hours in private or government pharmacies or hospital pharmacies approved by the faculty council under the supervision of a faculty member and training during summer holidays for years of study after the end of the third level and before starting the ad-

. (vanced field training Privilege

Third: Passing a period of advanced field training (year of excellence) by an academic year (**36** weeks) after the completion of the years of study and submit a graduation

. project in one of the disciplines offered

. Fourth: Passing the university requirements for graduation

Disciplinary system of students

Students enrolled in the program are subject to the disciplinary system set out in the . Egyptian Universities Organization Law and its executive regulations

Updating the academic courses

The University Council may agree to update a percentage not exceeding **20%** of the course content based on the proposal of the faculty board, after the approval of the supervisory committee of the program and the relevant scientific department council .and after providing the necessary justifications

Key for Course Abbreviations

PT	Pharmaceutics & Pharmaceutical Technology
PG	Pharmacognosy
PO	Pharmacology & Toxicology
PM	Microbiology & Immunology
PC	Chemistry
PB	Biochemistry
PP	Pharmacy Practice/Clinical Pharmacy
MD	Medical Courses
NP	Nonprofessional Courses
UR	University Requirement Courses

1. The letter 'P' means that the courses are offered to students of Pharmacy only.
2. The first digit represents the semester number.
3. The second and third digits represent the course number.

Semester (1)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Written Exam Hours
		Lecture	P/T	Total		Periodical	P/T	Written	Oral		
Pharmaceutical Analytical Chemistry I	PC 101	2	1	3	Registration	20	40	75	15	150	2
Pharmaceutical Organic Chemistry I	PC 102	2	1	3	Registration	20	40	75	15	150	2
Pharmacy Orientation	PT 101	1	-	1	Registration	10	-	40	-	50	1
Medicinal Plants	PG 101	2	1	3	Registration	20	40	75	15	150	2
Medical Terminology	MD 101	1	-	1	Registration	10	-	40	-	50	1
Information Technology	NP 101	-	1	1	Registration	10	40	-	-	50	-
Human Rights & Fighting Corruption	NP 102	1	-	1	Registration	10	-	40	-	50	1
Mathematics*	UR 101	1	-	1	Registration	10	-	40	-	50	1
Psychology*	UR 102	1	-	1	Registration	10	-	40	-	50	1
Total	—	11	4	15		_____				750	—

P/T = Practical/Tutorial

* Courses not added to GPA

Semester (2)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Written Exam Hours
		Lecture	P/T	Total		Periodical	P/T	Written	Oral		
Pharmaceutical Analytical Chemistry II	PC 203	2	1	3	Registration	20	40	75	15	150	2
Pharmaceutical Organic Chemistry II	PC 204	2	1	3	Pharmaceutical Organic Chemistry I	20	40	75	15	150	2
Pharmacognosy I	PG 202	2	1	3	Medicinal Plants	20	40	75	15	150	2
Physical Pharmacy	PT 202	2	1	3	Registration	20	40	75	15	150	2
Cell Biology	MD 202	1	1	2	Registration	15	25	50	10	100	1
Anatomy	MD 203	1	-	1	Registration	10	-	40	-	50	1
Histology	MD 204	1	1	2	Registration	15	25	60	-	100	1
Critical Thinking	UR 203	2	-	2	Registration	-	-	100	-	100	2
Total	—	13	6	19	—	—	—	—	—	950	—

P/T = Practical/Tutorial

Semester (3)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Written Exam Hours
		Lecture	P/T	Total		Periodical	P/T	Written	Oral		
Pharmaceutical Analytical Chemistry III	PC 305	2	1	3	Pharmaceutical Analytical Chemistry II	20	40	75	15	150	2
Pharmaceutical Organic Chemistry III	PC 306	2	1	3	Pharmaceutical Organic Chemistry II	20	40	75	15	150	2
Pharmacognosy II	PG 303	2	1	3	Pharmacognosy I	20	40	75	15	150	2
Pharmaceutics I	PT 303	2	1	3	Physical Pharmacy	20	40	75	15	150	2
Physiology & Pathophysiology	MD 305	2	1	3	Registration	20	40	90	-	150	2
Entrepreneurship	UR 304	2	-	2	Registration	-	-	100	-	100	2
Total	—	12	5	17	_____				850	—	

P/T = Practical/Tutorial

Semester (4)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Written Exam Hours
		Lecture	P/T	Total		Periodical	P/T	Written	Oral		
Instrumental Analysis	PC 407	2	1	3	Pharmaceutical Analytical Chemistry II	20	40	75	15	150	2
Pharmaceutical Organic Chemistry IV	PC 408	2	-	2	Pharmaceutical Organic Chemistry I	15	-	75	10	100	2
Pharmaceutics II	PT 404	2	1	3	Physical Pharmacy	20	40	75	15	150	2
Biochemistry I	PB 401	3	1	4	Registration	30	50	100	20	200	3
General Microbiology & Immunology	PM 401	3	1	4	Registration	30	50	100	20	200	3
Pathology	MD 406	1	1	2	Histology	15	25	50	10	100	1
Communication Skills	NP 403	-	1	1	Registration	10	40	-	-	50	-
Total	—	13	6	19	_____				950	—	

P/T = Practical/Tutorial

Semester (5)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Written Exam Hours
		Lecture	P/T	Total		Periodical	P/T	Written	Oral		
Drug Design	PC 509	1	1	2	Pharmaceutical Organic Chemistry IV	15	25	50	10	100	1
Phytochemistry I	PG 504	2	1	3	Pharmaceutical Organic Chemistry IV	20	40	75	15	150	2
Pharmaceutics III	PT 505	2	1	3	Physical Pharmacy	20	40	75	15	150	2
Biochemistry II	PB 502	2	1	3	Registration	20	40	75	15	150	2
Pharmaceutical Microbiology	PM 502	2	1	3	General Microbiology & Immunology	20	40	75	15	150	2
Pharmacology I	PO 501	2	1	3	Physiology & Pathophysiology	20	40	75	15	150	2
Total	—	11	6	17	—————				850	—	

P/T = Practical/Tutorial

Semester (6)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Written Exam Hours
		Lecture	P/T	Total		Periodical	P/T	Written	Oral		
Medicinal Chemistry I	PC 610	3	1	4	Drug Design	30	50	100	20	200	3
Phytochemistry II	PG 605	2	1	3	Phytochemistry I	20	40	75	15	150	2
Biopharmaceutics & Pharmacokinetics	PT 606	2	1	3	Pharmaceutics III	20	40	75	15	150	2
Pharmaceutics IV	PT 607	2	1	3	Physical Pharmacy	20	40	75	15	150	2
Parasitology	PM 603	1	1	2	Registration	15	25	50	10	100	1
Pharmacology II	PO 602	3	1	4	Pharmacology 1	30	50	100	20	200	3
Total	—	13	6	19	—	—				950	—

P/T = Practical/Tutorial

Semester (7)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Written Exam Hours
		Lecture	P/T	Total		Periodical	P/T	Written	Oral		
Medicinal Chemistry II	PC 711	3	1	4	Drug Design Pharmacology II	30	50	100	20	200	3
Applied & Forensic Pharma-cognosy	PG 706	1	1	2	Phytochemistry II	15	25	50	10	100	1
Pharmaceutical Technology I	PT 708	2	1	3	Pharmaceutics IV	20	40	75	15	150	2
Medical Microbiology	PM 704	3	1	4	Pharmaceutical Mi-crobiology	30	50	100	20	200	3
Pharmacology III	PO 703	2	1	3	Pharmacology I	20	40	75	15	150	2
Elective Course	**	1	1	2	Registration	15	25	60	-	100	1
Total	—	12	6	18	_____				900	—	

P/T = Practical/Tutorial

Semester (8)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Written Exam Hours
		Lecture	P/T	Total		Periodical	P/T	Written	Oral		
Pharmaceutical Technology II	PT 809	2	1	3	Pharmaceutical Technology I	20	40	75	15	150	2
Clinical Biochemistry	PB 803	2	1	3	Registration	20	40	75	15	150	2
Clinical Pharmacokinetics	PP 801	2	1	3	Biopharmaceutics & Pharmacokinetics	20	40	75	15	150	2
Hospital Pharmacy	PP 802	1	1	2	Registration	15	25	50	10	100	1
Community Pharmacy Practice	PP 803	2	1	3	Registration	20	40	75	15	150	2
Drug Information	PP 804	1	1	2	Registration	15	25	50	10	100	1
Pharmaceutical Legislations & Regulatory Affairs	NP 804	1	-	1	Registration	10	-	40	-	50	1
Elective Course	**	1	1	2	Registration	15	25	60	-	100	1
Total	—	12	7	19	—	—				950	—

P/T = Practical/Tutorial

Semester (9)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Written Exam Hours
		Lecture	P/T	Total		Periodical	P/T	Written	Oral		
Advanced Drug Delivery Systems	PT 910	2	1	3	Pharmaceutics I	20	40	75	15	150	2
Biotechnology	PM 905	2	1	3	Registration	20	40	75	15	150	2
Public Health	PM 906	1	-	1	Medical Microbiology	10	-	40	-	50	1
Basic & Clinical Toxicology	PO 904	3	1	4	Pharmacology II	30	50	100	20	200	3
Clinical Pharmacy I	PP 905	2	1	3	Registration	20	40	75	15	150	2
Pharmacoeconomics	PP 906	1	-	1	Registration	10	-	40	-	50	1
Marketing	NP 905	1	-	1	Registration	10	-	40	-	50	1
Elective Course	**	1	1	2	Registration	15	25	60	-	100	1
Total	—	13	5	18	_____				900	—	

P/T = Practical/Tutorial

Semester (10)

Course Title	Course Code	Credit Hours			Prerequisite	Examination Marks				Total Marks	Final Written Exam Hours
		Lecture	P/T	Total		Periodical	P/T	Written	Oral		
Quality Control of Pharmaceuticals	PC 012	2	1	3	Instrumental Analysis	20	40	75	15	150	2
Phytotherapy & Aromatherapy	PG 007	2	1	3	Pharmacognosy II Pharmacology III	20	40	75	15	150	2
Good Manufacturing Practice	PT 011	1	1	2	Pharmaceutical Technology I	15	25	60	-	100	1
Drug Interaction	PO 005	1	-	1	Pharmacology I	10	-	40	-	50	1
Clinical Pharmacy II	PP 007	2	1	3	Clinical Pharmacy I	20	40	75	15	150	2
Pharmacoepidemiology & Pharmacovigilance	PP 008	1	-	1	Drug Information	10	-	40	-	50	1
First Aid	MD 007	1	1	2	Registration	15	25	60	-	100	1
Scientific Writing	NP 006	1	1	2	Registration	15	25	60	--	100	1
Professional Ethics	NP 007	1	-	1	Registration	10	-	40	-	50	1
Elective Course	**	1	1	2	Registration	15	25	60	--	100	1
Total	—	13	7	20	_____				1000	—	

P/T = Practical/Tutorial

Elective Courses

The Faculty of Pharmacy offers elective courses from which the students are free to select 8 credit hrs

Course Code	Course Title	Credit Hours		
		Lecture	P/T	Total
PT E12	Cosmetic Preparations	1	1	2
PT E13	Quality Assurance & Control of Cosmetics	1	1	2
PT E14	Veterinary Pharmacy	1	1	2
PG E08	Complementary & Alternative Medicine	1	1	2
PG E09	Production & Manufacture of Medicinal Plants	1	1	2
PG E10	Chromatography & Separation Techniques	1	1	2
PG E11	Herbal Cosmetics	1	1	2
PO E06	Biological Standardization	1	1	2
PO E07	Veterinary Pharmacology	1	1	2
PO E08	Drug Abuse	1	1	2
PO E09	Occupational Toxicology	1	1	2
PO E10	Sport & Exercise Pharmacology	1	1	2
PM E07	Infection Control	1	1	2
PM E08	Biologicals: Biopharmaceutical & Immunological Products	1	1	2
PM E09	Bioinformatics	1	1	2
PM E10	Fundamentals of Genomics	1	1	2
PC E13	Advanced Pharmaceutical Analysis-Spectroscopy	1	1	2
PC E14	Applied Analysis	1	1	2
PC E15	Environmental Analysis	1	1	2
PC E16	Bioanalysis	1	1	2
PC E17	Advanced Drug Design	1	1	2
PC E18	Metabolism in Drug Discovery	1	1	2
PB E04	Clinical Nutrition	1	1	2
PP E09	Management of Oncological Disorders	1	1	2
PP E10	Clinical Pharmacy Practice	1	1	2
PP E11	Management of Infectious Diseases	1	1	2

Course Content

PT 101 Pharmacy Orientation 1+0

The course covers the multiple aspects of the profession of pharmacy; the mission of pharmacy, role of pharmacist in society and pharmacy careers. It also covers classification of medications, interpretation of prescriptions and medication orders, general dispensing procedure, factors affecting drug dosage, sources of drugs, different dosage forms, various routes of administration and the history of pharmacy . practice in various civilizations

PT 202 Physical Pharmacy 2+1

The course covers physicochemical principles essential for the design and formulation of pharmaceutical products, the fundamental concepts of states of matter; phase equilibrium, colligative properties, isotonicity, solubility, dissolution, partition coefficient, surface and interfacial phenomena, surface active agents, adsorption, and its .application in pharmacy. It also covers rheological behaviour of dosage forms

PT 303 Pharmaceutics I 2+1

The course covers the system of weights, measures, mathematical expertise and pharmaceutical calculations requisite to the compounding, dispensing, and utilization of drugs in pharmacy practice. It also covers incompatibilities occurring during dispensing, manufacturing formulations aspects, packaging, storage, stability, and quality control of liquid dosage forms; solutions (aqueous and non-aqueous), suspensions, emulsions and colloids with emphasis on the technology and . pharmaceutical rationale fundamental to their design and development

PT 404 Pharmaceutics II 2+1

The course covers the structure and function of the skin, target area of treatment after topical application to skin, basic principles of diffusion through membranes, factors affecting percutaneous absorption, enhancement of skin penetration, transdermal drug delivery systems. It also covers the principles and techniques involved in the formulation, manufacturing and quality control of traditional dermatological semisolid . dosage forms; creams, ointments, gels and pastes and cosmetic products

PT 505 Pharmaceutics III 2+1

The course covers the kinetics of drug decomposition; rate and order of the reaction, determination of the half-life, expiry date and shelf-life by different methods, stability testing, and in-vitro possible drug/excipients interactions .It also covers the principles and techniques involved in the formulation, manufacturing and quality control of solid dosage forms, powders, granules, tablets, capsules and suppositories . It also covers . microencapsulation techniques

PT 606 Biopharmaceutics & Pharmacokinetics 2+1

The course covers the relation between the physicochemical properties of the drug and its fate in the body, the basic principles of pharmacokinetics (ADME) including; single

intravenous bolus and oral kinetics, IV infusion, multiple IV bolus, short infusion and oral dosing, non-linear pharmacokinetics, pharmacokinetic models. It also covers the principles of biopharmaceutics and strategies for enhancing drug delivery and bioavailability, integration of knowledge gained from other courses to design and assure the quality of drug products, the concepts of bioequivalence, biowaivers, *in vitro-in vivo* correlations (IVIVC's) and different models of drug disposition. In addition to utilizing pharmacokinetics to guide formulation, dosage-regimen design and optimizing drug usage

PT 607 Pharmaceutics IV 2+1

The course covers the principles of formulation, development, sterilization, packaging and quality control testing of pharmaceutical sterile drug products, the principles for calculation and manipulation of parenterals, ophthalmic preparations, vaccines and blood products. It also covers the formulation, manufacturing, quality control testing and applications of aerosols and other inhalation products

PT 708 Pharmaceutical Technology I 2+1

The course covers an introduction to industrial pharmacy; pharmaceutical industry profile, pharmaceutical process engineering, ISO, the design of sterile manufacturing facilities, the container/closure systems, some of the packaging processing methods. It also covers materials and plant construction, API facilities, environmental considerations of pharmaceutical manufacturing facility, environmental biotechnology, pharmaceutical isolators, comments on product development framework, ICH and drug registration formal procedures in Egypt

PT 809 Pharmaceutical Technology II 2+1

The course covers the various unit operations in pharmaceutical industry with emphasis on size reduction, size separation, size analysis, size enlargement, heat transfer, evaporation, drying, distillation, filtration, centrifugation, crystallization, extraction. It also covers the application of these unit operations in pharmaceutical industry with emphasis on the mechanisms and the equipment involved in the development of different dosage forms

PT 910 Advanced Drug Delivery Systems 2+1

The course covers the principles of pharmaceutical pre-formulation as a gateway to dosage forms design and formulation, developing formulations based on the physical and chemical properties of the drug substance and the intended use of the drug product. It also covers the formulation principles and applications of novel and targeted drug delivery systems by transforming proteins, genes, and other biotechnology driven compounds into therapeutic products, formulation aspects of biotechnology derived pharmaceuticals, the application of polymers and excipients to solve problems/issues concerning the optimization of absorption, selective transport, and targeting, drug development, approval process, and radiopharmaceuticals and their applications

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PG 706 Applied & Forensic Pharmacognosy 1+1

The course covers the knowledge concerning quality control from herbal aspects, sampling, structural, physical and analytical standards, purity, safety and adulteration of drugs and their detection. It also covers the modern chromatographic techniques employed for the evaluation of natural product and their products. It also provides the student with basic knowledge about the application of plant biotechnology for the production of pharmaceutically active materials. The course also includes an overview on forensic pharmacognosy including plants and their natural products that constitute health hazards, or intended for criminal uses to produce, abortion, loss of mental control, hallucination, heart arrest. Also, it includes the study of drug dependents, narcotics, analgesics psych energetics, euphoric, mycotoxin as a serious threat to general health and safety of community, contamination of food material with . poisonous fungi

PG 007 Phytotherapy & Aromatherapy 2+1

The course covers the guidelines for prescribing herbal medicinal drugs on the basis of the pharmacological properties of these drugs including therapeutic uses, mechanism of action, dosage, adverse reactions, contraindications & drug interactions. It also covers the pharmacotherapeutic principles applied to the treatment of different diseases, pharmacovigilance and rational use of drugs. The course focuses on the basis of complementary and alternative medicine with emphasis on herbal remedies, nutritional supplements, homeopathies, aromatherapy & their effect on maintaining optimum health and prevention of chronic diseases. It also covers studying of medicinal plants portfolios in relation to phytopharmaceuticals . in Egyptian Market

PO 501 Pharmacology I 2+1

The course covers general principle of pharmacology; pharmacokinetic, pharmacodynamics, receptor theory and drug interaction. Also, it covers principle of Pharmacology integrated with physiology and pathophysiology to diseases processes . regarding autonomic, neuromuscular as well as autacid and respiratory system

PO 602 Pharmacology II 3+1

The course covers principle of Pharmacology integrated with physiology and pathophysiology to diseases processes regarding cardiovascular system, & central nervous system. Also, it covers anti-hyperlipidemic and anti-inflammatory drugs. . Diuretics, local anaesthetics and skeletal muscle relaxant are also included

PO 703 Pharmacology III 2+1

The course covers principle of Pharmacology integrated with physiology and pathophysiology to diseases processes regarding drugs acting on endocrine system. Also, it covers chemotherapeutic drugs including anti-microbial, anti-cancer and . immunosuppressant. Immunopharmacology and gene therapy are also included

PO 904 Basic & Clinical Toxicology 3+1

The course covers general principles & scope of toxicology, introduction to toxicology, management of poisoning, forensic toxicology, mutagenesis, and developmental

toxicology. Also, it covers carcinogenesis, environmental toxicology, heavy metal poisoning, pesticides, Hazards of radiation, lacrimators, animal and plant poisons, as well as drug abuse

PO 005 Drug Interaction 1+0

The course covers pharmaceutical interactions, pharmacokinetic interactions, pharmacodynamic interactions, herbal & food drug interactions, alcohol and smoking drug interactions, CNS drug interactions, interactions of cardiovascular acting drugs, and interactions of anticoagulants. Also, it covers interactions of anti-infectives, anti-histaminics & immune-based therapies. Interactions of hormones and drug-disease interactions are also included

PM 401 General Microbiology & Immunology 3+1

The course covers the study of microorganisms, their morphology, diversity, cell structure and function, cultural characteristics, growth, metabolism, role of microorganisms in infectious diseases and microbial pathogenesis with a combination of laboratory and theoretical experience exploring the general aspects of microbiology. The course also covers the different mechanisms of transport across bacterial cell membrane, metabolic pathways and physiology of bacteria in addition to the principles of genetic characters including DNA and RNA structures, replication, different forms of mutation and mutagenic agents. The course also explores the basic concepts of microbial growth, cultivation and reproduction. Moreover, the course covers the following topics: the modern concepts of medical immunology, with an emphasis on host-parasite relationship, non-specific and specific immunity, mechanism of protective immunity, molecular and cellular immunology, including antigen and antibody structure, function and reaction between them, effector mechanisms, complement, and cell mediated immunity, active and passive immunization, hypersensitivity and in vitro antigen-antibody reactions, immunodeficiency disorders, autoimmunity and autoimmune disease, and organ transplantation

PM 502 Pharmaceutical Microbiology 2+1

The course covers the basic, practical and professional knowledge on antimicrobial agents, either antibiotics or non-antibiotics. It also covers the different sterilization methods and their application scope

PM 603 Parasitology 1+1

The course covers the parasitic infections of humans with knowledge concerning biological, epidemiological and ecological aspects of parasites causing diseases to humans. It also covers the different parasitological related diseases in Egypt causing serious health problems. The course covers the following topics: medical helminthology, protozoology and entomology concerning their morphological features, life cycle, pathogenesis, clinical manifestations, different diagnostic techniques, the most recent lines of treatment and prevention with control strategy for each parasitic infection, laboratory diagnosis of human parasitic infections

PM 704 Medical Microbiology 3+1

The course covers the basic features of general bacteriology, virology and mycology by familiarizing the students with the common infections and diseases of medical importance, their microbial causes, as well as laboratory diagnosis, treatment, prevention and control of such diseases. The virology part of the course covers the essential knowledge to recognize the epidemiology, mechanisms of pathogenesis, clinical picture, methods of laboratory diagnosis, treatment, prevention and control measures of RNA and DNA viral infections in humans

PM 905 Biotechnology 2+1

The course covers the concept of biotechnology, its main components, optimization of fermentation, bioconversion, biodegradation and bioremediation, gene therapy and genetic engineering. It also covers the biotechnological applications in the pharmaceutical industries

PM 906 Public Health 1+0

The course covers the global public health and the Sustainable Development Goals (SDGs), as well as the fundamentals of epidemiology, communicable and non-communicable diseases and their control with special emphasis on antibiotic resistance and antibiotic stewardship as well as emerging pathogens. The course also covers nutritional health, occupational medicine and women's, children's and adolescent's health and the relationship between the environment and public health. The course covers the optimal environmental conditions for improved public health such as air, food and water purity and sanitary water disposal and the ability to understand and evaluate the biological and chemical basis for health threats emanating from the environment

PC 101 Pharmaceutical Analytical Chemistry I 2+1

The course covers introduction to general chemistry; periodicity, types of chemical reactions, ionic and chemical equilibrium, expressions of concentration and chemical calculation and data analysis. It also covers analysis of anions and analysis of cations, either single or in mixtures with its application in different matrices

PC102 Pharmaceutical Organic Chemistry I 2+1

The course covers general principle of pharmaceutical organic chemistry, such as electronic structure of atom, alkanes [nomenclature, synthesis and reactions (free radical reactions)], cyclo alkanes. Alkenes, alkadienes and alkynes. It also covers the principles of different classes of aliphatic organic chemistry such as Alkyl halides (nomenclature, preparation and chemical reactions (SN_1 , SN_2 , E_1 , E_2)). Aliphatic alcohols and ethers, aliphatic amines, aliphatic aldehyde, aliphatic ketones and aliphatic acids and its derivatives

PC 203 Pharmaceutical Analytical Chemistry II 2+1

The course covers introduction to quantitative analysis and types of volumetric analysis. It also covers acid-base titrations ; acid-base theory, buffers, titration curves, indicators and applications. The course includes titrations in non-aqueous media, classification of ; solvents, theories and applications. The course also includes precipitometric titrations

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PC 509 Drug Design 1+1

The course covers the essential concepts of medicinal chemistry, how the drug exerts its biological and toxicological activities and how these activities are strongly correlated to its chemical structure (Structure-activity relationship; SAR) and its physicochemical properties. This course also covers the different drug metabolic pathways; Phase I and Phase II. The course also focuses on patient-directed clinical care; the molecular aspects governing drugs' pharmacokinetics (ADME), pharmacodynamics, optimization of drug action, possible side effects, in addition to understanding drug interactions are targeted. The course is also designed to familiarize the students with drug design and molecular modelling covering structure-based and ligand-based drug design. The course also covers the process of drug discovery and development from target identification until approval of a new drug with focus on lead structure identification, optimization and targeting certain receptors and enzymes active sites. Additionally, the course addresses the study of molecular docking, pharmacophore generation, and molecular modifications including prodrug design, stereochemistry alterations, isosteric replacement, drug . (metabolism and Quantitative Structure-activity relationship (QSAR

PC 610 Medicinal Chemistry I 3+1

The course covers different classes of antibiotics and antimicrobials (natural and synthetic), beside other synthetic chemotherapeutic agents (including antivirals, antifungals, antimalarials, antimycobacterials and antiparasitics). It also various anticancer therapies, hormones, and related drugs as well as drugs controlling pain and . inflammation (NSAIDs), rheumatoid drugs and opioid analgesics

PC 711 Medicinal Chemistry II 3+1

The course covers general principle of gain the drugs affecting the autonomic nervous system (ANS), respiratory tract, drugs acting on the cardiovascular system (CVS), central nervous system (CNS) and neurodegenerative disorders. It also covers antihistamines (H₁, H₂ blockers and anti-ulcer PPIs), local anaesthetics, oral . hypoglycaemics and diuretics as well as vitamins and related drugs

PC 012 Quality Control of Pharmaceuticals 2+1

The course covers quality control & quality assurance of pharmaceuticals and biopharmaceuticals, Good Laboratory Practice and documentation. It also covers Good Analytical practice and sampling; sampling of pharmaceuticals and related materials, type of sampling tools and sampling plans. The course includes validation of analytical and bioanalytical methods; 4Q model of instrument validation, ICH validation of analytical methods, data elements required for assay validation and FDA validation of bioanalytical methods. It also includes drug stability, stability studies, stability indicating assay . methods for drugs and drug excipient compatibility tests

PB 401 Biochemistry I 3+1

The course covers protein chemistry including; amino acids, protein structure, biologically important peptides, fate of proteins. In addition to nucleic acids structure and function including; replication, transcription and translation. The course targets introduction to

enzymology including; enzyme kinetics, function, regulation as well as enzyme inhibitors. It also targets porphyrin chemistry including; haemoglobin types, derivatives, metabolism and regulation, in addition to role of vitamins and minerals in human body. Biological oxidation and ATP synthesis are also covered

PB 502 Biochemistry II 2+1

The course covers carbohydrates and lipids chemistry in addition to glucose transport. It also covers energy production from dietary fuels including; carbohydrates, lipids and proteins as well as integration of metabolism. The course targets hormonal regulation of metabolism, biosignaling and inborn error of metabolism. Biochemistry of cancer and aging are also covered

PB 803 Clinical Biochemistry 2+1

The course covers biochemical/ pathophysiological changes and laboratory diagnostic markers for disorders of endocrine glands, renal function, hepatic function, gastric function, bone and mineral metabolism as well as plasma proteins and lipoproteins. It also covers clinical enzymology involving myocardial infarction. The course targets biochemical aspects of haematology, blood analysis, electrolytes, homeostasis, blood gases and acid-base balance. The course also targets recent molecular biology techniques and tumour markers in disease prognosis. In addition, handling, preservation, storage and analysis of biological samples are also covered

PP 801 Clinical Pharmacokinetics 2+1

The course covers basic principles of pharmacokinetics and their application to the clinical setting, single Intravenous bolus and oral kinetics, IV infusion, multiple IV bolus, short infusion & oral dosing, non-linear pharmacokinetics, pharmacokinetic models. In addition, it covers sources of variability in pharmacokinetics, dosage regimen and dosage adjustment in children, obese, elderly patients and chronic disease states, therapeutic drug monitoring and pharmacogenomics approaches

PP 802 Hospital Pharmacy 1+1

The course covers hospital pharmacy organization, structure, management and related activities on both technical and administrative levels in accordance with national and international established guidelines. It also covers administrative services include: the pharmacy, the pharmacy and therapeutic committee and policy making, the hospital formulary, medication purchasing, distribution and dispensing systems. Furthermore, the course covers the pharmaceutical (technical) services include preparation of Intravenous (IV) admixtures, parenteral nutrition, renal dialysis fluids, dispensing and safe handling of radiopharmaceuticals and cytotoxic drugs

PP 803 Community Pharmacy Practice 2+1

The course covers structured responding to symptoms in community pharmacy, differentiation between minor and major ailments and responding to minor ailments with over-the-counter products. It also covers concepts of patient assessment, counselling, and monitoring in community pharmacy and in outpatient care settings. In addition, the course covers the public health role of pharmacist including health promotion and disease prevention

PP 804 Drug Information 1+1

The course covers the concept and need of drug information, types of drug information resources (primary, secondary and tertiary literature), computerized and online drug information, literature evaluation and critical appraisal, retrieval of information. It also covers types of research studies, clinical trials, the basic concepts of biostatistics, statistical presentation of research data, concepts in inferential statistics, parametric and non-parametric testing, data analysis and ethical guidelines in drug research, professional skills required to effectively and accurately answer medication-related questions in a systematic and evidence based approach

PP 905 Clinical Pharmacy I 2+1

The course covers definition and concepts of clinical pharmacy and pharmaceutical care, and qualification to become a clinical pharmacy. It also covers patient history, medication reconciliation, therapeutic planning and drug-related problems, interpretation of clinical laboratory data and physical examination, providing medication therapy management services, principles of special care populations (geriatric, paediatric, obesity, pregnancy & lactation). The course also covers the principles of management and supportive care of oncological diseases, blood disorders, nutritional deficiencies and some common disease states like cardiovascular and respiratory disorders

PP 906 Pharmacoeconomics 1+0

The course covers introduction to the basic concepts of health economics, learning basic terms of health economics and understand key principles, the economic mechanisms of health care markets as market failures, and government intervention. It also covers the key components of health care financing, and some methods of how to contain health care expenditure. Alongside the major definitions in health technology assessment, an overview about different types of economic evaluation, budget impact analysis and their uses. Moreover, the course covers different methods of pricing among which value-based pricing

PP 007 Clinical Pharmacy II 2+1

The course covers principles of pharmacotherapeutics and management of the common disease states (e.g., gastrointestinal diseases, endocrine diseases, obstetrics and gynaecology, rheumatic diseases, renal diseases, CNS diseases)

PP 008 Pharmacoepidemiology & Pharmacovigilance 1+0

The course covers the basic principles of clinical research, addressing a range of study designs and analytical techniques for observational studies on the utilization, safety, and effectiveness of pharmaceuticals. It also covers key principles for understanding how to plan, implement, analyse, and criticize pharmacoepidemiological studies. This course also covers pharmacovigilance importance, concept, processes, systems, global safety standards and regulations and reporting systems

MD 101 Medical Terminology 1+0

The course covers an introduction for basic words structure and pronunciation, medical term: prefixes, suffixes and word roots, body organs and parts and common medical abbreviations, medical terms pertaining to integumentary system, respiratory system, gastrointestinal system, cardiovascular system, genitourinary system, . musculoskeletal system and nervous system

MD 202 Cell Biology 1+1

The course covers the different areas of cell biology, with emphasis on unicellular life. The course covers the following topics: synthesis and function of macromolecules such as DNA, RNA, and proteins; control of gene expression; membrane and organelle structure and function; bioenergetics; and cellular communication, . transformation; transport, receptors, and cell signalling; cell movement

MD 203 Anatomy 1+0

The course covers introduction to human anatomy, tissues of the body, skeletal system, articular system, muscular system, digestive system, cardiovascular, respiratory system, lymphatic system, urinary system, genital system, nervous and . endocrine system

MD 204 Histology 1+1

The course covers cytology, epithelium, connective tissues, blood, muscle, vascular, . lymphatic, respiratory, GIT, and endocrine

MD 305 Physiology & Pathophysiology 2+1

The course covers an introduction, homeostasis, nervous system, cardiovascular system, blood, reproductive and renal system, endocrine glands, cell injury, . inflammation, autonomic nervous system, fluid and electrolyte in balance

MD 406 Pathology 1+1

The course covers the study of biochemical, structural and functional changes in . cells, tissues and organs, which are caused by diseases

MD 007 First Aid 1+1

The course covers accidents, first aid ABCs, medical emergencies, effect of temperature, transportation of an injured casualty and first aid kit, respiratory emergencies, fractures and dislocations, bleeding and surgical emergencies, burns . and scalds, animal bites or stings and poisoning

NP 101 Information Technology 0+1

The course tends to provide students of all university's faculties with a brief introduction to the world of computers and the concept of information technology including: number systems and data representation, computer system components: hardware & software, storage and input/output systems, operating systems and utility systems, software applications. Also, it gives an overview about computer networks and internet: data communication, transmission modes, transmission media, computer networks, internet protocol, and internet services. It practices some computer applications in the laboratory

such as Internet Access, word processing and power point. It gives students a practical . experience on developing projects related to the specialty of each faculty

NP 102 Human Rights & Fighting Corruption 1+0

This course covers the following topics: human rights in criminal law, human right to change nationality or abandonment of one of his nationalities, international conventions related to the protection of human rights, the relationship of globalization and development with economic, social and cultural rights, economic, social and cultural rights of man, human rights in Islamic law, Women's rights in labor and social security . laws, human rights in litigation, civil and political rights of the human person

NP 403 Communication Skills 0+1

The course will help students develop necessary written and oral communication and presentation skills to improve inter- and intra-professional collaboration and communication with patients and other health care providers

NP 804 Pharmaceutical Legislations & Regulatory Affairs 1+0

The course covers a detailed presentation of law that governs and affects the practice of pharmacy, legal principles for non-controlled and controlled prescriptions, OTC drug requirements, opening new pharmacies, opening medical stores, opening factories, opening scientific offices, medicine registration, pharmacies and medicine stores management. It also covers pharmacist duties and responsibilities, pharmacist-patient . relationship, patient's rights and ethical principles and moral rules

NP 905 Marketing 1+0

The course covers the concepts, analyses, and activities of marketing management, assessing and solving marketing problems. Topics include marketing strategy, customer behaviour, segmentation, market research, product management, pricing, . promotion, sales force management and competitive analysis

NP 006 Scientific Writing 1+1

This course is designed to introduce students to the principles of good scientific writing, to be familiar with basic structure of scientific reports and research articles. It covers methods of paraphrasing, common mistakes in scientific writing, different writing styles, how to write a scientific report, proposal and manuscript, appropriate use of tables and . figures in data presentation and evaluation of literature and information sources

NP 007 Professional Ethics 1+0

Professional ethics provides general principles and history of pharmacy ethics, general principles of medical ethics, conflicts of interests and its management, pharmacists relationship with society and family, ethics in disaster, medication error, research ethics .and animal ethics

UR 101 Mathematics 1+0

Functions and graphs, limits and continuity, differentiation, exponential, logarithmic, and trigonometric functions, integration, basic differential equations, functions of several variables and problems related to them, probability and random variables, and hypothesis testing

UR 102 Psychology (1+0)

Introduction to psychology, cognitive processes, developmental psychology and educational psychology .

UR 203 Critical Thinking (2+0)

Critical thinking between the forms of human thinking, the place of critical thinking within the system of human thinking as one of the forms of active thinking, the definition of critical thinking and its most important characteristics. Developing critical thinking skills, introducing the definition of thinking skills, developing critical thinking skills. Applied aspects of critical thinking, methods of countering the fallacies in what is written, or in situations that require argumentation, or scrutiny of ideas promoted, confronting rhetorical methods and logical fallacies in everyday conversations, thus helping to counter media and propaganda methods .

UR 304 Entrepreneurship (2+0)

This course is designed to enhance a student's knowledge in leadership, business, and financial skills in pharmacy practice while learning the traits of an entrepreneur, current topics in entrepreneurship with a specific focus on pharmacy practice and patient care programs. This course will teach the participants a comprehensive set of critical skills needed to develop a profitable business project. This course is designed to provide the students the personal and business tools including risk-taking, strategic planning, marketing, competitiveness, and social responsibility to make the transition from the academic environment to the daily practice of pharmacy .now and in the future, with an emphasis on entrepreneurship

Elective Courses

PT E12 Cosmetic Preparations (1+1)

The course covers the concept of cosmetic and dermatologic preparations, appreciate the safety concept of cosmetic preparation, understand the new trends in cosmetic/dermatologic industry and know the therapeutic and medical applications of cosmetics as well as protection from their side effects.

PT E13 Quality Assurance & Control of Cosmetics (1+1)

The course covers quality variation in cosmetic industry, sources of quality variation, quality control and quality assurance, GMP in cosmetic industry Quality tests for different cosmetic preparations including in vitro and in vivo tests on animals and volunteers. It also covers the regulatory affairs related to cosmetic companies and registration of cosmetic products, marketing of cosmetic products.

PT E14 Veterinary Pharmacy (1+1)

The course covers an introduction about animals' classification as wild and domestic [mono-gastric (poultry and rabbits / horses / dogs and cats) and ruminant animals (bovine / ovine / camels)]. It covers main veterinary products: [For treatment (antibiotics, antivirals, anthelmintics, antiprotozoal, antihistaminics, antipyretics, physiological solutions,), health and growth promoters (vitamins and minerals, antimycotoxins, antioxidants, organic acids, immune-stimulants, probiotics, prebiotics and synbiotics, feed additives and supplements,) and Accessories (disinfectants, shampoos,)]. The course gives general information on veterinary medicines, their composition and presentation and safety aspects associated with their use both for animal and owner. The course includes methods of administration of medicines [Orally (drenching gun / in drinking water / in feed), intravenous, intramuscular, intra-dermal, subcutaneous, rectally, intra-vaginal, eye-drops,]. It also covers effect of life-stage on medicinal product suitability and vaccination protocols.

PG E08 Complementary & Alternative Medicine (1+1)

The course provides an overview of complementary and alternative medicine (CAM). The course explores the role of selected complementary and alternative health practices and promotions in the healthcare arena, such as herbal medicine and aromatherapy therapy, are an integral part of the course. The history and development of selected CAM practices and systems, how they work, and their relationship to traditional Western medicine are discussed. The concept of "wellness" versus disease treatment, and the mind-body connection are explored. This course aims to improve health professions' knowledge in CAM practices and their place in client care and health system; their ability to communicate advice and guide clients about these therapies and their knowledge of the practicalities, such as credentials, legal and regularity issues.

PG E09 Production & Manufacture of Medicinal Plants (1+1)

The course deals with the basic information about the production of medicinal plants, including collection, drying and processing of dosage forms from herbal drugs. It also covers medicinal forms from plants, drug extracts and starting material. The course includes comminution classification, different extraction methods and processing of extracts; purification, concentration, drying and comminution. It also includes standardization of extracts and processing to phytopharmaceutical dosage.

PG E10 Chromatography & Separation Techniques (1+1)

The course covers basic chromatographic terminology, classification of chromatography and special developmental techniques. It covers ion exchange chromatography, size exclusion chromatography (gel filtration), bioaffinity chromatography, vacuum liquid chromatography, chromatotron counter current chromatography and flash chromatography. The course also covers standardization using High Performance TLC, HPLC-UV, HPLC-MS/MS and GC-MS.

PG E11 Herbal Cosmetics (1+1)

The course covers classification of aromatherapy, its advantages and blending procedures. It also covers oils used in skin care and carrier oils, natural colouring matter, saponins and fixed and volatile oils as natural emollients.

(PO E06 Biological Standardization (1+1

The course covers types and phases of clinical trials, cardiovascular system testing, central nervous system preclinical testing, gastrointestinal tract preclinical, respiratory system preclinical testing and biostatistics

(PO E07 Veterinary Pharmacology (1+1

The course covers animal pathology and parasitology, veterinary medicinal care and practices, anatomy and physiology, equine and/or avian care, small and large animal care, metabolic systems and nutrition, immunology and anaesthetics

(PO E08 Drug Abuse (1+1

The course covers stimulants in drug abuse (Nicotine, cocaine and amphetamine) depressants in drug abuse. It also covers abuse of opiates, cannabis and alcohol, of anabolic steroids, abuse of hallucinogens and abuse of benzodiazepines and barbiturates

(PO E09 Occupational Toxicology (1+1

The course covers introduction to occupational toxicology, occupational toxicology disasters, exposure control measures, occupational dermal and inhalation exposures. Also, it covers carcinogens, causation analysis.

(PO E10 Sport & Exercise Pharmacology (1+1

The course covers how drugs can affect exercise and as well as how exercise can affect the action of drugs. Also, it covers cardiopulmonary agents; beta-blockers, diuretics, sympathomimetics, bronchodilator and hormonal, metabolic agents and performance-enhancing drugs; caffeine, ethanol and amphetamines

(PM E07 Infection Control (1+1

The course covers the basic principles of antibiotic policies, principles of good practice in hospitals in terms of prescribing and administering antibiotics, appropriate measures for prescribing and delivering antibiotics and other antimicrobials in in-patient and out-patient pharmacies. The course also discusses the implementation of antimicrobial stewardship principles and propagating awareness to it. Finally, it deals with appropriate disinfection and hygiene practices for infection control in hospitals

(PM E08 Biologicals: Biopharmaceutical & Immunological Products (1+1

The course covers the biological action, mechanism of action, production (small and large scale), quality assurance and quality control of biological pharmaceutical and immunological products. The course specially focuses on the clinical importance and application of each of these drugs

(PM E09 Bioinformatics (1+1

The course covers the basic principles of bioinformatics and sequence analysis, with emphasis on the microbiological and pharmaceutical aspect and application of the field. For example, it places emphasis on the bioinformatics of infectious diseases, on tracing epidemics, on drug target analysis and computational drug design. The course topics include biological databases, principles of sequence similarity and alignment, local alignment programs such as BLAST, global alignment programs, phylogenetic analysis and reconstruction, protein structure mapping and threading

PM E10 Fundamentals of Genomics 1+1

The course covers the emerging fields of genomics and metagenomics, with a pharmaceutical and pharmacological focus. Thus, it covers the principles of DNA sequencing, high-throughput sequencing, genome analysis starting from sequence quality control to pre-processing to assembly and ending with annotation and comparative genomics. The course also includes a brief introduction to pharmacogenomics and pharmacomicrobiomics, which are the impact of human genome and microbiome variations, respectively, on drug action, predisposition and toxicity. (The latter topics will be covered in more detail in the clinical pharmacogenomics course)

PC E13 Advanced Pharmaceutical Analysis-Spectroscopy 1+1

The course covers UV-Vis spectrometry, fluorimetry, flame spectroscopy (emission and absorption). It also covers refractometry, polarimetry, IR, NMR and mass spectrometry. In all; the principle, theories and their application in analysis are demonstrated

PC E14 Applied Analysis 1+1

The course covers lipids; classification and composition, physical examination, chemical examination and report on oil sample. It also covers milk; composition, physical examination and chemical examination

PC E15 Environmental Analysis 1+1

The course covers air pollutants, sampling, monitoring and methods of analysis. It also covers water quality parameters, sampling, gas analysis, metal analysis and water pollution. It also covers soil analysis

PC E16 Bioanalysis 1+1

The course covers definition of bioanalysis, its purpose and where it is conducted. It includes physicochemical properties of drug substances. Also, it covers biological samples; their composition, properties, collection, storage and their preparation. The course covers HPLC and HPLC-MS as common analytical techniques in bioanalysis. It also deals with analysis of small-molecule drugs, peptide and protein drugs in biological fluids. Regulated bioanalysis and guidelines (bioanalytical method validation) are also covered

PC E17 Advanced Drug Design 1+1

The course covers the principles of drug discovery; Target identification and validation, target-to-hit, hit-to-lead and lead optimization. Also, it covers the use of molecular

modelling software to perform different drug design techniques; 2-D QSAR, 3-D QSAR, fragment based drug design and ADMET properties, Moreover, the course handles different drug targets with focus on novel ones; the rationale design of enzyme inhibitor, receptor, nucleic acid and advanced targets

PC E18 Metabolism in Drug Discovery 1+1

The course covers knowledge necessary about the role of pharmacokinetics and metabolism in drug design, role of metabolism in drug toxicity, role of pharmacokinetics and metabolism in drug development in addition to the knowledge about the interindividual pharmacokinetic variability. It also covers the role of metabolism, absorption, distribution, plasma half-life and stereoselectivity in designing a new drug candidate as well as cases of metabolism-guided drug design

PB E04 Clinical Nutrition 1+1

The course covers healthy lifestyle modification programs including; estimated energy needs, calculation of calories, basal metabolic rate and dietary protocols for management of obesity. It also covers dietary care for patients with diabetes mellitus, cardiovascular, renal, gastrointestinal and hepatic disorders. In addition, the course discusses; impact of nutritional disorders on nervous system, role of nutrition in bone health, cancer prevention and treatment, role of vitamins and minerals in metabolism and their clinical significance. Sports nutrition care as well as maternal nutrition are also covered

PP E09 Management of Oncological Diseases 1+1

The course covers cancer etiology, risk factors, cancer staging and grading, diagnosis, prognosis, optimizing chemotherapeutic regimens, different types of tumours (solid and hematologic) and their management, toxicities of chemotherapy, supportive treatment, pharmaceutical care and patient's support measures

PP E10 Clinical Pharmacy Practice 1+1

The course covers some clinical and soft skills in clinical pharmacy practice. Topics include anti-coagulants, steroid management, inhalation techniques, home kits and monitoring tests, identification of drug-related problem, adverse drug reactions, pain management, obesity management, communication skills, time management patient safety and risk management

PP E11 Management of Infectious Diseases 1+1

The course covers the principles of antimicrobial regimen selection and the pathophysiology and therapeutics of commonly encountered infectious diseases so that students can design pharmaceutical care plans for patients. Infectious disease states include CNS infections, infective endocarditis, tuberculosis, gastrointestinal infections, intra-abdominal infections, parasitic diseases, urinary tract infections, skin infections, sexually transmitted infections, fungal infections, and HIV

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How to complain about the results of an exam

(Re-monitoring)

The results of the periodical and practical exams shall be announced before the end of the semester. In case of a complaint from the results of the examinations go directly to the course coordinator to file a complaint.

After the announcement of the final results, if you want to complain about the outcome, the complaint shall be limited to recalculation of grades.

Steps for requesting a Re-Monitoring for any course grades:

1. The student will fill out the online google form sent via email by the Office of the Vice Dean for Education and Student Affairs and specify the courses he would like to get re-monitored
2. The student shall pay the fees and the payment notice shall be submitted via email to remonitoring email stated by the office of the Faculty Vice Dean for Education and Student Affairs.
3. The exam control unit shall conduct the re-monitoring as follows:
 - Ensure that each part of the exam paper has been corrected and a grade is placed on it.
 - Ensure that all grades are copied from inside the exam paper to the outer cover.
 - The exam paper grades are calculated and making sure the correct score is monitored on the system.
 - Making sure that the practical, periodical and oral grades, if any, are monitored on the system.
 - The course grades are added in full.
 - The Office of the Vice Dean is reported in the detailed grades (written, oral, practical, periodical), whether there was a change in the student,s grades or not.
4. The result of the re-monitoring shall be announced by email.

Youth Welfare

The Youth Welfare Department is the technical body responsible for planning and supervising the implementation of student extracurricular activities and Students' Union in its various fields (cultural – artistic – social – sports – scouts- public service- and scientific and technological research).

The youth welfare department in the faculty is considered the assisting body for the faculty's students union to achieve its goals and demonstrate activities in representative manner, under the supervision of the Vice Dean for Education and Student Affairs.

The Youth Welfare Department is responsible for the following:

- 1- Supervising the implementation of the various students' union activities in the faculty.
- 2- Participation in central activities at the university level, Egyptian universities and Pharmacy faculties and the Ministry of Youth.
- 3- Training faculty students in the gym through a sports specialist.
- 4- Conducting activities in the faculty.

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